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Venture Capital Decision Making in the Age of Artificial Intelligence:
Investor Practices in Portugal - Valuation Methodologies

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Abstract: This thesis examines how Portuguese venture capital firms evaluate early-stage startups in a period shaped by rapid advances in artificial intelligence. Drawing on a literature review and survey responses from seven venture capital funds, the study analyses valuation practices and perceptions of risks specific to AI. The findings show that investors continue to rely on traditional valuation methods but depend heavily on qualitative judgement due to limited financial information. AI risks are perceived as important to assess but also comparable to other hypes of the past.

Keywords: Portugal; Venture Capital; Startup Valuation; Valuation Methods; Due Diligence; Artificial Intelligence (AI) risks; AI Startups

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1. Introduction

1.1. Background And Problem Statement

Venture capital (VC) is a central mechanism for financing innovation and high-growth startups. Empirical evidence shows that increases in the local supply of venture capital stimulate new firm creation, employment expansion, and income growth, underscoring the role of VC as a catalyst for innovation-driven entrepreneurial activity (Samila et al. 2011). VC is uniquely suited for funding young companies characterized by high uncertainty, limited tangible assets and strong information asymmetries, conditions under which traditional bank lending or public markets are not viable. In addition to capital, venture investors play an active role in governance and advisory, they monitor performance closely, help structure contracts, support strategic decisions, recruit key employees and open networks of customers, partners and later-stage investors (Gompers et al. 2001). In this way, VCs identify and finance highly innovative ventures, and historical evidence shows that the venture capital model has been instrumental in launching major technological waves, from semiconductors to personal computing, biotechnology and the internet (Gompers et al. 2001).

Over the past few years, artificial intelligence (AI) has emerged as the next transformative wave of technological innovation. Advances in machine learning, data availability and cloud computing, followed more recently by breakthroughs in foundation models, have dramatically expanded the range of tasks that can be automated or augmented by AI. According to the Stanford HAI AI Index 2025, private AI investment in the United States reached approximately USD 109 billion in 2024, representing one of the highest levels recorded. It reports a large increase in investment relative to prior years, implying a surge in funding interest. Similarly, McKinsey's State of AI 2024 finds that a significant share of firms reports using some form of analytical or generative AI in at least one business function, although adoption remains uneven

across sectors and many initiatives remain at pilot or early-deployment stages rather than fully embedded in core operations. Taken together, these indicators suggest that AI is transitioning from a niche research technology to a broadly applicable digital capability, while its economic impact remains concentrated in specific firms, industries and geographies.

As in previous technological revolutions, startups play a central role in translating breakthrough technologies into commercially viable products and services. Historical analyses of past waves such as the age of steam and railways, mass production, and the information and communication technologies (ICT) revolution show that each new techno-economic paradigm begins with a surge of entrepreneurial entry, in which new firms explore emerging technological possibilities and develop early applications and commercial models, while incumbents remain tied to the logic of the preceding paradigm (Pérez 2002). Recent innovation research reinforces this broader pattern. Henderson (2021) argues that firms systematically struggle with architectural or system-changing innovation because their routines, mental models, and incentive structures make such transformations difficult to initiate and sustain. These organizational constraints help explain why incumbents often respond slowly or ineffectively to emerging technological trajectories, thereby creating opportunities for new entrants to explore, pioneer and advance them. As a result, the early momentum of technological revolutions is typically generated by entrepreneurial newcomers, whose experimentation and willingness to explore unproven opportunities drive the shift toward the next technological paradigm. Recent evidence shows similar dynamics in the current AI wave. Startups are emerging as leading engines of AI innovation, adopting AI earlier and more intensively than larger firms and pioneering new AI-driven products and business models (AWS/Strand Partners 2025).

However, AI startups introduce several sources of uncertainty that extend beyond the usual risks faced by early-stage ventures. Rapid technological progress means that model architectures, training methods or competitive baselines can become obsolete within short cycles, reducing

the durability of technical advantages. Furthermore, AI firms are unusually dependent on access to large, representative and legally usable datasets, making data availability, ownership and privacy constraints central determinants of business viability. In parallel, concerns around bias, fairness, explainability and safety create additional reputational, ethical and regulatory exposure, particularly as emerging AI regulations in the EU and elsewhere introduce new compliance requirements.

These technological and regulatory characteristics directly interact with how VCs traditionally evaluate startups. Standard valuation techniques, such as discounted cash flow or multiples presuppose stable business models and reasonably predictable financial trajectories. Such conditions rarely hold for young ventures and are even less applicable in AI contexts where revenue models, unit economics and product-market fit may depend on evolving model performance or third-party infrastructure. As Damodaran (2009) notes, early-stage valuation is driven primarily by expectations rather than fundamentals, making it highly sensitive to assumptions. Consequently, VCs commonly rely on hybrid evaluation processes that combine financial tools with qualitative assessments of founder quality, market potential, team capabilities, technical defensibility and competitive dynamics.

Due diligence (DD) itself also becomes more complex in AI startups. Beyond assessing commercial and operational risks, investors increasingly need to verify data provenance and legality; evaluate model robustness, generalization and reproducibility; understand dependencies on external cloud or foundation model providers; and gauge exposure to forthcoming AI regulation. These layers of technical, ethical and regulatory assessment are not typically covered in traditional VC checklists, which were designed for software or platform ventures without comparable dependencies. This raises the question of whether existing VC tools and heuristics remain adequate when evaluating AI-intensive companies.

The Portuguese entrepreneurial ecosystem provides a timely context to address this question. According to Dealroom data reported in the 2024 Portugal Startup Ecosystem Report, the country hosts roughly 4,700 active startups, reflecting sustained entrepreneurial activity. Digital and deep-tech ventures are increasingly central to the ecosystem, with startups emerging as key adopters and developers of advanced AI technologies (AWS/Strand Partners 2025). At the same time, early-stage investment has seen growing engagement from both domestic and international VC investors (Armilar 2025). Yet despite this momentum, academic evidence on how Portuguese VCs evaluate AI startups is virtually non-existent. The small size of the market, differences in data access, and the relatively early stage of ecosystem development mean that global patterns may not fully apply.

This leads to the central problem addressed in this thesis. While the literature on venture capital offers robust insights into general valuation practices and due-diligence processes, and while research on AI startups highlights their distinctive technological and regulatory risks, we lack empirical evidence on whether these AI-specific characteristics are already reshaping how VCs make decisions, particularly in smaller ecosystems such as Portugal. Specifically, it remains unclear whether Portuguese VC investors adjust their valuation methods, metrics or assumptions when assessing AI startups, and whether they incorporate AI-related risks, model obsolescence, data dependence, and regulatory uncertainty and ethical concerns into their due diligence processes. By examining these questions, this thesis aims to fill this gap and to contribute to our understanding of how a maturing, but still young VC ecosystem is adapting to the opportunities and challenges introduced by the rise of AI-driven entrepreneurship.

1.2. Structure

As previously mentioned, this paper's goal is to tackle the lack of academical literature about the specificities of AI related startups, focusing on the foundational processes of valuation

and due diligence of startups by Venture Capital firms. Portugal is the geographical location of the analysis; it has a growing ecosystem of startups and the lack of academical research is particularly true in the country.

The paper begins with an introductory section, where the relevance of the paper is outlined, together with a background of the Venture Capital industry and Artificial Intelligence specificities, as well as the motivations for the research questions. It also highlights the structure of the paper. The next section entails the beginning of the analysis and is the Literature Review. In this section we lay the base of the research, by collecting and selecting existing research related to the goal of the paper. The first half of this review is dedicated to the valuation process, where the main valuation frameworks are stated, together with issues when applied to startups and AI specific adaptations and metrics. The second half focus is related to the last three research questions and will cover the due diligence process in general, the AI related issues as well as a focus on the risk inherent to the new technology. The methodology is explained in the following section, with a brief description of the questionnaire and the sample of the study. The subsequent section is titled “Findings” and is where the results of the questionnaire are interpreted and the conclusions are extracted. The final section is the conclusion, where the final results are summarized and stated, as well as limitations on the paper and suggestions for future research.

2. Literature Review

2.1 Overview of the Venture Capital Industry

Venture Capital (VC) can be defined as the long-term equity investment by professionals in new firms that typically are innovative and technologically disruptive (Wright et al. 1998). This form of private equity distinguishes from traditional forms of financing due to information

asymmetry, since small businesses and startups are unquoted (private) and lack historical performance data due to their nascent stage (Wright et al. 1998). This asymmetry, caused by the large differences between what the entrepreneurs and investors know, creates the high-risk high-reward environment of Venture Capital (Gompers et al. 2001).

Venture Capitalists take on an active and decision-making role in their investments through close monitoring (Wright et al. 1998) and service providing such as post-investment strategic guidance, connecting investors, connecting costumers, operational guidance, hiring board members and hiring employees (Gompers et al. 2016). Also, when an investment is made, it is illiquid, and its success is highly dependent on the managers/entrepreneurs (Fried et al. 1994).

Top tier American VC funds, on average over the past 30 years, have outperformed public markets net of fess, and have backed innovative companies that largely influence the global economy such as Amazon, Apple, Facebook, Google, Netflix and Starbucks (Gompers et al. 2016).

2.1.1 VC Funnel

The “VC Funnel” summarizes the activity of VC firms: starting with raising a fund, identifying and proceeding with an investment, monitoring and adding value to the invested firm, and finally exiting successful deals and returning capital to investors (Gompers et al. 2001). Tyebjee & Bruno (1984) and Fried & Hisrich (1994) developed similar frameworks exploring the multi-stage decision making process of VC firms, designed to progressively mitigate risks and reduce uncertainty about the startup. The word funnel describes decreasing deal volume and increasing information depth.

Deal origination is the ability to generate a pipeline of investment opportunities that come from various sources: founders directly reaching out to VC firms, referrals and industry events. There is a heavier incidence on referrals because referred deals are more likely to go through the first

screening phase since VC trusts the referrer's judgment and the referrer's know what kind of investments the VC firm is targeting (Fried et al. 1994). **Screening** narrows down the number of opportunities according to decision factors such as management team, market or industry, competition, product or technology and the business model (Gompers 2016). After going through screening, VC begins to gather more information about the proposals (Fried et al. 1994). The process involves an extensive assessment of the company's financials, competitive landscape, business model, and legal considerations (Tyebjee et al. 1984; Fried et al. 1994). This step is called **due diligence** and will be further explored in this section. Once the venture capitalist is conformed with the evaluation of the business, they proceed with the **deal structuring** (Tyebjee et al. 1984), where negotiations between entrepreneurs and investors take place. They negotiate employment terms (vesting), control rights (board control, prorata rights), cash flow rights (anti-dilution protection, dividends, investment amount, option pool, ownership stake and valuation), liquidation rights (liquidation preferences, participation rights, and redemption rights) (Gompers 2016). **Post-investment**, the role of VC expands from investor to collaborator (Tyebjee et al. 1984), adding value to the business in various ways: operational guidance, mentoring, shaping and recruiting management team and employees, facilitating strategic relationships with other companies, designing employees compensation and various board service activities (such as board governance) (Gompers 2016; Kaplan et al. 2001). Finally, VC firms will **exit** their investment and cash-out their gains, usually in a period of 5 to 10 years after initial investment, by directing a company towards merger, acquisition or initial public offering (Tyebjee et al. 1984).

2.1.2 Valuation Metrics

The enterprise value is an important aspect when elaborating a deal between the Venture Capital firm and the startup seeking investment. In the VC perspective, the value of the company determines the proportion of shares they receive given the investment value, influencing the

profitability of the fund; while in the entrepreneur side, it puts a value on the efforts and resources he has put into his company (Miloud et al. 2012).

Regarding startup valuation methodologies, it is very difficult to apply the traditional methods to new companies, since these are absent of operating history, show low levels (if any) of revenue and have higher probabilities of failure (Damodaran 2009). Besides that, the venture's value reflects the value of the founder's idea and its subsequent development, which is based on expectations and beliefs, while mature companies' valuation can be assessed using the value of the assets (Montani et al. 2020).

Given the limitations of startup valuation, Venture Capitalists have developed and adapted models that consider the higher risk and lack of financial data inherent in early-stage companies. This section will explore the main valuation methods used by professionals when valuing a company. According to Sinem Köseoğlu in the book "A Practical Guide for Startup Valuation" (2023), valuation methods can be separated into Traditional Methods and Alternative Modern Methods.

Traditional methods have relied on classical data-driven approaches, starting with **Discounted Cash Flow (DCF) Method**, which is an income-based approach that discounts different measures of firm income cash-flows, using an appropriate risk adjusted discount rate, and then adding a forecast of future cash flows also discounted with appropriate discount rates, yielding the firm value. Free-cashflow-to-firm (FCFF), free-cashflow-to-equity (FCFE) and Gordon Growth Model are included in this approach (Köseoğlu et al. 2023). Discount rates incorporate the risk of the investment, Damodaran defends that for early-stage startups, the discount rate targets should be 50 – 70%, while for firms in advanced stages (Bridge or IPO) should target 25- 35% (Damodaran 2009). The next method is the **Relative Valuation Method** and follows a market-based approach. This method estimates the value of a firm as a multiple of the firm's

balance sheet and income statement or cash flows components. In practice the value of the firm will be the average of the multiples of comparable companies, meaning companies with the same contextual market conditions (Köseoğlu et al. 2023). The most used multiples are Price-to-Sales (P/S), and Enterprise Value-to-Revenues (EV/Rev), Price-to-earnings (P/E) and Enterprise Value-to-EBITDA (EV/EBITDA). The last of the Traditional Methods is the **Net Asset Value (NAV)** and follows an asset-based approach. This method values the startup according to its assets, tangible and intangible. In practice, is the sum of all assets (cash, equipment, inventory, intellectual property) and subtracts the value of its liabilities to arrive at the net asset value (Köseoğlu et al. 2023).

The latter methods were invented specifically for the startup context, starting with the **Venture Capital Method**, created by Bill Sahlman, which involves estimating the future value of the startup (typically within a period of 2-5 years), and then discounting it with the investor's required rate of return (ROI) yielding the post-money valuation. The pre-money valuation will be the post-money minus the investment amount (Köseoğlu et al. 2023). Next, the **First Chicago Model Method** can be seen as a variation of the DCF method, since it runs three or more separate DCFs under varying assumptions that are weighted according to the probabilities of each outcome occurring (Köseoğlu et al. 2023). The **Scorecard Method** is a more qualitative assessment of a startup's value. It involves scoring various factors (management team, market size, product, etc) and then using the scores to estimate the value by comparing to similar companies (Köseoğlu et al. 2023). The **Dave Berkus Method** evaluates the chances of success of a startup through a set of guidelines and criteria. The value of the company will be the sum of the value attributed to each of the 5 criteria (Köseoğlu et al. 2023). The **Risk Factor Summation Method** is a combination of the previous two methods, the valuation is reached by assigning a score and a value to 12 different criteria (more complete than Dave Berkus), depending on the relative risks of the criteria (Köseoğlu et al. 2023). **The Real Options**

Approach values a startup by recognizing that future decisions have value, especially when there is uncertainty. The most common real options are: option to expand, abandon, delay or switch. Lastly, **Startup Valuation by Data Envelopment Analysis (DEA)** is a method used to measure how efficient companies are when using inputs (e.g., money, staff, data) to produce outputs (e.g., products, revenue, patents). It works by building a “best performance frontier” and then measuring how far each unit is from that frontier.

2.1.3 Challenges in Startup Valuation

Valuing ventures is difficult compared to mature companies, as said before, since young companies lack historical performance, depend on equity injections from private sources (VCs, angel investors and others) and lastly, have higher rates of failure (Damodaran 2009).

In this section we will explore the issues and challenges on the most used metrics to value startups – Discounted Cash Flows (DCF) and Relative Valuation (multiples). Beginning with the intrinsic value approach of DCF, there are four components that make up this framework and impose estimation difficulties regarding startups: cash flows from existing assets, expected growth from improved efficiency of existing assets and new investments, discount rates calculation from risk assessment (of the business and its equity) and terminal value estimation (Damodaran 2009; Montani et al. 2020). Cash flows from existing assets may have two different estimation challenges depending on the nature of the startup, they can be so proportionally small compared to the overall value of the firm that makes no sense to value them, or they can have relevant value but be very difficult to estimate that value for the following reasons: the lack of historical information makes it difficult to support the strength of the revenues, meaning that we don't know what would happen in less favorable macro-economic conditions, or it's hard to separate expenses made to generate current or future revenues and this division is relevant for calculating these cashflows (Damodaran 2009; Montani et al. 2020). The next point is

estimating the cashflows from growth assets which are the bulk of a startups value and is the main challenge when performing this valuation. There are various problems with this analysis: we cannot use past revenue as an estimation of future revenues, meaning that we depend on the firms' expectations and the bias that comes from it; hard to access future profits with increased revenues given the lack of operating history and lastly is necessary to assess the quality of the growth because it's hard to estimate the expected return on capital, due to the fact that the company has made few investments and in a short period of time (Damodaran 2009). Discount rates are used to incorporate risk in the valuation of the company, and the tools used to estimate discount rates are inefficient since startups are not publicly traded and lack financial information. Finally, the terminal value accounts for a great majority of a startup's current valuation, so its important to correctly assess when the firm will reach stable growth and the characteristics of this stable growth. The main aspects to infer are: will the firm reach stable growth (given high failure rates), when will it reach stable growth (how many years of high growth until steady state) and at what rate does it steadily grow (Damodaran 2009).

Relative Valuation is also a famous and simple framework to assess a startup's value, but it also imposes some challenges in reaching a final value of a young firm. First challenge comes from choosing what to scale the value to, since some firms report losses, EBITDA may not be feasible, book value is normally a very small number and does not represent the capital injected into the firm, even revenues may be inapplicable to some pre-seed or seed deals. Another problem is to find comparable companies since publicly traded firms have different cashflows, risk profiles and growth characteristics and private firms don't have public information to calculate multiples. Next problems are the inability to find a proxy for risk in privately held firms and how to control for survival, meaning that companies with higher chances of surviving should have higher relative valuation, which in practice is hard to do (Damodaran 2009; Montani et al. 2020).

2.1.4 The Valuation of Artificial Intelligence Startups

Artificial intelligence startups can be characterized by their high-growth potential and limited collateralizable assets, together with high uncertainty and obsolescence risk, making it difficult for these ventures to access conventional banking funding. The solution is the Venture Capital market, where investors require higher returns for the increased risk and uncertainty. The assessment of this kind of startup follows conventional methods; however, some specific elements are introduced considering the high technological footprint of the venture, factors such as patents, know-how and AI-specific intangible assets will influence the valuation of such startups (Moro-Visconti 2024).

In such a dynamic market, it's required that investors understand technological potential and market evolution. Some specific features of AI startups include: Innovative technology (these startups are at the forefront of technological developments like computer vision, machine learning and natural language processing), Data-Driven Solutions (leverage of large data sets to train AI models), Scalability (usually these products are highly scalable with rapid growth prospects) and Talent Concentration (it is required top-tier talent in areas like software engineering and data science) (Moro-Visconti 2024). Moreover, there are aspects that will play a role in the market valuation of AI startups compared to traditional ones (Moro-Visconti 2024). Some AI startups can achieve disproportionately high valuations given their growth potential, data assets and technology ownership; their valuation is considerably volatile, due to the highly dynamic characteristics of this market influenced by regulatory changes, market sentiment and technological trends; lastly there are more opportunities of successful exit strategies, either high profile acquisitions by bigger players of the industry or IPO (Moro-Visconti 2024).

The valuation methodologies mentioned in the previous section of the literature review can be adapted to better accommodate the specific differences inherent to these startups. The income

approach (more specifically the Discounted Cash Flow model) needs to consider special forecasting giving the different revenue streams related to AI such as software licensing, consulting services, subscription models and data monetization. Also, data driven projections are important given the reliance of AI on this matter, the use of AI and data analytics tools may be beneficial for accurate revenue forecasts based on market trends, user behavior and historical data (when available). Scenario analysis for AI adoption is useful given the variation of AI adoption rates in different industries. Finally discount rates and growth rate need to be adjusted to account for AI-specific risk factors such as data privacy and security, regulatory compliance and AI talent availability (Moro-Visconti 2024).

Regarding the market approach (Relative Valuation), the two main adaptations are related to the comparable companies and the AI market dynamics. The first point considers that comparable companies should be similar in terms of technology, growth potential and consumer base, moreover other comparable metrics should be introduced such as AI patent portfolios or proprietary algorithms. The second point relates to the importance of considering market dynamics such as market trends, competitive forces and the appearance of disruptive technologies when establishing comparisons (Moro-Visconti 2024). Other elements need to be taken into account regardless of the valuation approach chosen, these elements regard assessing the availability and quality of AI talent within the startup; evaluating startup's data assets given their importance for training the AI model; considering ethical and regulatory considerations; utilizing AI metrics such as accuracy rates, user engagement, customer retention and model performance to evaluate the competitive position of the startup; and finally analyzing strategic partnerships with existing platforms or players (Moro-Visconti 2024). All the previously mentioned elements have influence on the startup valuation.

The AI hype is something real and might consequently create an environment where AI startups and firms in general are overvalued (Fang et al. 2025). There is an anchoring effect that causes

valuation premiums and overestimated market multiples, caused by the dramatic early success of AI milestones leading investors to expect rapid growth and extraordinary earnings from all AI related firms (Fang et al. 2025). When high valuations do not back realized performance, there is a valuation misalignment risk. The need for a metric that links AI capability and valuation is very evident. Fang, Tao, and Li (2025) developed the Capability Realization Rate (CRR), which is the ratio between realized AI-driven performance and total AI capability potential. The ratio is in percentage terms and a high level of CRR relates to a company that successfully translated AI into tangible business outcomes. Conversely, a low level means that even if a firm has a high capability potential (advanced AI technology or expertise), that capacity has not yet yielded proportional revenue, user growth or cost savings (Fang et al. 2025). The CRR model provides a measure of valuation misalignment where low CRR firms show valuation premiums based on future expectations and not present performance while higher CRR firms show that the current valuation is being matched to a good level of performance given the AI capabilities of that firm (Fang et al. 2025). Though the CRR is a valid instrument to assess whether a determined AI firm's valuation is anchored to believes or performance.

3. Research Questions

Building on the gaps identified in the existing literature and the contextual challenges outlined above, the following research questions are designed to guide the empirical investigation into how Portuguese venture capital firms evaluate AI startups. While prior research offers robust frameworks for general startup valuation and due-diligence practices, it remains unclear whether these approaches are being adapted to the technological, data-related and regulatory specificities of AI ventures, particularly within a smaller and still maturing ecosystem such as Portugal. To address this uncertainty, the research questions explore how investors value startups, whether they recognize the need for AI-oriented assessment models, how they organize and prioritize due-diligence activities, and which risks they view as inherent to AI-driven business models. Together, they provide a coherent basis for examining how VC practices evolve in response to emerging technological challenges.

ID	RESEARCH QUESTION
RQ 1	What valuation methodologies are used by Portuguese Venture Capital firms and what is the importance of valuation when contracting a deal?
RQ 2	Is there a need for an AI specific framework when valuing these startups?
RQ 3	How do Portuguese venture capital investor's structure and conduct due-diligence processes in early-stage startup investments and which factors do they prioritize?
RQ 4	What risks do Portuguese venture capital investors perceive as specific to AI startups, and how do these perceived risks shape their due-diligence focus?
RQ 5	In what ways, if any, do due-diligence practices differ when Portuguese VCs evaluate AI startups compared to non-AI startups?

4. Methodology

Further development on the methodology chosen for this study is needed and will follow. The foundations of the study subject were laid through an extensive literature review of the materials considered relevant for our analysis. The review covers all aspects of the research questions and is, in this way, an acceptable foundation for the questionnaires which consequently are the tool used to extract conclusions on the Venture Capital ecosystem and decision-making process in Portugal, applied of course to the chosen thematics. Following the review, a questionnaire was developed as the main resource to answer the research questions.

Gompers et al. (2016) performs an extensive study in the paper “How do Venture Capitalists make decisions”, with several research objectives relevant to our study. The paper was a strong inspiration for the methodology here present. Even though the scope of this paper is more focused on the specificities of AI startups, the structure and inspiration come from the previously mentioned paper. The questionnaire was delivered to all main players in the Venture Capital industry, meaning that the data received was provided directly by the target of the study (Venture Capital firms), eliminating intermediaries and yielding transparent and trustable data.

4.1 Questionnaire Design

The questionnaire was developed in a google forms format and was delivered to VC offices in various methods (Email, LinkedIn, personal connections). The format was mostly qualitative with a mix of open questions and some quantitative questions in the form of Likert-scale questions (1-5 rankings) with the possibility of justification. The purpose is to develop a bridge between what was studied in the literature review section and the real-life activities of the target group, to extract conclusions about the chosen research questions. The questionnaire is divided into two sections: Valuation Section and Due Diligence Section. The first one consists in five open questions on what valuations methods the funds use and what criteria is used in that

choice, advantages/disadvantages, how to deal with lack of data availability and different aspects in AI businesses; finalizing the first section, there are three Likert-scale questions to assess the perception of the investors on the importance of valuation, how subjective the process is and the necessity for alternative frameworks for AI startups. The second section regarding Due Diligence follows the same structure: 7 open questions regarding general aspects of the due diligence process (duration, success rate, use of external expertise) and specific factors regarding AI startups (main risks, additional steps in the process); followed by 3 Likert-scale questions on the importance of the due diligence process, necessity for AI-related expertise and level of confidence in assessing AI-related risks.

4.2 Data Sample

The population of interest of the questionnaire was identified as the Venture Capital firms operating in Portugal, since they are the organizations that daily perform the processes that this study examine. Besides that, they are the ones investing in disruptive technologies such as Artificial Intelligence and are for that reason capable of providing important information regarding our research questions. Though, the choice of the population aligns with our research objectives, which seek to understand the valuation and due diligence practices in general and applied to AI startups.

The sample of the questionnaire consists of seven venture capital firms that responded to the survey: Shilling VC, Lince Capital, Armilar Venture Partners, HCapital New Ideas, LC Ventures, Octanova, and Insight Ventures. These funds together represent a diverse and well-balanced sample of the Portuguese VC landscape in terms of the assets under management (AUM) , stage of investment, organizational scale, and thematic focus. This fact reinforces the validity of the results obtained in this study, especially those referring to the valuation and due-diligence practices applied to AI startups.

A cluster analysis of the firms participating in this study identifies three clear clusters in the sample. The first is a group of early-stage software VC funds, and the examples in this sample are Shilling VC and LC Ventures. They have investment preferences that focus on pre-seed and seed opportunities. A second cluster includes larger institutional funds, such as Lince Capital and Armilar Venture Partners, with notably higher AUM using broad investment processes, which may require deeper due diligence, more profound financial modeling and technical assessment. A third cluster centers on HCapital New Ideas, Octanova, and Insight Ventures. These firms fall between these two poles, combining early-stage and growth-oriented approaches. These three clusters highlight different investment philosophies, risk tolerance, and scale.

Overall, the population is well-balanced and methodologically appropriate for this research. First, it covers a large spectrum of AUM sizes, ranging from small early-stage funds to large institutional players. Second, it covers multiple investment stages, from pre-seed to series A and B and early-growth. Third, the sample contains both generalist technology investors and specialized deep-tech funds.

Figure 1 – Venture Capital Firms Characteristics – Realized by the Authors

Venture Capital Firms	Assets Under Management (M€)	
Armlar Venture Partners	<50	3
HCapital New Ideas	50-150	2
Insight Venture	>150	2
LC Ventures	# Companies Invested	
Lince Capital	<30	2
Octanova	30-60	3
Shilling	>60	2

5. Findings

The following section will dissect the results of the study, Figures 2 and 3 represent the statistical results of the Likert Scale questions for better understanding of the quantitative questions.

Figure 2 – Quantitative Questions – Valuation Methodologies

Valuation Questions	Mean	St. Dev.
How important is the enterprise valuation when contracting a deal?	3,71	0,70
How much do you agree that valuation processes in early-stage startups are largely subjective?	4,57	1,05
To what extent do you agree that AI startups require alternative valuation frameworks?	3,14	1,55

5.1 Valuation Methodologies

5.1.1 Valuation Importance and Subjectiveness

The goal of this section of the paper is to expose the results from the survey conducted to Portuguese Venture Capital firms, and analyse them in light of the literature review, understanding the state of art of valuing startups in Portugal. The first point in discussion must be the general importance of attributing value to the underlying business in the process of contracting a deal. The question made was to attribute a degree of importance from 1 to 5 to the enterprise value, the results show consensus, with a low standard deviation of 0.71 and mean of 3.71 (See Figure 2), in a way that all firms believe it is important given the fact that all answered above 3.

It is safe to assume that valuation is not a make-or-break topic, and there are several other factors that may have more influence in the decision making of Portuguese VC firms, as one respondent stated that «the team, accelerated growth after investment and exit options» are more relevant. Only one gave maximum importance to this topic, stating that is a key aspect in the attractiveness of a deal. It is consistent with Miloud et al. (2012) that valuation is important to align both investors' and entrepreneurs' ambitions to ensure fair treatment, meaning that both parties agree on the value of the underlying business. Of course, it has influence on the funds profitability and is also through the valuation that is determined the equity share that VC firms receive in exchange for the capital committed. Even though it may seem that the value attributed to the business might be the most important factor when looking at a deal, the evidence shows that it is only given a medium to high importance to this topic and there are criteria with stronger influence for Portuguese investors. A reasoning behind this conclusion might be the difficulty associated with attributing a value to business in its early stages, given the high subjectiveness of the process (Montani et al. 2020).

When asked about how subjective the valuation process is, especially in early-stage startups, the vast majority (all but one) of respondents considered it highly subjective at the maximum level, with mean of 4.57 and standard deviation of 1.05 (See Figure 2). The outlier to this question defended its point arguing that there are various methods to assess the value of a startup, and the collective use of a few of them can mitigate the qualitative component. The challenges of applying traditional valuation methods tailored to mature companies, tied to the lack of market and company data forces VC firms to incorporate this subjective analysis. This subjective component is what makes valuing startups, in practice a 'guess' or 'alchemy' (Miloud et al. 2012). One VC suggested that given the limitations of correctly assessing the intrinsic value of a company, there is a need to evaluate the market, the team and other qualitative factors, which are dependent on the person making the judgement. Montani et al. (2020) lists important

arbitrary points of focus very decisive for the right qualitative assessment of the company: attention to future forecasts, use of probabilities when considering different scenarios and the consideration of specific characteristics of the startup (like the business model) rather than data on comparable companies in the market (Montani et al. 2020). One fact that stands out in this analysis is that it takes experience and expertise to conjugate qualitative and quantitative factors when estimating the value of a company.

5.1.2 Valuation Methodologies Used: challenges and criteria

When asked which valuation methodologies used, there is for sure a consensus in the fact that one methodology is not enough, with all respondents stating that they use more than one method. Meaning that, consistent with the literature, the use of multiple valuation methods significantly reduces the failure rate of agreement between founder and investor (Miloud et al. 2012), pointing to a more complete effort of incorporating various perspectives and assumptions into the final valuation number. Also consistent with literature is the conclusion that there is no perfect method, all methods have limitations and strengths (Montani et al. 2020; Damodaran 2009).

The results show a dominance of the following three methods: Discounted Cash Flows (DCF), Multiples and Venture Capital Method. Literature is consistent regarding the use of these valuation methods, they are the most used within startup valuation (Dhochak et al. 2024). Even though not exclusively, five out of seven respondents use either DCF, Multiples or the Venture Capital Method. This ratio allows for the conclusion that these three methods are enough to provide venture capitalists with the value of the underlying firm. It is important to note that one respondent uses no methods, stating that the process of attributing value to a firm is entirely subjective. Three out of seven use all three of the previously mentioned methods, the remaining three respondents (excluding the firm that does not use any method) use a combination of either

Multiples and DCF, Multiples and Venture Capital Method or finally Venture Capital Method or DCF. Adding, the respondent who uses the combination of Multiples and DCF, differentiates that DCF is especially useful when investing, and Multiples approach might be more useful when conducting comparative analysis or earlier stages of the investment process, due to the simpler nature of the method (Köseoğlu et al. 2023).

Regarding the selection of the methods, one very important aspect is the stage of the venture. Considering specific limitations of each valuation method, some of them are more effective in different stages than others (Montani et al. 2020). Three out of the six users of valuation methodologies clearly state that the stage of the venture influences the decision on which method to use. Only one respondent clearly states that they do not change methodology depending on the stage. There is consensus that DCF is more useful or appropriate to more mature companies, with two VCs saying they trust this method more in this stage. The reasoning behind this choice may be that one of the limitations of this method is the lack of historical data, affecting the estimation of revenue sturdiness and future growth projections (profit margins, terminal value assessment) (Damodaran 2009; Montani et al. 2020). More mature companies may mitigate the limitations of the method, mainly the lack of historical data, ensuring that a better value estimation is reached.

In consequence, the Venture Capital Method may be more useful when it is particularly difficult to estimate the value of the firm through the income (DCF) or market (Multiples) approach, the advantage is that through this method, the value of the company is achieved by estimating the required return on investment (ROI) through the projection of a future expected value of the firm (Köseoğlu et al. 2023). This method is useful when it is more sensible to define an exit value and required return than to estimate the value of an idea and its development, which is the main portion of value for ventures in the first years of their life, given the few tangible assets and undercapitalization inherent firms in this stage (Montani et al. 2020).

When asked about the criteria considered when choosing which valuation methodology to use, the respondents presented various aspects with no consensus in this question. While one respondent stated that they use the same methods almost always (Multiples as a comparison and DCF as the main method), all others stated various factors as relevant when choosing the valuation method.

Potential is mentioned and is relevant because it might be decisive since ventures with high growth might require forward-looking methodologies such as Venture Capital Method that better capture the upside uncertainty. Other participants in the round are also viewed as a decisive criterion because other investors will have their valuation ranges defined and this fact might help decide which valuation is chosen so that the firm value aligns with the other investors. Actuals vs Future is mentioned, relating to whether the company has reliable historical data or is primarily assessed on future projections, helping to choose between observed performance methods (DCF, Multiples) or forward-looking ones (Venture Capital Method). Also, the ability to reflect the nature of the business cash flows is stated since businesses can have very different economic profiles when it comes to cashflows timings, volatility and revenue dynamics. Some methodologies, like DCF or Multiples, may be better when it comes to more stable and predictable revenue trajectories while companies with uncertain and irregular cashflow patterns might need alternative methodologies like the Venture Capital Method (Köseoğlu et al. 2023).

The final criteria presented was the next round expected valuation, this is important because today's price must be consistent with future round valuation expectations, so when choosing the correct method, investors must ensure the financial feasibility of the value of the startup today given the trajectory until the next round. Other aspects previously explained were also mentioned: stage of the venture and data availability.

The following question regards advantages and disadvantages associated with the previously mentioned valuation methods. One VC states that limited information, highly volatile and subjective markets, are disadvantages across all methodologies. Other respondent answers that the main challenge is the trade off between being “exactly wrong” and “directionally correct”. This is important when valuing startups, because simpler methods can deliver valuations that align with market sentiment even if lacking precision, while more complex frameworks may appear precise but small changes in the assumptions might dramatically alter the valuation outcome. Half of the respondents mentioned that the advantages of the DCF are its detail and forward-looking perspective based on projected cash flows, with focus on long-term financial potential. While, on the other hand, there is consensus on its main disadvantages, these being the heavy reliance on assumptions and the difficulty inherent when applying this method to early-stage startups with uncertain or no cashflows (Montani et al. 2020). Though is worth mentioning that one VC sees the opportunity to question the assumption made in the DCF to better refine the model.

The comparable or market approach (Market Multiples) is mentioned to have as main advantages the simplicity and the fact that is grounded to real market data. The disadvantages rely mostly on the challenge to find real comparable companies and the fact that market changes can distort values (Montani et al. 2020; Damodaran 2009). One disadvantage associated with both Market Multiples and the Venture Capital Method is their difficulty in assessing the potential valuation of the company, since the Multiples approach anchors the value to similar companies and the Venture Capital Method only calculates a future exit value, and not the full value creation path (Köseoğlu et al. 2023).

Finally, the stated advantages of the Venture Capital Method are its usefulness attached to high-growth startups and alignment with investor expectations or required returns, but its reliance on

assumptions about exit outcomes and timings is viewed as a disadvantage that can make this method imprecise.

5.1.3 Overcoming the lack of financial information

As previously stated in the literature review, the main challenges related to attributing value to startups rely around the lack of financial information, with this aspect being the main difference between this mature and non-mature companies (Damodaran 2009).

The question asked to VC funds was how they deal with this recurring challenge when performing the financial valuation of a startup. Six out of seven respondents included subjective assessments as a tool to overcome this issue. One VC explains, using a quote from Don Valentine – Sequoia founder, that asking the right questions and observing the founder's process of reaching the conclusion is an important step. Other respondent states that talking to other funds that are analysing or have analysed the startup, together with current investors and clients is their way to extract the most amount of information possible.

The meetings with the founder are considered important, as they were mentioned three times, with focus on how the founders can justify and explain their assumptions for the future of the startup. One VC also mentions that when information is scarce, they rely more on comparables, with emphasis on the conclusion that it's better to have a proxy than nothing, highlighting that overcoming this issue is a critical skill and easy to do it in an erratic manner. Two other respondents implied that they use scenarios to increase the reliability of the projections, with one developing this idea further: multiple scenarios are developed (optimistic, realistic and conservative) related to the forward-looking forecasts based on expected costumers, pricing, costs, and market dynamics. This same respondent also adds that industry benchmarks are important, as previously mentioned, and includes other qualitative factors such as the founders' experience, early product traction and the overall market potential. The final suggestion by

another respondent was the use of a Convertible or SAFE (Simple Agreement for Future Equity) model with a discount. This tool postpones the valuation decision to a future financing round, when the company has accumulated more traction, operational data and financial information in general. SAFEs and convertible notes address this challenge by allowing capital to be deployed immediately under a contractual mechanism that converts into equity later, reducing the risks of mispricing in the present round (Van Der Meyden et al. 2024).

5.1.4 Valuation of Artificial Intelligence Startups

Moving to the analysis of the specific case of Artificial Intelligence startups and still considering the valuation process, the question whether AI startups require alternative valuation frameworks generated discord visible in the standard deviation of results ($SD= 1.55$, see figure 2) and of the Likert scale. The average result was 3.14 and five out of seven voted three or above meaning that most respondents consider the possibility that a specific model to perform the valuation of AI startups might be useful. Two of the respondents agree that this kind of startups explicitly require alternative frameworks.

One suggestion could be the use of specific metrics, such as the Capability Realization Rate (CRR) presented in the literature review (Fang et al. 2025). Two respondents disagree with this view and comment that most of their portfolio companies already adopted AI in the business, so there is no need for any separate methodologies, hinting that through their current valuation methodologies, they can integrate AI specific assessment. Goes is favor of the view that the disruptive and dynamic characteristics of this group of ventures require more technical assessment and the adaptation of the traditional methodologies will help on reaching the correct valuation (Moro-Visconti 2024). Other VC, who voted indifferently to the question, commented that AI native companies are experiencing dynamics that have occurred in the past. This affirmation presents a relevant point of view that AI is comparable to other hypes commonly

called «tech bubbles», such as the Dot-Com Bubble, Telecom Bubble and Cryptocurrency Boom (Floridi 2024). If previous periods with similar characteristics didn't require alternative valuation frameworks, even with the same disruptive environment of rapid technological advancements, then it is understandable that the traditionally applied methodologies are up to date.

It's important to clarify that the question asked did not imply that the use of the previously mentioned methodologies should not be applied to AI startups, literature is clear that the use of various valuation methodologies is the safest way to ensure the validity of results by cross-checking through various valuation approaches (Montani et al. 2020; Köseoğlu et al. 2023).

When asked which steps are introduced specifically in the case of AI startups, the responses covered some of the particularities inherent to this group of ventures. Three respondents admit that there are no significant additional steps, while one of them states that market data in the industry is very viable and AI is comparable to hypes of the past (Floridi 2024), other discretely entails that they care about how the AI is being applied as a solution or product improvement and if data security is guaranteed. The other four VCs enumerate several aspects that are assessed and integrated in the valuation of the company. One states that technical Due Diligence is essential, further development on this will follow. One VC worries more about product differentiation, knowing that obsolescence rates are high within this field, and product differentiation is the best shield for this problem (Moro-Visconti 2024), through talks with current investors and clients, this VC also analyses the impact of the startups solution. On the same note, it is also mentioned by another VC, the need to consider the risk of loss of relevance of the startup, given the evolution of AI capabilities. The risk of obsolescence is present in all kinds of startups and industries, but it's specifically important to assess in the AI environment

(Wingate et al. 2025; Moro-Visconti 2024). The last point made the respondents relates to the assessment of the data on which the AI model is trained. Access to proprietary or hard-to-replicate data sets, data volume, quality, and labelling are factors that can influence the survival rate of an AI startup (Moro-Visconti 2024), also, this same VC adds that the quality and technicality of the team is more important in this field.

6. Conclusion

This thesis examines how Portuguese venture capital firms evaluate early-stage startups in a context increasingly shaped by artificial intelligence. By combining an extensive literature review with empirical evidence collected directly from leading VC funds in Portugal, the study explored two fundamental dimensions of the investment process, valuation methodologies and due-diligence practices, and analyzed whether these are being adapted to the technological, competitive and regulatory particularities of AI-driven ventures. While the overall findings indicate that traditional VC frameworks remain broadly stable, the results also show meaningful shifts in emphasis and evidentiary requirements, particularly in the assessment of AI startups.

The first part of the analysis focused on the valuation of early-stage ventures, with emphasis on the importance and subjectiveness of the process, an analysis of which valuation methodologies and criteria are in use, together with the main advantages and disadvantages associated with each. Overcoming the lack of financial information and AI specific assessment were also explored in this study. The valuation process was considered relatively important but not a make-or-break topic, literature is consistent in this topic with valuation being considered as a way to connect investor and founder expectations. Regarding the subjectiveness of the topic, Portuguese VCs agree that the process is highly subjective when it comes to startups, given the lack of historical financial information and extreme reliance on assumptions and forecasts. The valuation methodologies used by Portuguese funds are Discounted Cash Flows, Market

Approach (Multiples) and Venture Capital Method, with no clear winner when it comes to the most used method. Most VCs use a combination of methodologies, which is referred to in literature as a correct practice to mitigate valuation errors. Stage of the startup is relatively important when choosing which method to apply, but the utilization of various methods normally covers the necessities of the valuation process. Through an analysis of advantages and disadvantages, it is possible to conclude that there is no perfect method, and they complement each other. The lack of financial information is widely considered as the main challenge inherent to valuing startups, and consistent with the literature, VCs tend to recur to qualitative information to overcome this problem. The consequent analysis regards AI startups and there is controversy in this subject. There is no consensus on whether these startups require alternative frameworks and methodologies. The adaptation of the traditional methods and an AI-specific metric are explored in the literature review, even though respondents agree that AI startups require special attention in some topics through technical Due Diligence, they stated no financial differences in the process. Most relevant specificities regard qualitative judgment in topics such as product differentiation and team assessment. AI was also referred to as hype technology, comparable to many others in the past, like Dotcom bubble or Cryptocurrencies boom.

The second part of the study examined due-diligence practices and how these are applied in the Portuguese ecosystem. The results confirm that due diligence is considered a critical step for all funds, regardless of size or investment stage. Although the duration and depth of due diligence vary significantly across respondents, the underlying priorities are consistent. Investors focus mainly on the founding team, the strength of the business model, the feasibility and scalability of the product and the identification of legal, financial and operational risks. These patterns are closely aligned with existing academic frameworks that describe due

diligence as a multidimensional process aimed at reducing information asymmetry and validating the core assumptions of the venture.

The research also examined the risks that investors perceive as specific to AI startups and how these risks influence the way due diligence is conducted. The findings show that Portuguese VCs view AI ventures as exposed to a set of uncertainties that differ from those of traditional startups. The most frequently mentioned concern is the rapid pace at which AI technologies evolve, which may cause a product to become outdated very quickly. Investors also refer to strong competitive pressure, especially from larger companies that have superior access to talent, data and infrastructure. Some respondents highlight risks related to data availability and stability, noting that AI models depend heavily on reliable and legally accessible datasets. Ethical and regulatory issues such as privacy, transparency and the potential impact of the AI Act are considered relevant but are not seen as the main source of risk.

These perceived risks help explain why AI startups receive more detailed scrutiny during due diligence, even though the overall structure of the process does not change. Investors pay closer attention to technical aspects of the solution, the quality and origin of the data, the strength and durability of the technology and, in some cases, the performance of the system in real use situations. Ethical and regulatory aspects are also reviewed, but they are incorporated into general risk assessment rather than treated as a separate step. Overall, the findings indicate that due diligence becomes more intensive for AI startups because the risks associated with this field require a deeper understanding of how the technology works and how sustainable it is in the long term.

Taken as a whole, the findings show that Portuguese venture capital firms continue to rely on traditional evaluation frameworks, yet they adapt their analysis when technology-specific uncertainties arise. Valuation remains a subjective process supported by established methods,

and due diligence continues to serve as the central tool for reducing information asymmetry. However, the emergence of AI brings additional layers of complexity that prompt investors to examine technical, data-related and competitive factors with greater depth. These results contribute to a better understanding of how VC practices evolve in emerging innovation fields and highlight the need for ongoing dialogue between investors, founders and policymakers as artificial intelligence continues to reshape the entrepreneurial landscape.

6.1 Limitations and Future Research

This thesis has certain limitations that must be acknowledged to provide a more accurate understanding of its findings. The first limitation concerns the scope of the study, which focuses exclusively on the Portuguese venture capital market. Portugal is a relatively small ecosystem with a limited number of active VC funds, especially those operating at early stages and investing in technology-driven ventures. This structural characteristic naturally restricts the diversity of investment approaches captured in the study and may limit the extent to which the findings can be generalised to larger or more specialised markets.

A second limitation relates to the size of the empirical sample. The study is based on responses from seven VC funds, which, although representative of key actors in the Portuguese ecosystem, may still introduce bias. Funds that participated may differ from those that did not respond, either in their openness to academic collaboration or in their exposure to AI-related investment decisions. This selection dynamic may influence the types of practices and risk perceptions reported.

A third limitation concerns the nature of the data collected. The research relies on a mixed-method questionnaire composed of both qualitative open-ended questions and six quantitative items. While this approach allows for a broad understanding of patterns and provides richer explanations, it also presents challenges. The depth and detail of responses vary across

participants, and the use of self-reported information may not always reflect actual practices in live investment processes, particularly in areas that involve informal judgement or internal procedures that are not fully standardised. Finally, the study captures investor practices at a single point in time, during a period in which the AI landscape is changing rapidly. Advances in AI technologies, shifts in competitive dynamics and the gradual implementation of the EU AI Act may influence both valuation approaches and due-diligence practices soon. The findings should therefore be interpreted as reflecting the state of the market at this specific moment.

These limitations point to several promising avenues for future research. First, future studies could incorporate the perspective of AI startups to understand how founders perceive the risks associated with AI and how they experience VC valuation techniques and due-diligence processes. This would provide a more balanced view of the investment relationship and reveal potential gaps between investor expectations and entrepreneurial realities. Second, comparative or cross-sectional research across different countries or regions would help contextualise the findings and determine whether the practices observed in Portugal reflect broader global patterns or whether they are specific to smaller, emerging VC ecosystems. Such research could identify how regulatory environments, ecosystem maturity or industry specialisation influence investor behaviour. Third, longitudinal research would be valuable for tracking how VC practices evolve over time as AI technologies develop and as regulation becomes more clearly defined. Repeated data collection in future years would help assess whether investors formalise new procedures, adjust their risk perceptions or adopt different valuation frameworks as the AI market continues to mature.

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8. Appendices

Figure 3 – Survey Summary: Valuation Methodologies

Valuation Methodologies Questions	Valuation Methodologies Answers
Which valuation method (ex: DCF, Multiples, Venture Capital Method...) do you use most frequently, and why? Does it change with the stage of the startup?	One fund uses no valuation methods. The remaining respondents report the use of a combination of methods, with three using the combination of DCF, VC Method and Multiples; other funds use either DCF and Multiples, Multiples and VC Method or VC Method and DCF. DCF is reported to be most useful for more mature companies. Only one respondent does not change methodology regarding stage of the venture.
Which are the main criteria considered when choosing the best valuation method to be used?	Answers did not converge into one criteria. The reported criteria are potential; maturity of the company, investment amount and other participants in the investment round; Actuals vs Future; the ability to better reflect the nature of the businesses' cashflows; the expected next capital round valuation and finally the stage and data availability is the last criteria reported by the VC funds.
What are the key advantages and disadvantages associated with each valuation method?	DCF is considered a more detailed and forward-looking methodology, although it is less reliable for early-stage startups with uncertain or no cashflows, also it relies too much on assumptions. Multiples approach is considered simple and evidence based, disadvantages can be the lack of comparable companies or the fact that does not consider potential valuation. VC Method is good for high-growth startups and incorporates investor expectations, disadvantages are the reliance on assumptions (exit outcomes and timings).
How do you deal with the lack of data availability when performing the financial valuation of a startup?	VCs hold talks with current investors, clients and funds that have analysed the company. Other VC reports that it relies on comparables as a proxy. Building scenarios is also mentioned by two funds. The questioning of the founders assumptions is also reported. The suggestion of a SAFE/Convertible model to the founders and finally industry benchmarks and the emphasis on qualitative elements is mentioned.
Are there any differences in the process when investing in AI businesses? Which extra aspects come into play?	Three VCs say they do nothing different. Other two funds worry about product differentiation and the risk of loss of relevance. Other fund highlights the importance of technical Due Dilligence. Lastly, the analysis of the Data on which the AI model is trained on is mentioned.

Armilar

Armilar Venture Partners is one of the most established and influential venture capital firms both in Portugal and Southern Europe. Founded in the year 2000 and headquartered in Lisbon, Armilar has invested in early-stage technology companies, supporting founders from inception to global scale-up. Armilar views itself as a very early-stage VC with a strong focus on technology and a particular interest in backing disruptors for whom data, digitization, and connectivity are at the heart of business value creation.

It remains active in Pre-Seed, Seed, Series A, and Series B rounds in early stages. Most seed stages take to the home markets of Portugal and Spain, while at Series A and later rounds, the firm considers high potential across Europe and, in selective cases, the United States.

In 2025, Armilar announced the first closing of its fourth flagship fund, Armilar IV, at more than €120 million with institutional support from partners such as the European Investment Fund and the Sociedad Española para la Transformación Tecnológica. The fund would invest in deep-tech and disruptive B2B startups at Series A and beyond, and it aims to continue raising additional capital well into 2026.

The investment thesis of Armilar focuses on technology-driven B2B businesses that solve important problems in a new innovative way. The company underlines solutions that leverage technology and science. Its portfolio has fostered a number of successful unicorns and high growth exits such as Feedzai and OutSystems.

HCapital New Ideas

HCapital New Ideas operates as a venture capital arm of HCapital, which is a private investment company in Portugal. This company concentrates on offering support for development in innovative SME companies in Portugal. HCapital New Ideas has a strategy directed at early innovation, where it invests in firms that are greatly differentiated, technologically intense, and able to tackle needs in emerging markets. Unlike HCapital's private equity business, HCapital New Ideas invests in relatively young firms that are in their early expansion stage, needing capital to facilitate speed in product development and deployment.

HCapital New Ideas has a noticeable affinity for innovation-oriented and high-growth verticals, with a focus on: energy, smart territories and mobility, industrial process innovation, data and connectivity. This diversified sector focus also reflects the fund's goal of contributing to the innovation ecosystem in Portugal, investing in companies that can grow in Portugal and internationally. HCapital currently manages over €150m in equity investments, with a specific

allocation for Venture Capital investments under their New Ideas initiative. The Venture Capital fund invests in the range of 500k-3m Euro, late seed to series A/B. HCapital New Ideas has invested in several scale-ups in the technology sector in Portugal. These companies include GT Renewables and Ecozoleti.

Insight Venture

Insight Venture was founded in 2020, in Lisbon. Insight Venture's VC-related activities are closely linked to innovation in Portugal and early-stage entrepreneurial ventures that match contemporary transformation trends in the economy and markets, especially in sustainability and technology sectors. Insight Venture sets itself apart in the Portuguese market with a themed investing methodology that has a robust emphasis on sustainable innovation and technology with a keen eye on the future. The fundamental idea of their investing model revolves around environmental sustainability, efficiency, and technology transformation.

The fund actively looks for startups (in no particular stage) and scale-ups with strategies that relate to key transformational trends, which are: Renewable energy and clean technology, Resource efficiency and circular economy, Smart cities, Health and life sciences, Tourism and mobility, Digital platforms. These thematic priorities reflect a dual mandate, which sets apart Insight Venture's VC endeavors in that it aims for a competitive economic return as well as investments that can help in achieving other sustainability and structural transformations in the economy of Portugal. Some startups currently in their portfolio are: SIA and Cell 4 Food.

LC Ventures

LC Ventures is a Lisbon-based venture capital investor founded in 2015 that has been known for their involvement in investing in early-stage technology startups, mostly in Portugal but with ties all over Europe and other continents. The company has been identified as among the most actively involved early-stage VCs in Portugal. LCV ventures focuses solely on the pre-seed and seed phases of a start-up. The company's primary investment thesis centers around tech-driven businesses, software-only solutions, and tech products. This emphasis on software and ICT represents a focus on low asset intensity tech models where early-stage capital and mentorship would make a substantial impact in product development and market entry.

With a capital pool of 50 million euros under management and tickets in range from around €100,000 to a maximum of €1 million. The number of companies in the portfolio of LC Ventures exceeds 50. The companies in this portfolio operate in different locations. There is a heavy presence in Portugal, as well as in other European, North American, and Latin American markets.

Lince Capital

Lince Capital is a Lisbon-based venture capital company that operates as an independent venture capital and investment fund management company with a substantial involvement in investing in innovative and high-growth companies in Portugal.

Lince Capital has an extensive investment platform, with reported assets under management of around 500 million euros in their venture capital funds as well as other investment funds. This organization has also been able to attract over 1,600 individual investors, with more than 50

different nationalities, all of whom are served by a team of around 25 professionals in 14 funds under management, with over 60 successful acquisitions attributed to their investment activities.

Furthermore, a VC-oriented fund with emphasis on innovative companies, the Lince Innovation Fund III, has been shown to recently allot a total of €146 million for investing in Portuguese startups with R&D and innovation features. Public data suggests that, as of late 2025, Lince Capital has invested in about 36 technology-centric firms, of which 34 are of Portuguese origin, with a total investment base of over €140 million in innovation-driven Venture Capital funds. The companies that are part of their portfolio consist of technology leaders as well as innovation ventures in the following sectors: Sword Health, Feedzai, Coverflex, and others. With around €500 million in funds under management and a range of innovation and VC funds, Lince represents a respectable player in the Portuguese ecosystem.

Octanova

Octanova is an investment house in Lisbon, Portugal, founded in 2020 by managers with experience across more than two decades and offering a suite of investment funds that range from private equity funds to innovative startups and high-growth companies.

Unlike traditional venture capital firms that deploy pure equity into startups, Octanova has an investment platform that involves a number of fund vehicles, from fixed income to digital assets to growth-oriented funds designed to appeal to a global investor base across 20+ countries.

Within the bigger platform, Octanova has a few venture capital funds that maintain growth and innovation-oriented equity investing. We highlight the AI Next Gen Fund: VC fund for AI

solutions across health, finance, industry, and media markets in Portugal, Europe, the UK, the US, and Brazil. The VC activity of Octanova spans technology-driven sectors, from mandates in early-stage digital ventures to sector-specific innovation in AI, HealthTech, FinTech, and TravelTech.

The venture funds of Octanova are closed-ended, a common structure for traditional VC investing-meaning that the capital is committed for a fixed investment period and deployed in portfolio companies over various rounds. Octanova VC offerings are oriented to the following sectors: AI – (AI Next Gen Fund), Digital technologies & scalable platforms, HealthTech & FinTech, Travel & Hospitality Technology.

Shilling

Shilling is an early-stage VC firm with headquarters in Lisbon; it was founded in 2011 and for a very long time has been considered one of the most active seed and early-stage VC firms in Portugal. Besides its traditional early-stage fund activity, Shilling introduced a €50 million Opportunity Fund targeted at growth-stage investments (Series A and beyond) designed to support later rounds and bridge the perceived funding gap for scaling startups in Portugal and Europe.

Shilling invests across a range of early company stages, with an emphasis on Pre-seed and Seed, Early Revenue / Early Growth, Growth-stage via the Opportunity Fund. Shilling usually writes first checks from around €100 k to €1 M in startups. The investment approach of Shilling is sector-agnostic but technology-centric, with a wide variety of verticals represented within its portfolio. Among these are: Enterprise and SaaS solutions, Consumer and marketplace

platforms, Artificial Intelligence / Deep Tech, FinTech and HealthTech. The diversity of sectors underlines Shilling's focus on technology-driven business models.

Shilling has made more than 60 investments to date, notable historical investments across Shilling Fund I and Founders Fund include early backing of companies like Unbabel, Barkyn, Uniplaces, and BestTables.

Shilling is based in Lisbon, but the investment mandate stretches beyond Portugal to European startup markets. With €52 M under core early-stage deployment, check sizes between €100 k–€1 M, and a growing growth-stage Opportunity Fund (€50 M), Shilling perfectly represents a venture capital partner that combines capital, community, and operational support to empower technology-driven startups to scale internationally.

Survey on Evaluation and Due Diligence of AI Startups by Venture Capital Funds

7 respuestas

[Publicar estadísticas](#)

What Venture Capital fund do you work for?

7 respuestas

Shilling

Lince Capital

Armlar

Hcapital New Ideas

LC Ventures

Octanova

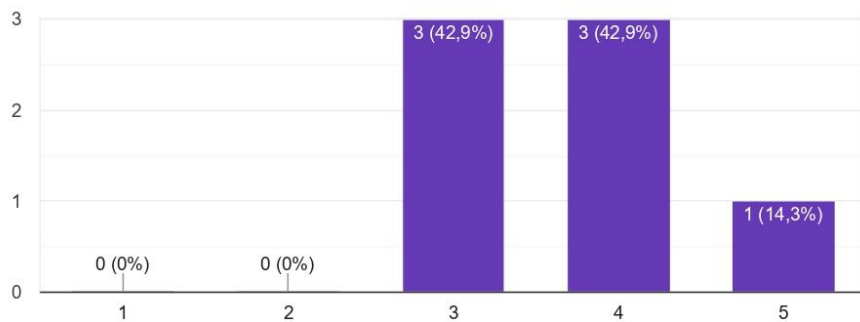
Insight Venture

Valuation Metrics

How important is the enterprise valuation when contracting a deal?

 Copiar

7 respuestas



Comments

2 respostas

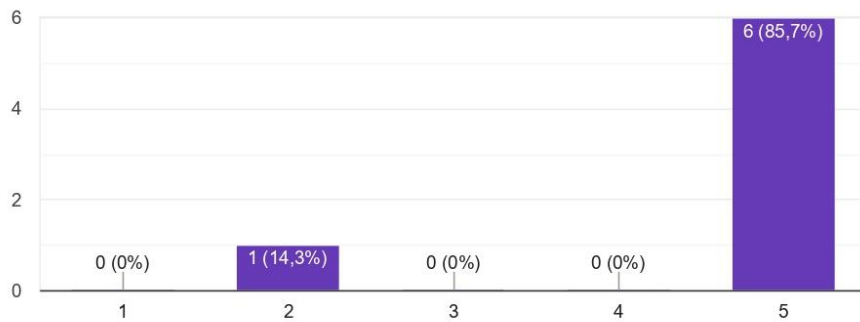
It's a key aspect of the attractiveness of the deal

The team, the potential for accelerated growth after the investment and the exit options are more relevant.

How much do you agree that valuation processes in early-stage startups are largely subjective?



7 respostas



Comments

2 respostas

There are a number of methods that can be used, from DCF to multiples.

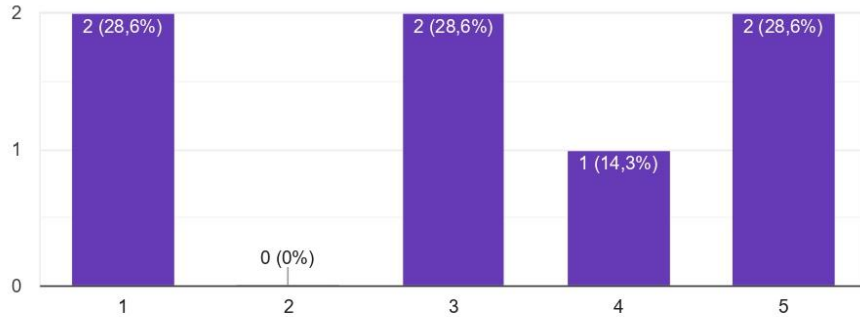
When you don't have much historical data, it's difficult to assess the company's intrinsic value. In that case, you need to evaluate the market, the team, and other qualitative factors, which can be highly subjective and depend on the perspective of the person making the assessment.



To what extent do you agree that AI startups require alternative valuation frameworks?



7 respostas



Comments

2 respostas

Similar dynamics happening today with AI native companies have occurred in the past

Most of our portfolio companies already use AI so there is no point in creating a separate methodology for AI.

Which valuation method (ex: DCF, Multiples, Venture Capital Method...) do you use most frequently, and why? Does it change with the stage of the startup?

7 respostas

None. Subjective. There are no methods

We try to use a combination of all, and we tend to use and trust DCF more for more mature companies.

A mix. Yes it does change...

A combination of the above

1. DCF; 2. Multiples. DCF is especially useful when we invest (early stage). We do not change methodology depending on the stage (e.g. pre-seed or seed).

Multiples and VC Method

venture capital method or DCF depending on the stage



Which are the main criteria considered when choosing the best valuation method to be used?

7 respostas

Potential.

Maturity, investment amount and other participants in the investment round

Actual vs future..

ability to better reflect the nature of the businesses' cashflows

We use DCF almost always and Multiples is mostly to provide a comparison.

The next capital round valuation expectation

The stage and data availability.



What are the key advantages and disadvantages associated with each valuation method?

7 respostas

Limited information, highly volatile and subjective spaces and markets

Typically it's a trade off between being "exactly wrong vs directionally correct"... the more mature stage, the more multiples focused (simple though evidence based) methods are best applicable to valuations

not applicable

DCF offers a detailed, forward-looking valuation based on projected cash flows but relies heavily on assumptions, while multiples are simpler and market-based but can be misleading due to lack of comparable companies or profitability.

Nonetheless DCF allows us to question the assumptions used and thus better refine the model.

The Multiples and VC Method do not consider potential valuation of the company. DCF are too subjective regarding their assumptions

DCF: Its main advantage is that it focuses on fundamentals and long-term financial potential, but its disadvantage is that it's difficult to use for early-stage startups with uncertain or no cash flows.

VC method: It's useful for high-growth startups and aligns with investor expectations, but it relies heavily on assumptions about exit outcomes and timing, which can make it imprecise.

Comparable (Market) method: It's quick and grounded in real market data, but finding truly comparable startups can be challenging, and market changes can distort valuations.



How do you deal with the lack of data availability when performing the financial valuation of a startup?

7 respostas

"In the business, it's all about figuring out which questions are the right questions to ask, and since we don't have a clue about the right answer is we're very interested in the process by which the entrepreneur gets to the conclusion that he offers" - Don Valentine, founder of Sequoia.

We try to talk with other funds analyzing or which have analyzed the company before. We talk to current investors and clients as well.

We try to get as much comps as possible. Better have a proxy than nothing. Overcoming lack of data is a critical skill, though it's easy to do it in a erratic manner.

We try to build our own scenarios

We focus on the data we have and on how solid and explainable are the assumptions made by the founders.

Suggest a SAFE/Convertible model to the founders with a discount

Focus on industry benchmarks and build forward-looking forecasts based on expected customers, pricing, costs, and market dynamics rather than relying on limited historical data. I also develop multiple scenarios (optimistic, realistic, and conservative) to increase the reliability of the projections. In addition, I emphasize qualitative factors such as the founders' experience, early product traction, and the overall market potential to support a more holistic and realistic valuation.



Are there any differences in the process when investing in AI businesses? Which extra aspects come into play?

7 respostas

No

The initial analysis of the company and what makes a startup different in terms of product requires a different and more in depth analysis, trying to understand how the product differentiates. Again, talking with current investors and customers becomes important to assess how the startups solution impacts and changed their operation.

Not really. Market data in the specific vertical is very helpful and valuable to work with. I do t think ai native need a specific model. As said it's somehow comparable to other "hypes" of the past.

The need to consider the higher risk of loss of relevance of the start-up given the evolution of AI capabilities themselves

No difference. We do want to know how will AI improve the product/solution and how to ensure that guardrails and data safety will be built into the product/solution.

Technical Due Dilligence is essential

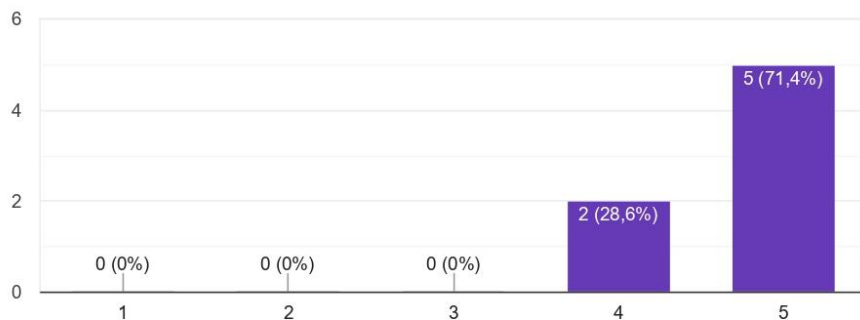
AI models are only as good as the data they are trained on. so there are important topics like access to proprietary or hard-to-replicate datasets, data volume, quality, and labeling. Also, the quality and technicality of the team is more important than other areas.

Due Diligence

How important is the due diligence phase in your investment decision-making process?



7 respostas



Comments

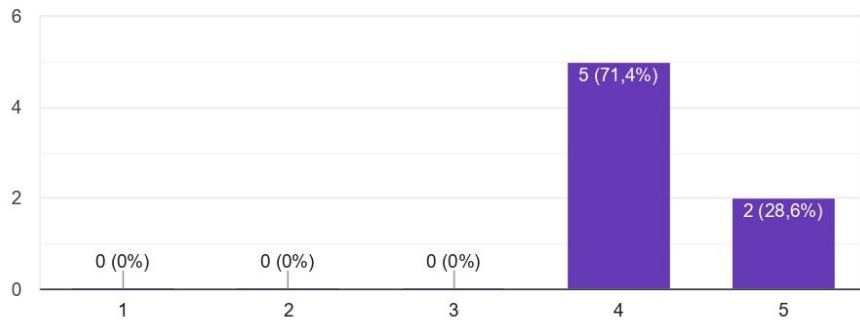
1 resposta

In the case of Pre-seed there is little historic data so DD is less relevant, except regarding the background of the founders.

To what extent do you think due diligence for AI startups requires specialized technical expertise?



7 respostas




Comments

2 respostas

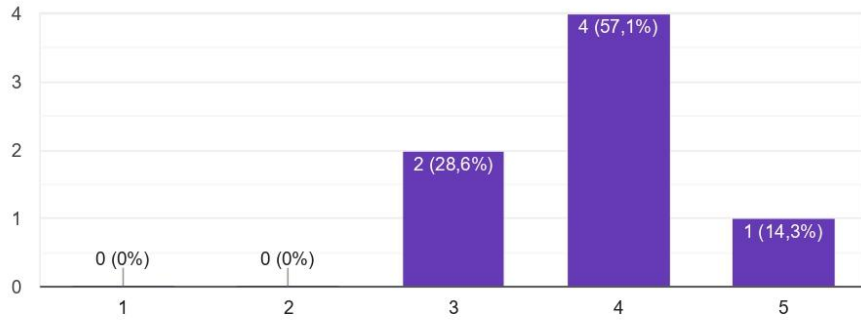
AI native companies with specific technological aspects require deep understanding of the tech angle

Just as for IT product/solutions, one will need technical people knowledgeable of the main problems in order to be able to conduct a proper DD.



How confident are you in your fund's current ability to assess AI-related risks during due diligence?  Copiar

7 respostas



Comments

0 respostas

Ainda não existem respostas a esta pergunta.

How extensive (in months) is your due diligence process until you decide to proceed with a deal?

7 respostas

1

2/3 months more or less, depending on pipeline opportunities

Variable. Minimum a couple of months but typically more like 6...

2 to 3 months

Should be less than 1/2 months

~2/3 months



What cannot be overlooked when performing the due diligence on a deal?

7 respostas

Endurance of the business

Scalability, growth potential, potential ongoing legal and tax issues and founders' fit and dedication to the process

In the ai specific context: The tech that is claimed, the tech team

The Team, the Technology, the Competition, the profile of the target clients

HR, financial and tax DD.

The basic technology feasibility

combination of team credibility and business fundamentals

How many companies begin the due diligence process vs how many close a deal?

7 respostas

2-5%

We have analyzed over 500 opportunities, having completed investments in 36 companies

1 or 2 for each 5 to 10

50% success rate

>95%

50% in average



Do you consult external experts to access certain technical issues when analysing a potential investment?

7 respostas

Sometimes

Yes, for legal, technical or tax due diligence processes

Not often

Yes. For legal, fiscal, technical and commercial DD

Yes

yes

yes if we ar not comfortable with the area

Do you introduce additional steps or assessments for AI startups?

7 respostas

No

Not particularly

Real Live Testing

No, besides technical DD

i don't think so

Do you factor ethical or regulatory compliance (transparency, privacy, AI Act) into your risk assessment?

7 respostas

Yes

~

marginally

Yes.

yes



What are the main risks that make AI startups different from traditional ones?

7 respostas

The principles are the same

Not many in our view, just the validation of the solution and guaranteeing there are exit paths and no risk of becoming obsolete

Probably understanding the sustainability of the claimed advantage... in other words, the likely good that a new company may "eat up" the opportunity

Technological loss of relevance

These are less deterministic and require constant investment to keep the product/solution up to date due to the rapid development of AI.

The competitors performance and the lack of market opportunity

AI startups depend too much of data, that sometimes can be difficult to obtain, since it can be costly, limited or they can loose access to data. And also the fact that AI evolves extremely fast. A startup's model may become outdated quickly, or a larger player might release a superior one overnight.

Final Section

0 respostas

Ainda não existem respostas a esta pergunta.

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