

STOCKHOLM SCHOOL OF ECONOMICS
1351 M.Sc. Thesis in Business & Management
Spring 2026

THE GROWTH GAME OF LIFE SCIENCES VENTURES

A Qualitative Study on How Investors Create Value Beyond Financial Capital Throughout the
Scaling Process of Early-Stage Life Sciences Ventures

Kristina Hellström (50646)

Supervisor:	Korinzia Toniolo
Date examined:	2026-05-18
Discussants:	Kristaps Piternieks & Stefano Masalha
Examiners:	Stefan Haefliger & Constantine Blume

Abstract

This thesis examines how investors create value beyond financial capital in early-stage life sciences ventures. While prior research in venture capital and entrepreneurial finance has primarily focused on financial outcomes such as valuation growth, exit performance, and returns, less attention has been given to the organizational mechanisms through which investors influence venture development. This gap is particularly salient in the life sciences sector, characterized by scientific uncertainty, regulatory complexity, long development timelines, and high capital intensity. The study applies a qualitative and abductive research approach based on semi-structured interviews, including investors and representatives from early-stage life sciences ventures. The findings indicate that investors contribute substantial value beyond financial capital through strategic guidance, governance structures, network access, legitimacy, and continuous strategic engagement. Investors help ventures bridge the gap between scientific innovation and commercialization by providing expertise, facilitating stakeholder relationships, and professionalizing organizational processes. The study further demonstrates that investor-venture relationships are dynamic and characterized by knowledge complementarity, but also by tensions concerning autonomy, strategic direction, and growth pace. The thesis contributes to the literature by providing process-level insight into investor value creation, adopting a dual-perspective approach, and contextualizing investor involvement within the life sciences industry. It further proposes an integrated framework illustrating how resource provision, governance involvement, and relational dynamics jointly shape organizational scaling in early-stage life sciences ventures.

Keywords: Venture Capital, Investor Value Creation, Early-Stage Life Sciences Ventures, Organizational Scaling, Investor-Venture Dynamics

Acknowledgement

I would like to express gratitude to my supervisor, Korinzia Toniolo, for invaluable guidance, thoughtful feedback and support throughout the thesis writing process. Also, sincere gratitude to all the interviewees who enabled this study.

Thank you!

Kristina

Table of Contents

1.Introduction	9
1.1 Background	9
1.2 Purpose and Expected Contribution	10
1.3. Research Question	11
1.4. Delimitations	11
2. Theoretical Background	12
2.1 Literature Review	12
2.1.1 Investor Value Creation Beyond Financial Capital	12
2.1.2 Investor-Venture Dynamics in Venture Development	13
2.1.3 Venture Growth and Organizational Scaling	14
2.1.4 The Life Sciences Investment Context	15
2.2 Synthesis & Research Gap	17
2.3 Theoretical Framework	19
2.3.1 Resource Dependence Theory	19
2.3.2 Agency Theory	20
2.3.3 Integrated Conceptual Model	20
3. Methodology	21
3.1 Scientific Research Approach	21
3.1.1 Methodological Fit	21
3.1.2 Research Design	21
3.2 Research Process	22
3.2.1 Preparatory Work	22
3.2.1 Finalizing Research Question	23
3.2.2 Main Study: In-Depth Interviews	23
3.2.3 Data Analysis	24
3.3 Quality of the Study	25
3.3.1 Quality Considerations	25
3.3.2 Ethical Considerations	26

4. Empirical Results	27
4.1 Overview of Empirical Results	27
4.2 Investor Resource Contribution	27
4.2.1 Expertise and Strategic Guidance	27
4.2.2 Network Access	28
4.2.3 Legitimacy	30
4.2.4 Governance Structures	31
4.3 Investor-Venture Dynamics in Venture Scaling	32
4.3.1 Continuous Strategic Engagement	32
4.3.2 Knowledge Complementarity	33
4.4 Tensions Between Investors and Ventures	34
4.5 Life Sciences Investor Context	35
4.5.1 Scientific and Regulatory Uncertainty	35
4.5.2 Long Development Timelines	36
4.5.3 High Financial Capital Dependency and Intensity	37
4.5.4 Bridging the Gap Between Science and Commercialization	38
4.6 Summary of Empirics	40
5. Analysis	43
5.1 Investor Non-Financial Resource Contribution	43
5.1.1 Investor Expertise and Strategic Guidance	43
5.1.2 Networks Access and Legitimacy	44
5.1.3 Governance as Both Resource and Control Mechanism	46
5.2 Investor-Venture Interaction as a Dynamic Process	47
5.3 Tensions Between Investors and Ventures	48
5.3.1 Diverging Objectives: Financial Return Maximization vs. Scientific Focus	48
5.3.2 Autonomy vs. Resource Access	49
5.4 The Life Sciences Context as a Distinctive Environment	49
5.4.1 Multi-Dimensional Uncertainty	49
5.4.2 Long Development Timelines and High Capital Dependency	50
5.4.3 Bridging Science and Commercialization	51

5.5 Summary of Analysis	51
6. Conclusion	53
6.1 Investor Value Creation Beyond Financial Capital	53
6.2 Theoretical Contributions	54
6.3 Adapted Theoretical Framework	55
6.4 Practical Implications	57
6.5 Limitations of the Study	58
6.7 Future Research	58
7. Reference List	60
8. Appendices	67
8.1 Appendix 1: Pre-Study Interview Guide	67
8.1.1 Pre-Study: Venture Representatives	67
8.1.2. Pre-Study: Investment Professionals	68
8.2 Appendix 2: Main Study Interview Guide	69
8.2.1 Main Study: Venture Representatives	69
8.2.2 Main Study: Investment Professionals	70
8.2 Appendix 3: Overview of Interviews	71
8.4 AI Disclosure	73

List of Figures

Figure 1: Illustration of Theoretical Framework	20
Figure 2: Framework derived from this study	57

List of Tables

Table 1: Overview of Research Gaps	17
Table 2: Overview of Empirical Findings	41

List of Abbreviations

Biotech	Biotechnology
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CTO	Chief Technology Officer
IPO	Initial Public Offering
Medtech	Medical Technology
ROI	Return on Investment
R&D	Research & Development
VC	Venture Capital

Definitions

Term	Definition in this study
Angel investors	Private individuals who invest their own capital in early-stage ventures (Menon & James, 2022).
Clinical trials	Research processes including four phases testing safety and effectiveness of medical interventions before market approval (Kandi & Vadakedath, 2023).
Early-stage ventures	Firms that are in initial phases of development, limited to those with less than 10 years of history (Marion & Meyer, 2011).
External investors	Actors providing capital to firms from outside the founding team (Grundy & Verwijmeren, 2020).
Life sciences	An industry covering biotechnology, pharmaceuticals, and medical technologies (Ozyigit, 2020).
Value creation beyond financials	Includes strategic guidance, operational support, and network access, which enhances firm innovation and growth potential (Fometescu & Hategan, 2024).
Organizational scaling process	The process through which firms evolve structures, processes, and capabilities to improve performance and adapt to changing environments (Osondu & Prokhorenko, 2017).
Venture capital	A form of financing provided to high-growth, high-risk startups, where investors supply both capital and strategic support such as mentorship and governance involvement (Johnsen & Lenhard, 2025).

1.Introduction

1.1 Background

External investors have become central actors in enabling innovation, organizational development, and growth of new ventures (Mina et al. 2013). Early-stage ventures often rely extensively on a broader ecosystem of investors, including venture capital (VC) funds, angel investors, and specialized sector investors (Kato, 2025; Mina et al. 2013). Beyond providing financial capital, these investors can engage in strategy, governance, and organizational development (Amornsiripanitch et al., 2019). More specifically, investors can contribute strategic guidance, industry knowledge, and board positions that shape growth trajectories of ventures (ibid). For instance, investors may support organizational structuring (Hellmann & Puri, 2000), and IPOs in later stages (Barry et al., 1990). Thus, the combination of not only financial support, but also active engagement, positions investors as a strategic partner influencing the organizational development of ventures (Amornsiripanitch et al., 2019; Hellmann & Puri, 2000).

Investing in early-stage firms is highly uncertain particularly due to financial fragility, market ambiguity, high R&D costs and regulatory risks (Amit et al., 1990; Hall & Lerner, 2010). The life sciences sector represents one of the most strategically yet institutionally complex sectors (Kang et al., 2024). Ventures in the life sciences sector operate at the intersection of scientific discovery, clinical trials, regulatory approval processes, and reimbursement negotiations - processes that are time-consuming, costly, and uncertain (Asunmonu, 2025). For example, drug development alone can take 10-15 years from initial discovery to regulatory approval, with total costs often exceeding \$2-2.6 bn for a single drug (ibid). Moreover, the process is inherently uncertain: only about 10% of drug candidates entering clinical trials ultimately receive approval, meaning that most discoveries do not lead to successful outcomes (ibid).

The life sciences sector's complexity amplifies the need for strategic guidance for life sciences ventures, especially for early-and mid-stage ventures navigating capital-intensive phases such as clinical development, regulatory approval, and commercialization, where scientific uncertainty, long timelines, and evolving market conditions heighten decision-making challenges (Hall & Lerner, 2010; Asunmonu, 2025). Therefore, ventures operating in the life sciences context can benefit from investors who combine capital investment with active

engagement in strategic planning, board governance, and industry-specific expertise to accelerate growth (Hellmann & Puri, 2000; Amornsiripanitch et al., 2019).

Although academic literature on VC and startup financing is extensive, it has predominantly focused on financial outcomes such as valuation growth, fund returns, and exit performance (e.g., Gompers et al., 2016; Yimfor & Garfinkel, 2023). Comparatively less attention has been given to the organizational processes and governance mechanisms through which investors influence the growth trajectories of companies. Moreover, existing research within organizational processes and governance mechanisms has largely relied on single-perspective approaches, examining either investor-side mechanisms - such as decision-making, screening, and governance (e.g., Baum & Silverman, 2004; Gompers et al., 2016) - or venture-side outcomes, including innovation and firm performance (e.g., Sapienza, 1992; Moritz et al., 2021). Hence, there is limited understanding of the dyadic interaction between investors and ventures, particularly on how both actors perceive and co-shape value creation processes over time. This limitation is especially salient in the life sciences sector, where high regulatory complexity, scientific uncertainty, and long development timelines intensify interdependence between investors and ventures, and make coordinated interactions critical for successful venture development (Asunmonu, 2025).

A deeper understanding of how external investors contribute to the development of life sciences ventures beyond financial capital can provide insights into how external financing actors function as drivers for venture innovation and growth. By examining the perspectives of both investors and ventures, this thesis aims to broaden the understanding of how investors actively influence organizational development processes beyond financial capital in early-stage life sciences ventures.

1.2 Purpose and Expected Contribution

The purpose of this thesis is to develop a deeper understanding of how investors (VCs and angel investors) contribute to and influence the organizational scaling process of early-stage life sciences ventures. This is particularly interesting in the life sciences sector, where companies operate in highly regulated, knowledge-intensive environments (Asunmonu, 2025). By examining perspectives from both sides of the investment relationship, this thesis aims to

investigate how investors and ventures perceive the investor's role in shaping strategy, governance, organizational structure, and growth trajectories.

The expected contribution is twofold. First, the study contributes to the VC and entrepreneurial finance literature by shifting the focus from solely financial outcomes to the “*how*” of value creation processes in ventures; the organizational mechanisms through which investors create value beyond financial capital. Second, it provides sector-specific insight into the life sciences industry by illustrating how investor involvement interacts with regulatory constraints, scientific uncertainty, and long commercialization timelines.

1.3. Research Question

Based on the identified research gap, this study aims to contribute both theoretical and practical insights into the investor value creation field. By adopting a dyadic perspective in value creation, this study aims to investigate the value creation beyond financial capital by external investors in the context of early-stage life sciences ventures. In line with these objectives, this thesis addresses the following research question:

- *How do investors create value beyond financial capital throughout the scaling process of early-stage life sciences ventures?*

1.4. Delimitations

To answer the research question, the author applies certain delimitations. First, the study focuses specifically on investors and ventures active in the life sciences sector. As a result, the findings may not be directly generalizable to other sectors with different conditions. Second, the empirical analysis is based on a limited sample of interview participants, which means that the findings represent in-depth perspectives rather than a statistically representative overview of a broader investor landscape. Third, the research primarily reflects the perspectives of the selected investors and venture representatives participating in the interviews. While these perspectives provide valuable insights into investor-venture relationships, they may not fully capture the diversity of experiences across the broader life sciences investment ecosystem.

2. Theoretical Background

2.1 Literature Review

2.1.1 Investor Value Creation Beyond Financial Capital

External investors are increasingly viewed not solely as capital providers, but as active partners in the development of entrepreneurial ventures (Hellmann & Puri, 2000; Amornsiripanitch et al., 2019). They can contribute a wide range of non-financial resources that can significantly influence venture development and growth, such as active ownership, board participation and governance roles, and network access (ibid).

A widely discussed non-financial value creator among external investors is active ownership, where investors contribute to strategic decision-making and monitoring of the venture (Amornsiripanitch et al., 2019). This means that investors frequently assist founders in refining business models, identifying growth opportunities and prioritizing strategic initiatives (ibid). This is often expressed through board participation and governance roles, supporting the professionalization of ventures (Hellmann & Puri, 2000).

Furthermore, external investors can also add value through strategic advisory roles. By drawing on their industry knowledge, they help founders refine business models and prioritize strategic initiatives (Hellmann & Puri, 2000). For example, Hellmann & Puri (2000) show that VCs contribute to the professionalization of startups by shaping management teams and influencing strategic direction. Similarly, Gorman & Sahlman (1989) document how VCs provide hands-on support in areas such as recruiting key personnel and formulating business strategies.

External investors further contribute human capital. Many external investors bring experience as industry specialists, executives or similar positions. Patzelt et al. (2009) emphasize that entrepreneurial success in the life sciences sectors often depends on the access to sector expertise, regulatory knowledge and strong networks. Thus, investors' experiences allow them to guide founders and the executive team of early-stage ventures (Hellmann & Puri, 2000).

In addition, external investors provide network access by connecting early-stage ventures with potential partners, customers, industry experts and future investors (Hsu, 2006). Also, established investors can strengthen credibility to external stakeholders (Stuart et al., 1999).

Although prior literature increasingly recognizes that investors contribute value beyond financial capital, much of the research remains descriptive. Existing studies primarily emphasize strategic guidance, governance support, and network access, while giving less attention to how investor involvement may also constrain founder autonomy, reshape strategic priorities, and generate organizational tensions. Consequently, there remains limited understanding of how non-financial investor contributions are continuously negotiated, perceived from both parties, and operationalized within organizational development processes.

2.1.2 Investor-Venture Dynamics in Venture Development

The relationship between investors and ventures represents a central element in the development of ventures (Amornsiripanitch et al., 2019). Early-stage ventures often face significant uncertainty and resource constraints, which can create tensions between investors' expectations and the operational priorities (Sapienza & Gupta, 1994). While a great cooperation between investors and the venture can be beneficial for both parties, the relationship may involve complex power dynamics (Kaplan & Strömberg, 2003).

Investor-venture relationships are often characterized by asymmetric power dynamics and differing strategic priorities (Sapienza & Gupta, 1994). Investors typically prioritize scalability, high financial returns, and exit opportunities, whereas the venture may emphasize product development, scientific progress, and long-term visionary goals (ibid). These differing orientations can generate tension regarding strategic direction, pace of growth, and resource allocation (Sapienza, 1996). At the same time, the distribution of control and influence is not static but negotiated over time through ongoing interaction and performance outcomes, and consequently, conflicts may arise regarding strategic priorities and organizational direction (ibid).

In addition to potential tensions, investor-venture relationships are also inherently collaborative. Effective partnerships often involve joint decision-making on strategic priorities, executing hiring, and commercialization pathways (Hellmann & Puri, 2002). In this context, investors may function not only as monitors but also as advisors and knowledge contributors (Sapienza & Gupta, 1994; Gorman & Sahlman, 1989). This dual role highlights the importance

of relational governance, where communication, trust, and shared objectives complement formal control mechanisms (ibid).

The nature of investor-venture dynamics can vary depending on several contextual factors such as the venture's stage of development, the founder's experience, and the investor's domain expertise (Gompers, 1995). Early-stage ventures typically require more frequent involvement from investors due to limited managerial experience and uncertainty in the business model (ibid).

Existing literature tends to focus either on governance mechanisms or relational collaboration separately, overlooking how cooperation and conflict may coexist throughout venture development. As a result, there remains insufficient understanding of how investor influence is continuously negotiated and reshaped throughout the scaling process.

2.1.3 Venture Growth and Organizational Scaling

Organizational scaling refers to the process through which ventures transition from small, founder-driven entities to more structured and formalized organizations (Hellmann & Puri, 2002). The development of early-stage ventures is a complex and dynamic process that extends beyond simply increasing in size, revenue, or market share (Teece et al., 1997). Venture growth involves continuous evolution of organizational structures, capabilities, and strategic orientations in response to internal challenges and external environmental conditions (ibid).

In early stages, ventures typically operate with informal processes, unstructured decision-making, and fluid role definitions (Greiner, 1998). As firms grow, increasing complexity necessitates the introduction of formal governance structures, clearer division of responsibilities, and structured processes, thus, scaling involves a shift from flexibility and experimentation toward coordination and efficiency (ibid). This transition often includes the establishment of management teams, implementation of reporting systems, and development of internal processes that enable consistent execution (Hellmann & Puri, 2002).

Furthermore, for many high-growth ventures, expansion beyond domestic markets represents a critical component of scaling (Oviatt & McDougall, 1994). Internationalization can provide access to a larger customer bases, additional resources, and new growth opportunities.

However, Oviatt & McDougall (1994) also emphasize that entering new markets introduces significant complexity, including regulatory differences, cultural variations, and increased operational demands.

As ventures mature, attention increasingly shifts toward potential exit pathways, such as IPOs and M&As (Gompers & Lerner, 2004). These events represent critical milestones, particularly for investors, as they provide opportunities to realize returns on investment (Cumming & Johan, 2013). IPO preparation involves transitioning to a higher level of organizational transparency, governance, and accountability (Gompers & Lerner, 2004). Firms must then implement formal reporting systems, strengthen management teams, and comply with regulatory requirements associated with public markets (Pagano et al., 1998).

Early-stage ventures rarely follow a fixed strategic growth path. Instead, strategy tends to evolve over time through iterative processes shaped by learning, experimentation, and interaction with external stakeholders (Mintzberg & Waters, 1985). Ventures must continuously adapt their strategic direction to meet the market requirements, including redefining target markets, adjusting value propositions, and reallocating resources (Brown & Eisenhardt, 1997).

Although prior research on organizational scaling highlights the transition from informal to more formalized organizational structures, much of the literature focuses primarily on internal growth processes while underemphasizing the role of external actors such as investors as part of the organizational development process. There remains limited understanding of how scaling unfolds in contexts characterized by regulatory complexity, scientific uncertainty, and prolonged capital dependency.

2.1.4 The Life Sciences Investment Context

The life sciences industry presents complex challenges for investing and venture scaling. It is characterized by extreme uncertainty, long time horizons, and strong institutional embeddedness, which shape both the nature of entrepreneurial risk and the role of investors (Hall & Lerner, 2010). Ventures operating in the life sciences industry face high levels of uncertainty compared to many other sectors (Pisano, 2006). It is thus necessary that investors possess specialized knowledge related to scientific development, regulatory pathways, and healthcare market dynamics to navigate effectively (Lerner, 1994; Dimov & Shepherd, 2005).

Firms operating in this industry often require sustained financial capital investment over extended periods before reaching commercialization (Hall & Lerner, 2010; Asunmonu, 2025). Unlike ventures in other sectors that can iterate rapidly, life sciences ventures often require a decade of R&D before commercialization, driven by sequential stages such as pre-clinical research, clinical trials, and regulatory approval (Miozzo & DiVito, 2016). Due to high R&D costs and long development cycles, ventures require continuous external funding across multiple rounds, often before any revenue generation (Patzelt et al., 2009). This creates a delayed validation problem, where market viability cannot be fully assessed until very late in the process. Consequently, investment decisions for these early-stage ventures must be made under prolonged uncertainty, and capital is committed long before revenues - or even proof of concept - are realized (Pisano, 2006; Hall & Lerner, 2010).

Moreover, the sector is defined by deep technological and scientific uncertainty, rather than merely market uncertainty (Pisano, 2006). Outcomes are often dependent on biological processes that are inherently unpredictable, reflected in high failure rates (ibid). Consequently, investors must evaluate not only commercial potential but also scientific validity, requiring highly specialized expertise (Lerner, 1994).

Furthermore, life sciences ventures operate within dense regulatory and institutional frameworks. Regulatory bodies, reimbursement systems, and public healthcare actors play a central role in determining whether and how innovations reach the market (Pisano, 2006). This means that commercialization is not solely a function of product quality or market demand, but also of regulatory approval, pricing negotiations, and alignment with healthcare systems (Wehkamp & Naegler, 2017). This introduces additional layers of risk, dependency, and complexity that are milder in less regulated industries (ibid).

Lastly, the life sciences sector is characterized by a strong division between scientific and commercial capabilities (Clayton & Feldman, 2021). Many life sciences innovations originate from pure academic environments, where founders possess deep research expertise but limited experience in commercialization, market access, or organizational scaling (ibid). This creates a structural gap between invention and innovation, where translating scientific discoveries into viable products requires additional capabilities (Haeussler & Assmus, 2020). As highlighted by

Patzelt et al. (2009), external investors often play a critical role in bridging this gap by providing sector-specific expertise, regulatory knowledge, and access to relevant stakeholders.

Taken together, given these conditions, life sciences investors may have a particularly important role in supporting and shaping the strategic direction and organizational development of life sciences ventures (Patzelt et al., 2009). The life sciences sector is an interesting investment context because uncertainty is multi-dimensional (e.g., scientific, regulatory, market), and value creation is non-linear and milestone-driven rather than market-feedback driven (Pisano, 2006).

Existing literature on the life sciences investor context provides extensive insight into the sector's high uncertainty, regulatory complexity, and long development timelines. However, prior research mainly focuses on structural industry characteristics and investment risks rather than how these conditions shape organizational processes and investor-venture interactions over time. Consequently, there remains limited understanding of how investors and ventures jointly manage the tensions associated with long-term organizational scaling in the life sciences sector.

2.2 Synthesis & Research Gap

After a comprehensive review of existing relevant literature, it can be concluded that several limitations remain. Three empirical research gaps have been identified, which this study aims to bridge. An overview of the identified gaps alongside supporting existing research is shown in Table 1.

Table 1: Overview of Research Gaps

Research Gaps	Supporting Existing Research
Research Gap 1: Limited process-level insight	Gompers et al. (2016); Kaplan & Strömberg (2003); Amornsiripanitch et al. (2019); Kaplan & Lerner (2016); Yimfor & Garfinkel (2023); Gorman & Sahlman (1989); Hellmann & Puri (2000)
Research Gap 2: Insufficient life sciences specificity on an organizational level	Hall & Lerner (2010); Pisano (2006); Miozzo & DiVito (2016); Patzelt et al. (2009)
Research Gap 3: Missing dual-perspective analysis	Moritz et al. (2021); Hsu (2007); Sapienza et al. (1996)

First, existing research within VC and entrepreneurial finance primarily focuses on financial outcomes such as exit valuation, fund performance, and ROI (e.g., Gompers et al., 2016; Kaplan & Strömberg, 2003; Yimfor & Garfinkel, 2023). In parallel, strategic management and entrepreneurship literature acknowledges that investors contribute beyond capital through governance involvement, strategic guidance, and network access (e.g., Hellmann & Puri, 2002; Gorman & Sahlman, 1989; Hsu, 2006; Patzelt, 2009; Sapienza, 1992). However, the existing literature remains largely outcome-oriented and conceptually descriptive, with insufficient attention to the underlying processes through which these investors' contributions translate into organizational change and venture development. There is a lack of process-level insight into how investors shape and contribute to scaling of ventures over time. Thus, the mechanisms linking investor involvement to value creation within the organization remain underexplored.

Second, there is limited sector-specific empirical understanding of investor influence on an organizational level in the highly regulated and uncertain life sciences industry. While there is research explaining the characteristics of the life sciences investment landscape (e.g., Hall & Lerner, 2010; Pisano, 2006; Miozzo & DiVito, 2016; Patzelt et al., 2009), few studies examine how investors interact with life sciences ventures on an organizational level throughout the scaling process.

Third, although prior research has examined venture capital relationships from both investor and venture perspectives, much of the literature still tends to privilege one side of the relationship in isolation (e.g., Moritz et al., 2021; Sapienza et al., 1996; Hsu, 2007). Some studies do explore entrepreneur-investor relationships more directly, but they do often not fully capture how both parties jointly perceive and negotiate investor contributions over time. Thus, the interaction between ventures and investors in early-stage life sciences ventures - and the ways in which both actors perceive investor contributions throughout the organizational scaling process - remains insufficiently explored.

These identified research gaps highlight the need for understanding how investors create value beyond financial capital within early-stage life sciences ventures throughout the scaling process, while incorporating perspectives from both investors and ventures.

2.3 Theoretical Framework

The reviewed literature highlights that investor involvement is multifaceted, encompassing both resource contributions (e.g., expertise, networks, legitimacy) and governance-related influence (e.g., control mechanisms, strategic alignment, decision-making structure). At the same time, the identified research gaps points to a limited understanding of how these contributions unfold on an organizational level in practice, particularly within the complex and uncertain context of the life sciences sector and investigating the perspective of investors and ventures simultaneously.

To address this, this study adopts a theoretical framework that combines two theoretical perspectives: Resource Dependence Theory (Pfeffer & Salancik, 1978) and Agency Theory (Jensen & Meckling, 1976). Rather than introducing these theories as abstract lenses, they are selected because they directly correspond to the core dimensions of the phenomenon under investigation: (1) investors as providers of critical resources, and (2) investors as governance actors shaping organizational development processes.

Collectively, these two aspects - resource provision and governance involvement - are consistently highlighted in the literature review in various ways but are rarely integrated simultaneously into a coherent theoretical framework. Therefore, combining Resource Dependence Theory and Agency Theory allows this study to capture both sides of the investor influence in a way that is grounded in empirical theories.

2.3.1 Resource Dependence Theory

Developed by Pfeffer & Salancik in 1978, the Resource Dependence Theory provides a useful lens for understanding why investor contribution matters for ventures. The theory emphasizes that organizations are not self-sufficient and rely on external actors for critical resources such as networks, financial capital, and knowledge. In the context of this study, early-stage life sciences ventures are particularly dependent on external resources due to high R&D intensity, complex regulatory environments, and high uncertainty. Therefore, investors play a central role as resource providers through industry expertise, network access, and legitimacy. Resource Dependence Theory thus explains how investors contribute to venture development (Pfeffer & Salancik, 1978).

2.3.2 Agency Theory

To address how investor involvement shapes decision-making and organizational development, the Agency Theory, developed by Jensen & Meckling in 1976, is applied. The Agency Theory conceptualizes the relationship between principals (investors) and agents (ventures), highlighting challenges such as information asymmetry, misaligned incentives, and uncertainty regarding performance. This is known as the “principal-agent” problem and arises due to conflicts of interest and differing priorities between agents and principals. In this study, the Agency Theory is used to understand the relationship between investors and venture representatives throughout organizational scaling for early-stage life sciences ventures.

2.3.3 Integrated Conceptual Model

While both theories offer valuable insights, each capture only a part of the phenomenon. Resource Dependence Theory emphasized access to external resources but pays less attention to organizational processes and investor-venture interaction. In contrast, Agency Theory focuses on investor-venture interaction but underplays the role of resource contributions. This motivates the development of a new integrative framework. Therefore, this study aims to integrate these theories into a unified one in which investor influence operates while covering process-level insights, dual perspectives of investors and ventures simultaneously, and in the context of life sciences. This integrated framework enables the study to move beyond static explanations and instead examine how these mechanisms interact over time, addressing the identified research gaps related to process-level understanding, dual-perspective analysis, and in the context of life sciences.

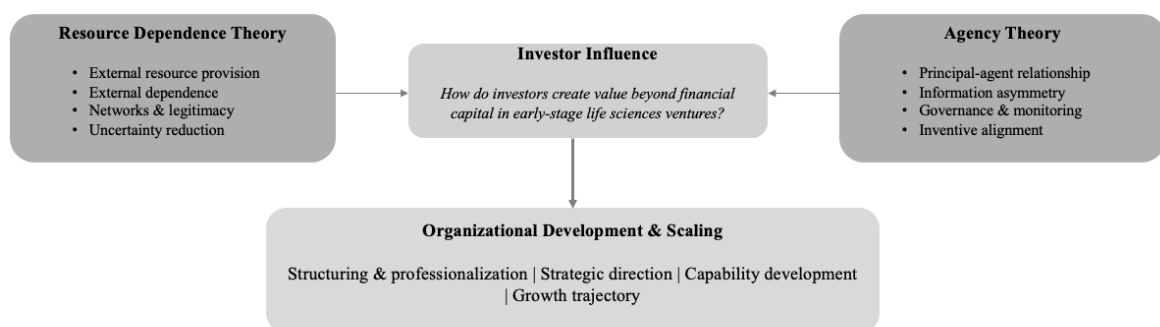


Figure 1: Illustration of Theoretical Framework. Adapted from Pfeffer & Salancik (1978) and Jensen & Meckling (1976)

3. Methodology

3.1 Scientific Research Approach

3.1.1 Methodological Fit

This study aims to deepen the understanding of how investors shape strategic direction, governance structure, and organizational development in scaling of early-stage life sciences ventures. Addressing the identified research gaps in Table 1, this requires an approach that captures the complex interactions between investors and ventures, and the mechanisms through which value is created beyond financial capital. Given the nature of the research, a qualitative research approach is most suitable (Edmondson & McManus, 2007). Furthermore, qualitative methods are suitable for research on phenomena where theory is nascent, as it enables exploration of underlying mechanisms and new conceptual insights (ibid). Similarly, Abebe et al. (2020), emphasize the need for more qualitative studies to better comprehend the complexities associated with growth in early-stage ventures, further supporting the appropriateness of the chosen research approach. The research aims to discover unexpected insights and tensions rather than attempt to test a pre-set hypotheses.

The study is positioned within an interpretivist epistemology (Bell et al., 2022), where the reality is understood as socially constructed through interactions between actors. The interaction between investors and ventures is shaped by expectations, power dynamics, governance practices, and regulatory constraints - factors that cannot be fully captured through purely quantitative measures.

3.1.2 Research Design

The study follows an abductive research approach, which is characterized by an iterative process between empirical observations and existing theory (Timmermans & Tavory, 2012). The abductive approach allows for continuous interaction between data collection and theoretical interpretation (ibid). In this study, initial empirics insights from interviews with investors and venture representatives informed the identification of key themes, which were then interpreted and refined through relevant theoretical frameworks. These theoretical perspectives, in turn, guided further data analysis and helped to structure emerging patterns.

This approach was particularly suitable given the exploratory nature of the research and the identified gaps in understanding the mechanisms through which investors create value beyond financial capital. As existing literature provides limited explanations of how these mechanisms unfold in practice, an abductive design enabled the study to both draw on established theory and remain open to new, empirically grounded insights. Thus, the iterative movement between data and theory allowed for the development of a more nuanced understanding of investor-venture dynamics.

The data collection consisted of qualitative in-depth interviews with two key actor groups: investors (VCs and angel) and representatives from life sciences ventures. In total, 3 pre-study interviews and 15 main-study interviews were conducted, providing insights into how investor involvement unfolds in practice. A detailed description of the interview sample and selection criteria is provided in Section 3.2.2.1 and Appendix 8.3.

3.2 Research Process

The research process developed through four main phases: preparatory work, refinement of the research question, main study, and data analysis. In line with the abductive research approach, the process was iterative rather than strictly linear, as suggested by Daft (1983). Insights emerging during data collection and preliminary analysis continuously informed the refinement of the research focus and theoretical framework. Such iterative processes are suitable in qualitative studies, where theoretical insights emerge gradually as researchers engage with the empirical material (Bell et al., 2022; Arsel, 2017).

3.2.1 Preparatory Work

The research approach initially involved an exploratory phase aimed at assessing empirical relevance of the chosen topic and refining the overall study direction (Makri & Neely, 2021). During this phase, the author conducted preparatory interviews with industry actors in the life sciences investment ecosystem. These preliminary discussions served several purposes. First, they facilitated confirming the relevance of the research topic by highlighting the importance of investor involvement beyond financial capital. Second, they provided insights into how investor-venture dynamics function in practice, which informed the development of the

interview guide used in the main study. Overall, this preparatory phase confirmed the empirical and theoretical relevance of focusing on value creation beyond financial capital mechanisms and organizational development in early-stage life sciences ventures.

3.2.1 Finalizing Research Question

Following the preparatory phase, the research focus was gradually narrowed. As the preparatory work progressed, it became clear that the primary research gap concerned the organizational mechanisms through which investors influence growth. The preparatory interviews also revealed that investors and ventures often interpret investor involvement differently. This observation motivated the inclusion of both perspectives in the final design. Furthermore, the research question was refined to focus specifically on the mechanisms through which investors contribute to venture development beyond financial capital. The research question was thus reformulated to: *How do investors create value beyond financial capital throughout the scaling process of early-stage life sciences ventures?*

3.2.2 Main Study: In-Depth Interviews

3.2.2.1 Interview Sample

The main empirical phase consisted of in-depth interviews with investors and representatives from various ventures operating in the life sciences sector. The purpose of this was to capture in-depth insights of how investor involvement unfolds in practice within early-stage life sciences ventures. After approximately 12 interviews, consistent patterns were detected in the collected data, few new relevant insights arose from further data collection, and sufficient variation in the dataset could still be demonstrated (Glaser & Strauss, 1967).

Specifically, the interview sample consisted of 8 investors including VC investment professionals and angel investors, and 7 professionals of early-stage life sciences companies. While the study aimed for balanced representation across both groups, the final distribution reflects both access to qualified respondents and the point at which theoretical saturation was reached within each group.

The interview sample was targeted to ensure all interviewees had direct experience with investor-venture collaboration in early-stage life sciences ventures. To capture variation in

experiences and perspectives, the sample included variation across several dimensions: (1) company development stage, e.g., pre-clinical, clinical, and commercialization phase, (2) type of investor: VC vs. private investor, and (3) degree of investor involvement: active board participation vs. passive ownership. This was done to capture different stages of the investor value creation process. Dual perspectives of both investors and ventures enabled comparison of perspectives and strengthened analytical triangulation.

3.2.2.2 Interview Design

Semi-structured interviews were chosen to allow for flexibility while ensuring alignment with the research categories (Kvale & Brinkmann, 2014). The interviews contained open-ended questions around key research themes such as strategic and operational contribution, investor-venture dynamics, and value creation aspects. Appendix 8.2 provides a detailed overview. The interview guide was developed to ensure consistency across interviews while allowing respondents to elaborate on issues they considered important. Parallel but slightly adjusted versions of the interview guide were developed for investors and venture representatives to ensure comparability while reflecting the different roles.

The interviews lasted between 30-60 minutes and were conducted online using Microsoft Teams. All interviews were transcribed by AI in Microsoft Teams. To mitigate potential bias, respondents were assured anonymity and informed that the study aimed to capture their experiences rather than evaluating performance.

3.2.3 Data Analysis

Following a structured iterative approach inspired by grounded theory (Gioia et al., 2013), this allows for exploration and development of concepts while remaining grounded in the informants' own experiences. In this study, the analysis proceeded through several stages. First, the interview transcripts were reviewed and coded to identify first-order concepts and overall patterns. Second, these concepts were grouped into second-order themes, reflecting broader analytical categories identified by the author. Lastly, these identified themes were aggregated into higher-level dimensions that capture key themes of investor value creation in scaling of early-stage life sciences ventures. In parallel, thematic analysis was used to identify recurring patterns across interviews (Bell et al., 2022). The combination of the two approaches enabled inductive concept development and pattern identification.

3.3 Quality of the Study

3.3.1 Quality Considerations

The quality and trustworthiness of this qualitative study is assessed using the criteria of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985).

3.3.1.1 Credibility

Credibility concerns the extent to which the findings represent the perspectives of the participants (Lincoln & Guba, 1985). In this study, credibility was strengthened through the inclusion of both the investor and venture perspectives simultaneously. Comparing these two viewpoints, this approach validates emerging patterns and provided a more nuanced and comprehensive understanding of how investors create value beyond financial capital. Additionally, systematic analysis of the interview material ensured that interpretations remained grounded in the empirical results (Kvale & Brinkmann, 2014).

3.3.1.2 Transferability

Transferability refers to the extent to which the findings may be applicable in other settings (Lincoln & Guba, 1985). In this study, transferability was supported by detailed descriptions of the research context, participants, and the life sciences investment ecosystem. This enables the readers to assess the potential relevance of the findings in other contexts (Bell et al., 2022).

3.3.1.3 Dependability

Dependability relates to the transparency of the research process (Lincoln & Guba, 1985). In this study, dependability was ensured through systematic documentation of interview guides, both preparatory and main study, coding procedures, and step-by-step data analysis. This documentation enabled the process to be evaluated in a consistent manner (Bell et al., 2022).

3.3.1.4 Confirmability

Lastly, confirmability refers to the extent to which the findings are derived from the data rather than the researcher's personal biases (Lincoln & Guba, 1985). In this study, confirmability was strengthened by grounding interpretations in the interview data and by maintaining

transparency throughout the analytical process to reduce the risk of potential bias. This approach facilitated reducing potential subjectivity and ensured the interview participants' perspectives reflect the findings (Bell et al., 2022).

3.3.2 Ethical Considerations

All participating interviewees and companies were guaranteed anonymity. No identifiable information is disclosed in the thesis. Interview transcripts by AI were securely stored in accordance with GDPR regulations. Given the potential power asymmetry between investors and ventures, special attention was drawn to ensure that both parties could speak freely without risk of reputational consequences. Hence, ethical considerations were central throughout the research process. The research adhered to key principles including informed consent, avoidance of harm, confidentiality, data protection, and transparency (Bell et al., 2022).

4. Empirical Results

4.1 Overview of Empirical Results

The empirical findings show that investors play a significantly broader role than merely providing financial capital in organizational scaling of early-stage life sciences ventures. Across the in-depth interviews with both investors and venture representatives, it becomes evident that investor involvement in the life sciences sector is multifaceted and embedded in the development process of ventures in several ways. Furthermore, four overarching themes emerged across the data collection. These include (1) investor resource contribution, (2) investor-venture dynamics in venture development, (3) tensions between investors and ventures, and (4) life sciences-specific characteristics. Collectively, these dimensions illustrate how investors' contributions unfold in practical terms and how they are perceived from both sides of the investor-venture relationship.

4.2 Investor Resource Contribution

4.2.1 Expertise and Strategic Guidance

A recurring theme across interviews is the importance of investor expertise in shaping the development of ventures. Founders often enter the market with strong belief in their idea, which is typically grounded in scientific research. However, as ventures encounter practical constraints, another type of expertise, around commercialization, is required to meet the market requirements.

“I meet many companies that are in different stages, and by meeting them I learn to understand where they are in their development and what challenges they are facing. That knowledge is extremely valuable to pass on to other companies. Especially for first-time entrepreneurs [...] when they meet reality and the actual needs of the market or of investors, the product or service the company works on often becomes something different than what they initially imagined.” - J

This observation suggests that venture development is non-linear, with significant changes occurring as founders being exposed to market realities. Coming from a purely scientific background with a team consisting of such expertise, several interviewees - both venture representatives and investors - describe it challenging with the business expertise inhouse.

Therefore, several respondents describe the need to seek help from external parties, where investors can be a strategic contributor to this. Investors can contribute to discussions that challenge assumptions and broaden perspectives. For instance, these can include identifying customer segments, go-to-market strategies, and navigating the regulatory requirements.

“After three or four years, the company is often facing a backlash as the market realities are not equivalent to the success in scientific research processes. Researchers are often in their own bubble. They need to realize what they don’t know and have.” - J

“I’ve had strategic influence when it comes to the financial side and what is important to communicate to new investors. Researchers are usually in their own world, and I haven’t met a single researcher who isn’t positive about their own product. So, it’s often about helping them realize what they don’t have in their company and which competencies they are missing.” - F

Furthermore, considering the high-risk high-reward of investing in this sector, several interviewed investors highlight that it is common to invest in several life sciences ventures simultaneously and wish for at least one or two to succeed. Thus, investors in this industry are typically perceived as particularly valuable assets, as they can provide insights into strategic and operational challenges due to prior experience. They understand regulatory processes and clinical development pathways critical for success through prior experience in the sector.

“When making investments, you typically collaborate with others. You compare views, analyze competitors and alternative methods, and there is a clear exchange of knowledge. In the life sciences sector, it is common in my surrounding that you create a portfolio of companies you invest in due to the high risk in this sector.” - D

This highlights how investors contribute by prior sector experience and strategic guidance that may otherwise be underdeveloped within the organization.

4.2.2 Network Access

Another recurring central theme is the importance of network access. Success in the life sciences sector appears to depend heavily on the ability to connect with relevant stakeholders,

including healthcare providers, industry experts, regulatory partners, and future investors with strategic experience and expertise. Investors and ecosystem actors are frequently described as facilitators of network access.

“I rely heavily on networks; everything from other CEOs to companies I meet in business development contexts. I really believe in bringing in as many external perspectives as possible to make the right internal decisions.” - Q

“We function as a ‘one-stop shop’ for commercialization, working in early stages to support researchers and startups by validating business potential and helping to form companies. At the same time, we connect these ventures with larger companies, researchers, and other actors within the ecosystem, essentially acting as a network organization that brings together small firms, established industry players, and academia. This is often very valuable, especially in this complex sector.” - I

This highlights the importance of strong network access to facilitate interactions between different stakeholders. Furthermore, it is emphasized across several interviewees that network access is particularly important for early-stage ventures, which often lack established network and expertise across several business areas, beyond purely scientific. Through investor involvement, ventures gain access to broader ecosystems, which can accelerate both growth and learning.

“Investors contribute not only with their own competence and experience, but also with access to networks, and I rely heavily on these external perspectives continuously to make the right internal decisions.” - Q

This highlights how investor involvement extends beyond the firm’s internal processes and becomes embedded in a broader ecosystem. Investors facilitate access to relevant actors, which is particularly important in life sciences where commercialization depends on collaboration with healthcare systems, regulators, and partners. This illustrates the barriers faced by early-stage ventures and reinforce the importance of networks.

4.2.3 Legitimacy

In addition to providing expertise, strategic guidance and network access, investors contribute significantly to the perceived legitimacy of a venture. Several respondents highlight that the presence of well-known and reputable investors enhances a company's credibility in the eyes of external stakeholders, including potential partners, customers, and future investors. This added credibility is particularly valuable for early-stage ventures that may lack a proven track record.

“Having credible investors, especially for early-stage investments, form a quality stamp.” - O

This statement suggests that investors work as certifiers of quality. Their backing signals that the venture has undergone a certain level of due diligence and has been deemed promising by experienced actors. In this sense, investors act as intermediaries of trust, reducing uncertainty for others who may not have the same level of insight into the venture's potential.

“If you want to succeed with investors, you need to build a plan that creates confidence among qualified investors. They need to feel that the organization has strong understanding and expertise.” - G

“If you go to a recognized investor, ten times more investors will follow.” - I

Legitimacy seems to play a critical role across several dimensions of venture development. It can facilitate access to additional funding as new investors are more likely to engage with ventures that already have reputable backers. It also supports the formation of strategic partnerships, as established organizations may prefer to collaborate with ventures that are perceived as credible and professionally supported.

“We work with key opinion leaders, we work with the market and make sure people know we exist. You need someone who speaks on your behalf and showcases what you do, and then it creates a ripple effect.” - P

This illustrates the cumulative nature of legitimacy. The involvement of a recognized investor can trigger a cascading effect, attracting further attention and investors. In this way, investors

do not merely provide capital but also serve as powerful signals that reduce information asymmetry and influence the perceptions and behaviours of others.

4.2.4 Governance Structures

The empirical results show that ventures undergo a transition from informal to more structured ways of working when growing. In early stages of a venture, decision-making is often around founders and characterized by iteration on the way forward. However, as ventures scale, the need for more formal structures becomes more pronounced.

“Defining the strategy with clear direction is central for enabling scaling. This includes the introduction of boards, clearer roles and responsibilities, and more systematic approaches to planning and execution.” - G

“The four largest owners are involved and sit on the nomination committee where they can influence the composition of the board and determine which competencies are needed to guide us and ensure that the board makes the right strategic decisions.” - H

Investors play a key role in introducing governance practice that may not have been present in early stages. This involves establishing routines for reporting, monitoring progress, and making strategic decisions.

“You follow companies over time and systematically evaluate what they said they would do vs. what they have done. If they meet their milestones and deliver on what they promised, you gain much more confidence, and that becomes an important basis for further investment decisions. It is thus easier to invest in companies with a great structure for reporting where they keep track of their progress.” - N

An aspect of increased structure is milestone-based development. Progress closely ties to specific milestones in the life sciences sector. For instance, clinical trial phases and regulatory approvals. Investors often link funding to achievement of predefined milestones, creating a framework for evaluating progress and managing risk. This reflects the nature of this sector, where uncertainty is high and outcomes are difficult to predict. Structuring funding and development around milestones makes both investors and ventures able to navigate uncertainty in a more systematic way.

4.3 Investor-Venture Dynamics in Venture Scaling

4.3.1 Continuous Strategic Engagement

The empirical findings indicate that investor-venture interaction extends beyond formal governance mechanisms and is also characterized by continuous and dynamic engagement. Investors are frequently involved in strategic discussions, influencing priorities, challenging assumptions, and contributing to decision-making processes throughout the venture's development.

"I prefer to influence and help out continuously, not only during formal meetings." - O

"Overall, it's a very close dialogue with our main owners, where we meet them regularly... especially in a tough financial market, you become highly dependent on your principal shareholders." - G

Continuous strategic engagement enables ventures to adapt decisions in response to new information, regulatory developments, and market feedback. Interaction unfolds as an ongoing dialogue between investors and venture representatives. This continuous interaction is also reinforced by the structural conditions of the life sciences sector, where long development timelines require sustained collaboration.

"The most important thing is that it doesn't come as a surprise, so you keep them informed continuously. We revise the plan regularly whenever we see that something has changed or needs to be adjusted." - H

"You have to be prepared that it takes much longer time... there will be several funding rounds." - D

Together, these findings indicate that investor-venture interaction is deeply embedded in the venture's evolution rather than confined to discrete decision points. This continuous and embedded engagement implies that the boundaries between governance and operational involvement become increasingly blurred. Rather than acting solely as distant overseers, investors position themselves as active partners who contribute to shaping the venture's

trajectory in real time. Their involvement often spans a wide range of activities such as refining business models, and prioritising development pathways.

4.3.2 Knowledge Complementarity

A central pattern across the findings is the complementarity between investors and venture teams, where each party contributes distinct yet interdependent forms of expertise. Investors bring experience from prior investments, and a broader strategic and market-oriented perspective. In contrast, venture teams possess specialized knowledge of the underlying science, technology, and day-to-day operational realities of the firm. This division of knowledge creates a foundation for improved collaborative decision-making, where strategy emerges through the integration of these perspectives.

“We’re very strong on the scientific side with a lot of articles published, but when it comes to commercialization, or choosing the right market entry path, we typically ask our investors. They’ve seen similar cases before, so they help us prioritize and avoid mistakes we wouldn’t even know to look for.” - M

“It’s a completely different world compared to when you’re trying to sell your product.” - L

These statements highlight the inherent limitations of specialized teams and underscore the importance of accessing complementary knowledge. Rather than attempting to internalize all competencies, ventures rely on external actors such as investors to fill critical gaps, particularly in phases characterized by high uncertainty and complex decision-making. In this sense, investors act not only as advisors but as extensions of the venture’s strategic capacity.

“You cannot have all the knowledge internally in a small company, it’s too costly. You rely on external expertise.” - R

“We have four people on the board, all with many years of experience. They contribute both their own expertise and experience, as well as their networks.” - Q

Noteworthy, the effectiveness of this complementarity depends on the ability to integrate different viewpoints into coherent strategic choices. When successfully managed, this

interaction fosters more robust and well-informed strategies, as decisions are informed by both deep technical insight and broader market awareness.

4.4 Tensions Between Investors and Ventures

The dynamics between investors and ventures are characterized not only by collaboration and value creation, but also by inherent tensions that reflect underlying trade-offs. While investor involvement can accelerate growth and provide resources, it may also come with a cost of reduced autonomy for founders. While investors may contribute valuable resources, its influence may not always be fully realized. Founders are often described as highly driven and committed to their own vision, which can limit the extent to which external advice is incorporated.

“They are often very into their own idea. Sometimes they don’t take that much advice or sometimes not facing reality.” - F

“You don’t have many options when you’re this early. You don’t get many chances to secure an investor... and that also creates a kind of dependency. If you then have different views on the direction the company should take, it will lead to a crash - or the entrepreneur, who is usually the CEO, ends up being replaced.” - J

This highlights that investor contributions are not unambiguously beneficial but instead depends on the venture representatives’ openness to receive external advice. Furthermore, a central tension concerns the balance between growth acceleration speed and founder control. Investors typically prioritize scalability and timely returns, whereas founders - particularly in the life sciences sector - seem to emphasize scientific integrity, and long-term development as the main mission. Consequently, investor involvement can introduce pressure to pursue faster commercialization or strategic pivots that may not fully align with the venture’s original vision.

“We chose not to take external private funding, but only from institutional subsidies and scholarships, which allowed us to grow slowly, but very, very steadily, maintain autonomy, and avoid any conflict of interest that may had occurred.” - L

Some ventures deliberately delay or completely avoid private investment to retain control and strategic independence, even if this slows down growth and scaling possibilities. Thus, access to investor resources is accompanied by a trade-off between speed and autonomy.

“Investors often prioritize primarily maximizing returns, which can create tensions with venture representatives, who are typically deeply committed to their own vision and may still be within the world of academia. This misalignment means that influence must be negotiated and can even lead to leadership replacement.” - J

This reflects a broader tension related to misaligned incentives, where investor objectives may conflict with the venture’s long-term development needs. In some cases, this misalignment can lead to significant organizational consequences, including leadership changes, strategic redirection, or even a breakdown of collaboration.

Importantly, these tensions are not necessarily dysfunctional but represent an inherent feature of investor-venture relationships. Influence seems to depend on the degree of alignment between investors and founders over time. Thus, the empirical findings suggests that investor involvement should be understood as a relational and dynamic process, where value creation and constraint coexist.

4.5 Life Sciences Investor Context

4.5.1 Scientific and Regulatory Uncertainty

A recurring theme across the data collection concerns the distinctive characteristics of the life sciences sector and the challenges these create for organizational scaling. For the life sciences sector, uncertainty extends beyond only the market to include scientific and regulatory dimensions, fundamentally shaping the conditions for growth. Both investors and venture representatives describe these features as inherent to the sector.

“It’s not enough to prove there is a market need - you first have to demonstrate scientific validity and then pass through lengthy regulatory processes before commercialization is even possible.” - Q

“It’s almost always the case that you have to go through fairly tough regulatory processes, and you simply can’t get around the public sector.” - K

A key distinguishing feature of the life sciences sector appears to be the combination of scientific uncertainty and regulatory dependency. Life sciences ventures must first validate their solutions through clinical studies and regulatory approval processes, even before reaching the target market.

“It is a slow process, and it is often unclear who the relevant stakeholders are. The party that realizes the cost savings is not the one bearing the cost, which ultimately leads to a lack of clear responsibility.” - O

This example illustrates how commercialization is embedded in complex institutional structures, where multiple stakeholders - such as healthcare providers, regulators, and payers - must be aligned. This type of institutional complexity is thus a key challenge for companies operating in the life sciences industry and creates additional barriers to scaling.

4.5.2 Long Development Timelines

Another central challenge identified in the empirical findings is the long time horizon associated with development and commercialization in the life sciences sector. Life sciences ventures often operate under prolonged periods before receiving clear signals about the viability of their product. This delay is largely driven by the need for rigorous scientific validation, clinical trials, and regulatory approval, all of which introduce significant time lags between initial development and eventual market entry.

“Development almost always takes longer time than expected, and since we work with biology, the probability of failure is inherently higher than success.” - N

“Yes, that’s how it is, and you also have to be prepared for it to take much longer time, which means there will be additional funding rounds.” - D

“It always takes longer than you think, no matter how many processes you’ve been through before - it’s generally a major challenge in life science.” - F

The findings suggest that in the life sciences sector the challenges of delays and uncertainty are structurally embedded. Biological systems are inherently complex and unpredictable, and outcomes cannot be accelerated without compromising validity. As a result, ventures must commit substantial time and resources long before knowing whether their solution will succeed, making it difficult to plan, allocate capital efficiently, and maintain strategic focus over extended periods.

“You can go for years without truly knowing if you’re on the right track - real validation only comes much later, after extensive testing and regulatory review; that’s why investing in this industry is associated with very high risk high reward.” - I

This prolonged feedback cycle also has important implications for investor relations and funding dynamics. Since tangible proof points are delayed, ventures must rely on intermediate milestones - such as preclinical results or early-phase trial data - to signal progress and maintain investor confidence. However, these milestones are often technical in nature and subject to interpretation, which can create information asymmetries between ventures and investors. As a result, securing continued funding requires not only scientific progress but also the ability to communicate uncertainty and manage expectations over extended periods.

“You must keep investors engaged over long periods without definitive results - so you rely on technical milestones to show progress, even though they’re complex and open to interpretation. It’s as much about managing expectations and communicating uncertainty as it is about the science itself, while internally staying resilient and aligned despite years of ambiguity and setbacks.” - H

Furthermore, the delayed feedback inherent in life sciences development places significant demands on organizational resilience. Ventures must sustain momentum despite long periods of ambiguity, where setbacks are common and outcomes remain uncertain. This reinforces the need for long-term commitment.

4.5.3 High Financial Capital Dependency and Intensity

In the life sciences sector, capital dependency is intensified by high capital requirements, long development timelines, and the absence of early revenue streams. Developing a viable product

often requires substantial upfront investment in research, clinical trials, and regulatory processes, all of which must be funded long before commercialization and revenue streams become possible.

“You should be very careful in choosing investors who can contribute and have strong networks, but many companies do not have that luxury and have to take the investors that are available.” - H

This highlights how ventures must navigate complex trade-offs between securing necessary funding and maintaining strategic alignment. In early stages, where uncertainty is high, the bargaining power often lies with investors rather than founders. Consequently, ventures may accept funding from partners who are not fully aligned with their long-term vision, just to secure funding. At the same time, well-chosen investors can provide significant value beyond financial capital.

“In this sector, getting the money is only the first step. What really matters is choosing investors who understand the science and can help us think commercially. We must bring their perspective together with our own scientific and regulatory knowledge, otherwise the decisions we make won’t hold up in the long run.” - R

Managing capital dependency in the life sciences sector requires more than simply securing funding. It involves carefully selecting and collaborating with investors who can contribute relevant expertise, while simultaneously integrating scientific, regulatory, and commercial perspectives into decision-making. This reinforces the broader finding that successful venture development in life sciences depends on the ability to combine external resources with internal capabilities in a highly coordinated and strategic manners.

4.5.4 Bridging the Gap Between Science and Commercialization

Many ventures operating in the life sciences industry originate from purely academic environments. Founders are often *“first-time entrepreneurs who come directly from academia”* - J, indicating that they possess strong research expertise, but limited experience in commercialization and business development. Hence, this creates an inherent imbalance within ventures, where scientific foundation of the product is highly developed, but capabilities related

to market understanding, regulatory navigation, and organizational scaling remain comparatively underdeveloped.

“The biggest challenge comes when you move beyond the lab - suddenly you’re dealing with investors, customers, and regulators, and the focus shifts from proving the science to proving the business. That transition is difficult, and most teams need external expertise to navigate it.” - I

“It’s very common in early-stage companies to be highly skilled scientifically but less commercially oriented and at that point you need to mature beyond the academic phase.” - Q

“It feels like the question of how you’re going to sell the product comes very late in the process. Many don’t even know whether they should build their own sales force, license the product, or use agents.” - F

This imbalance becomes particularly pronounced as ventures transition from early-stage research to market interaction. At this point, ventures are exposed to a broader set of demands from investors, customers, and regulatory authorities, requiring a shift in focus from scientific validation to commercial viability. Many respondents emphasize that this transition phase is challenging, often necessitating external support in the form of advisors, experienced managers, or investors with domain-specific expertise.

“We’ve checked all the boxes. We have a product, we have clinical approval, and there is a clear need... but now we’re working with the insurance companies so that they will reimburse it, so that physicians get compensated for their time - and that’s a completely new area for us to work with.” - P

While strong research capabilities are essential, they are not sufficient on their own to ensure successful commercialization. Several respondents highlight that scientifically driven founders may underestimate the complexity of bringing a product to market, including the need to align with regulatory requirements, establish a viable business model, and engage effectively with multiple stakeholders.

“Many believe that if the product is good enough, it will sell itself, but that is not the case. There are many good products that never reach the market.” - J

This underscores the importance of incorporating commercial and strategic perspectives from an early stage. Successfully bridging the gap between science and commercialization requires not only scientific excellence but also an understanding of market dynamics, reimbursement systems, and stakeholder incentives. In this context, the selection of investors and partners becomes particularly critical, as they can provide both financial capital and expertise.

Overall, the findings suggest that managing this transition involves developing a more balanced capability set within ventures, where scientific and commercial competencies are integrated rather than treated as separate domains. This often requires building interdisciplinary teams, fostering collaboration between scientific and business functions, and actively seeking external support to compensate for gaps internally. In doing so, ventures are better positioned to navigate the complex pathway from research to commercialization in the life sciences sector.

4.6 Summary of Empirics

The empirical findings show that investors play a substantially broader role than merely providing financial capital in early-stage life sciences ventures. Investor involvement is multifaceted, continuous, and deeply integrated into venture development, positioning investors as active partners across strategic, organizational, and relational dimensions. Four key themes emerged: (1) investor resource contributions, (2) investor-venture dynamics in venture scaling, (3) tensions between investors and ventures, and (4) life sciences-specific characteristics.

First, investors contribute non-financial resources such as expertise, strategic guidance, networks, and legitimacy, helping ventures - often rooted in academia - bridging the gap between scientific innovation and commercialization. Second, they shape organizational development by introducing governance structures, and milestone-based tracking. Third, investor-venture relationships are characterized by continuous strategic interaction, where decisions are co-created through the integration of complementary knowledge - scientific expertise from ventures and market-oriented perspectives from investors. However, this interaction may also create tensions, particularly between growth ambitions and founder autonomy.

Finally, the life sciences context amplifies these dynamics due to scientific and regulatory uncertainty, long development timelines, high financial capital intensity, and institutional

complexity. These conditions increase reliance on external expertise, long-term financing commitment, and close collaboration.

Table 2: Overview of Empirical Findings

Theme	Mechanisms	Exemplary Quotes	Deployed by
Investor Resource Contribution	Expertise & Strategic Guidance: Investors provide commercial, financial, and strategic input, challenge assumptions, and reshape business models. Network Access: Facilitate connections to key stakeholders, enabling partnerships and knowledge exchange. Legitimacy: Act as quality certifiers, signalling credibility and reducing uncertainty. Governance Structures: Introduce boards, milestone-based funding, and formal processes.	<i>“Researchers are often in their own bubble... they need to realize what they don’t know.” (J)</i> <i>“We connect these ventures with larger companies... acting as a network organization.” (I)</i> <i>“Having credible investors... form a quality stamp.” (O)</i> <i>“Defining the strategy with clear direction... clearer roles and responsibilities.” (G)</i>	D, F, G, H, I, J, N, O, P, Q
Investor-Venture Dynamics in Venture Development	Continuous Strategic Engagement: Ongoing interaction beyond formal governance; investors influence decisions in real time. Knowledge Complementarity: Integration of scientific (ventures) and commercial (investors) expertise enhances decision-making.	<i>“I prefer to influence and help out continuously, not only during formal meetings.” (O)</i> <i>“You cannot have all the knowledge internally... you rely on external expertise.” (R)</i>	D, G, H, M, O, Q, R
Tensions Between Growth and Control	Autonomy vs. Investor Influence: Founders often resist external advice, limiting investor impact. Growth vs. Strategic Independence: Access to capital accelerates growth but may reduce founder control. Governance-Induced Constraints: Formal structures increase discipline but may reduce flexibility. Misaligned Incentives: Differing goals and time horizons can lead to conflict or leadership changes.	<i>“They are often very into their own idea... they don’t take that much advice or sometimes not accepting the pure reality.” (D)</i> <i>“You don’t have many options when you’re this early... the entrepreneur... ends up being replaced.” (J)</i>	F, J, L

Life Sciences Investor Context	Scientific & Regulatory Uncertainty: Ventures must validate scientifically and navigate complex regulatory systems before commercialization. Long Development Timelines: Extended feedback cycles delay validation and require sustained funding. High Capital Dependency: Large upfront investments and lack of early revenue increase reliance on external capital. Science - Commercialization Gap: Academic founders often lack commercial capabilities, requiring external expertise.	<i>"It's not enough to prove there is a market need - you first have to demonstrate scientific validity... before commercialization is even possible." (Q)</i> <i>"Development almost always takes longer time than expected... probability of failure is inherently higher." (N)</i> <i>"The biggest challenge comes when you move beyond the lab... the focus shifts from proving the science to proving the business." (L)</i>	F, H, I, J, K, N, O, P, Q, R
---	--	---	------------------------------------

5. Analysis

5.1 Investor Non-Financial Resource Contribution

5.1.1 Investor Expertise and Strategic Guidance

The empirical findings demonstrate that investors contribute to organizational scaling in early-stage life sciences ventures through substantially more than financial capital. Across the interviews, investors are consistently described as providers of expertise, networks, legitimacy, and governance-related support. These findings strongly align with previous literature emphasizing that investors act as active partners in venture development rather than passive financiers (Hellmann & Puri, 2000; Amornsiripanitch et al., 2019). However, the empirical findings also extend the existing literature by illustrating how these contributions unfold throughout the scaling process in the specific context of early-stage life sciences ventures.

A central finding concerns the importance of investor expertise and strategic guidance. The interviews reveal that many founders originate from pure academic and scientific environments and therefore possess strong expertise within that area but limited commercial and strategic experience. Investors are described as helping ventures understand market realities, prioritize strategically, and complement missing internal organizational competencies. This finding supports prior research arguing that investors contribute through strategic advisory roles and professionalization processes (Hellmann & Puri, 2000; Amornsiripanitch et al., 2019). In line with Hellmann & Puri's (2000) argument that investors influence strategic direction and management development, the findings show that investors actively shape how ventures evolve organizationally and commercially. However, the findings also suggest that investor expertise does not merely support organizational development but actively shapes which forms of knowledge and strategic priorities become valued within the venture. Consequently, investor involvement becomes both a resource contribution and a mechanism of strategic influence.

Furthermore, the findings reveal that investor expertise operates as a mechanism for bridging the gap between science and commercialization. Several respondents describe how venture founders, typically researchers, initially assume that scientific success automatically translates into commercial success, but gradually realize that navigating regulatory complexity, reimbursement systems, market positioning, and stakeholder alignment are equally important. Thus, this reflects previous life sciences literature emphasizing the structural divide between

scientific and commercial capabilities (Clayton & Feldman, 2021; Haeussler & Assmus, 2020). The findings further indicate that investors contribute continuous strategic interpretation in environments characterized by delayed validation and prolonged uncertainty. Investor expertise appears to function as an ongoing process of organizational sensemaking rather than isolated advisory support.

From a Resource Dependence Theory perspective, investors reduce organizational vulnerability by supplying support that ventures cannot efficiently internalize themselves. Particularly in small early-stage firms, acquiring all competencies internally would be too costly. Consequently, investor involvement becomes a way of accessing external strategic resources without fully integrating them organizationally. The empirical findings from this study points towards the importance of not only accessing these resources, but also the importance of the continuous interaction between the parties over time. Thus, investors become embedded in ongoing organizational processes and may need to provide resources on a continuous basis. At the same time, the findings suggest that increasing dependence on investor expertise simultaneously increases external influence over organizational priorities, illustrating how resource provision and organizational control become intertwined throughout the scaling process.

5.1.2 Networks Access and Legitimacy

Another finding concerns the importance of network access. Both investors and venture representatives emphasize that success within life sciences depends on relationships with regulators, healthcare systems, industry experts, future investors, and other strategic partners. Investors are described as facilitators of access to broader ecosystems.

This finding strongly aligns with existing literature suggesting that investors contribute through network access (Hsu, 2006). However, the findings from this study suggest that networks in the life sciences context are particularly critical because commercialization depends on institutional alignment across multiple actors rather than direct customer adoption alone. Consequently, investor networks appear to function less as channels for rapid market expansion and more as mechanisms for navigating institutional complexity and uncertainty.

Moreover, the findings also support Resource Dependence Theory by illustrating how ventures seek to manage external dependencies through relationships with key actors. Investors can connect ventures to critical stakeholders and facilitate access to knowledge and opportunities outside the organization. In this sense, investors function as boundary-spanning actors linking ventures to broader ecosystems. However, the findings also indicate that ventures become increasingly embedded within ecosystems shaped by investor relationships, where strategic opportunities and external relationships are partially mediated through investor involvement.

Another key theme derived from the findings concerns legitimacy. Several respondents describe reputable investors as a “quality stamp” that signals credibility to external stakeholders. This finding is highly consistent with Stuart et al. (1999), who show that investors contribute legitimacy that reduces uncertainty for external actors. In this study, legitimacy appears particularly important because life sciences ventures often operate for long timelines without commercial validation. Consequently, external stakeholders cannot easily evaluate ventures based on financial performance. Instead, legitimacy becomes tied to endorsement from recognized actors. This finding extends prior literature (Stuart et al., 1999), with the life sciences context specific insights.

These findings further indicate that legitimacy has cumulative effects. Legitimacy accumulates over time and may trigger a cascading effect. When a reputable investor enters the venture, additional investors and partners become more likely to follow. This suggests that legitimacy works as a cumulative process rather than a one-off signal. Once a venture is perceived as credible, that credibility can attract further credibility. This extends prior literature (Stuart et al., 1999) by showing that investor legitimacy may be dynamic, particularly in sectors where evaluation is not always straightforward. In that sense, investor involvement creates not only immediate certification but also an upward legitimacy trajectory.

This result is strongly relevant to the research question because it shows that investors create value beyond financial capital by shaping how the venture is interpreted by others. In life sciences, where external parties often must make decisions under uncertainty, legitimacy may matter as much as, or even more than, financial capital. The findings therefore confirm existing research while also highlighting a deeper mechanism: investors are not just sources of credibility, but actors reducing uncertainty in environments where scientific validity and commercial potential remain difficult for external stakeholders to independently assess.

5.1.3 Governance as Both Resource and Control Mechanism

The empirical results show that investors play a central role in introducing governance systems such as board positions, clearer roles, reporting routines, and milestone tracking. This supports prior research arguing that investors contribute to venture professionalization through governance involvement and board participation (Kaplan & Strömberg, 2003; Lerner, 1995). Similar to Greiner (1998), the findings show that scaling requires a shift from informal coordination toward structured organizational systems. However, the findings suggest that governance structures in life sciences ventures function not only to coordinate organizational growth, but also to structure uncertainty in contexts where traditional market validation remains absent for extended periods.

At the same time, the findings show that governance is not only a support mechanism but also a control mechanism. This is where the connection to Agency Theory becomes particularly important. Agency Theory emphasizes the potential for misaligned incentives, information asymmetry, and monitoring needs between principals and agents (Jensen & Meckling, 1976). The empirical results show that milestone-based financing rounds and reporting routines help investors evaluate whether ventures are developing as expected, but they also increase external influence over the venture's direction. Therefore, governance has a dual character: it increases discipline, yet it may also limit flexibility and strengthen investor control. Consequently, governance appears simultaneously enabling and constraining, supporting organizational scaling while increasing investor influence over organizational direction.

Furthermore, the life sciences context intensifies this logic. Since progress cannot be measured simply through sales or market share in early-stages, development is instead organized around milestones. Governance in life sciences is not merely about financial oversight or board supervision; it is a way of structuring uncertainty in a sector where long development cycles make traditional performance metrics insufficient. The findings therefore suggest that governance in life sciences ventures operates as a mechanism for managing prolonged ambiguity and delayed validation.

5.2 Investor-Venture Interaction as a Dynamic Process

Another finding is that investor involvement is continuous and embedded, rather than occasional and purely formal. The empirics suggest that investors do not only participate during board meetings or formal settings but are engaged throughout the development process through ongoing dialogues, strategic inputs, and informal advice. This both confirms and extends previous literature on active ownership and strategic involvement. Earlier studies have shown that investors can influence decision-making and participate in venture governance (Sapienza, 1992; Hellmann & Puri, 2000), but the present findings highlight the importance of ongoing, adaptive, and context-sensitive nature of that involvement. Investor influence therefore appears more embedded within the venture's ongoing organizational development processes.

This is particularly important because it addresses the study's first research gap: the lack of process-level insight into how investor contributions unfold over time. The analysis shows that investor value creation is not a single event but a sequence of interactions through which strategic priorities are refined, challenged, and sometimes redirected. In life sciences ventures, where long time horizons and high uncertainty make it difficult to rely on one-time strategic decisions, this continuous engagement becomes especially important. Consequently, investors contribute by helping ventures interpret developments as they unfold in practice and by revisiting earlier assumptions if conditions change. The findings therefore suggest that investor involvement functions as an ongoing process of collective interpretation under uncertainty rather than solely as periodic governance intervention.

Another central theme in the empirical material is the complementarity of knowledge between investor and ventures. The venture side contributes with scientific expertise, while the investor contributes broader market, commercial, and strategic knowledge. This confirms the prior literature's argument that investors and ventures bring different kinds of expertise to the relationship and that these differences can enhance strategic decision-making (Sapienza & Gupta, 1994; Gorman & Sahlman, 1989). The study therefore supports the view that investor-venture relationships are collaborative and knowledge-based. However, the findings from this study adds is a more explicit process understanding of how complementarity works in practice. It is not enough for the two parties to simply possess different kinds of knowledge; they must also be able to negotiate how that knowledge should be weighted and best utilized.

Consequently, collaboration appears not merely dependent on complementary competencies, but also on the continuous negotiation of which forms of expertise should guide organizational decision-making throughout the scaling process.

5.3 Tensions Between Investors and Ventures

5.3.1 Diverging Objectives: Financial Return Maximization vs. Scientific Focus

The empirical findings strongly confirm the literature on investor-venture tension, especially the classic Agency Theory idea that principals and agents may have different goals and time horizons, causing the principal-agents dilemma (Jensen & Meckling, 1976). Investors typically strive for maximizing financial returns, while founders in life sciences more often prioritize scientific integrity and long-term development. The empirical findings shows that this divergence creates a tension around organizational scaling pace. Investors may push for faster commercialization, whereas founders may resist because the scientific process requires caution, iteration, and patience.

What this study adds is that the tension is not only about money or ownership, but also about different logics of what counts as valid progress. Investors may evaluate development through financing milestones, while founders may evaluate it through scientific quality robustness. In life sciences, this distinction matters greatly because the venture's success depends on balancing scientific rigor and commercial viability. The findings thus show that control tensions arise not merely because actors want different outcomes, but because they may also interpret the same situation through different lenses. Consequently, tensions in life sciences ventures appear rooted not only in conflicting incentives, but also in competing interpretations of uncertainty, value creation, and organizational success.

At the same time, the findings suggest that tensions are not necessarily dysfunctional. Rather, they appear to be an inherent feature of investor-venture relationships. Influence is continuously negotiated through interaction, communication, and alignment processes. This supports Sapienza's (1996) argument that investor-venture relationships evolve dynamically over time rather than remaining static. Organizational scaling therefore emerges not as a process of eliminating tensions, but as a continuous balancing of scientific and commercial priorities under prolonged uncertainty.

5.3.2 Autonomy vs. Resource Access

Another tension emerging from the empirical findings concerns the trade-off between autonomy and access to resources. The empirical material shows that some ventures are willing to avoid or delay external financing to preserve strategic independence. This confirms prior literature's assumption that investor involvement can reduce founder autonomy and alter decision-making power (Amornsiripanitch et al., 2019). However, the findings also suggest a high pressure of external funding in life sciences because capital needs are high. Therefore, ventures may accept investors who are not perfectly aligned with their long-term vision simply because they need the financial capital to continue development. This suggests that investor involvement is often shaped less by complete strategic alignment and more by structural dependence on external capital.

The findings also suggest that autonomy is especially important in ventures whose identity is closely tied to scientific purpose. In these cases, external influence may be experienced as a risk not only to control but also to the venture's core meaning. This is an important nuance that adds depth to the discussion of investor involvement. It shows that the cost of funding is not only dilution, but also the possibility of strategic drift away from the venture's original vision. This adds to Amornsiripanitch et al. (2019), because it brings together resource dependence, governance, and identity considerations in one analytical frame. Consequently, autonomy in life sciences ventures appears connected not only to ownership and decision-making power, but also to preserving organizational identity and scientific purpose.

5.4 The Life Sciences Context as a Distinctive Environment

5.4.1 Multi-Dimensional Uncertainty

The empirical findings confirm prior research that life sciences ventures face high uncertainty and require specialized knowledge (Pisano, 2006; Hall & Lerner, 2010; Patzelt et al., 2009). Further, the findings show that uncertainty is multi-dimensional. It is not only market based, but also scientific uncertainty and regulatory uncertainty. This finding strongly supports Pisano's (2006) argument that life sciences ventures operate under multidimensional

uncertainty. Unlike many technology ventures that can quickly test market demand, life sciences firms face delayed validation due to clinical trials and regulatory approval processes.

Furthermore, the findings suggest that this uncertainty increases dependence on investors with specialized expertise. Investors are not only expected to evaluate market opportunities but also scientific validity and regulatory pathways. This supports Patzelt et al. (2000), arguing that sector-specific expertise is especially important within life sciences investing. The findings therefore suggest that investors function not only as financiers, but also as actors helping ventures interpret and navigate multiple interconnected forms of uncertainty simultaneously.

Moreover, commercialization in life sciences appears deeply embedded within institutional systems involving healthcare providers, regulators, reimbursement actors, and public authorities. This institutional complexity creates additional barriers to scaling and reinforces the importance of external networks and expertise. Consequently, organizational scaling in life sciences ventures appears dependent not only on technological development, but also on achieving institutional alignment across multiple external actors and systems.

5.4.2 Long Development Timelines and High Capital Dependency

The findings also confirm existing literature's argument that life sciences ventures operate under long development timelines and delayed validation (Miozzo & DiVito, 2016; Hall & Lerner, 2010). The empirical material shows that these long timelines shape the investor-venture relationship. Ventures often operate for years without definitive proof regarding commercial viability, typically requiring repeated funding rounds and sustained investor confidence.

This supports Hall & Lerner (2010), emphasizing that life sciences ventures require continuous capital investment long before revenue generation becomes possible. The findings further extend this literature by illustrating how delayed feedback cycles affect organizational resilience and investor relationships.

Outcomes remain uncertain for extended periods, meaning that venture must rely on intermediate milestones to maintain investor confidence. However, these milestones are often highly specialized and difficult to interpret unless you are a researcher yourself, increasing

information asymmetry between ventures and investors. Consequently, ventures must continuously manage expectations and communicate uncertainty effectively. This finding shows how capital intensity shapes not only financing structures but also relational power. Ventures depend on investors not only for funding, but also for patience, expertise and long-term commitment. The findings therefore suggest that information asymmetry in life sciences ventures emerges not only from behavior of both parties, but also from the inherent complexity and unpredictability of the scientific development itself.

5.4.3 Bridging Science and Commercialization

Finally, the findings show that many life sciences ventures struggle to bridge the gap between science and commercial viability. Founders often originate from pure academia and therefore possess strong scientific expertise but limited commercialization experience. This supports prior literature emphasizing the structural divide between invention and innovation within life sciences (Clayton & Feldman, 2021). The findings suggest that investor involvement becomes particularly important during the transition from scientific validation to market interaction.

Investors contribute by helping ventures navigate commercialization pathways, go-to-market strategies, and strategic positioning. Thus, successful scaling appears dependent on integrating scientific and commercial perspectives. However, the findings also indicate that this integration is not automatic but requires continuous negotiation between scientific priorities and commercial expectations throughout the scaling process.

Importantly, the findings indicate that scientific excellence alone is insufficient for successful commercialization. Ventures must also develop broader organizational capabilities related to strategy, communication, governance, and stakeholder management. This reinforces the broader argument that investor involvement should be understood as both resource provision and organizational shaping.

5.5 Summary of Analysis

The analysis demonstrates that investor involvement in early-stage life sciences ventures is both resource-oriented and governance-oriented. Through the lense of Resource Dependence

Theory, investors reduce uncertainty and support organizational scaling by contributing expertise, networks, strategic capabilities, and legitimacy. Through the lense of Agency Theory, investors simultaneously shape organizational development through governance structures, monitoring, milestone tracking, and continuous strategic engagement. However, the findings also show that these dimensions cannot be separated in practice. Rather, resource contributions and governance involvement occur simultaneously throughout the venture scaling process. Investors act as advisors, monitors, collaborators, and legitimizers at the same time.

Furthermore, the life sciences context amplifies both dependence and governance need due to scientific uncertainty, regulatory complexity, long development timelines, and capital intensity. Consequently, investor involvement becomes deeply embedded in organizational scaling processes. Though, this involvement creates tensions regarding autonomy, and strategic priorities. The findings therefore suggest that investor-venture relationships in life sciences ventures are inherently paradoxical: investors simultaneously function as enablers of organizational scaling and as actors shaping the strategic direction, organizational priorities, and boundaries of venture development.

6. Conclusion

6.1 Investor Value Creation Beyond Financial Capital

This study aimed to examine how investors create value beyond financial capital in early-stage life sciences ventures. To do this, this study set out to answer the research question: *How do investors create value beyond financial capital throughout the scaling process of early-stage life sciences ventures?* By examining the perspectives of both investors and ventures, the empirical findings show that investors create value far beyond financial capital in early-stage life sciences ventures through a combination of resource provision, governance. Involvement, and continuous strategic engagement. Rather than acting as passive providers of funding, investors are embedded in the scaling process as active contributors to venture development.

First, investors create value through expertise and strategic guidance. In the life sciences context, where many founders are rooted in science rather than commercialization, investors help bridge the gap between scientific development and business-oriented decision-making. Investors can contribute strategic guidance and sector-specific market knowledge that support ventures in navigating regulatory- and market complexities.

Second, investors create value through network access and legitimacy. The findings show that investors connect ventures to relevant stakeholders such as partners, future investors, industry experts, and other relevant actors in the ecosystem. Also, reputable investors strengthen the credibility of a venture and signals quality to outsiders, which can facilitate additional funding.

Third, investors contribute through governance structures. As ventures scale, they require more formalized ways of working and investors typically play a central role in professionalizing the venture through introducing boards, reporting routines, milestones, and clearer role structures. Thus, investors help structure the scaling process while also monitoring development when necessary.

Moreover, the findings shows that investor value creation is not only about resource input, but also about the ongoing relationship between investors and ventures. Investor involvement is characterized by continuous dialogue, collaboration, and knowledge complementarity. Specifically, investors bring commercial and strategic perspectives, while ventures contribute

deep scientific knowledge. Value creation therefore emerges through interaction, not in isolation.

However, the findings also show that investor involvement can cause tensions. The need for financial capital and external expertise may come at the cost of reduced autonomy, and differences in strategic priorities may create friction between investors and founders. In the life sciences context, these tensions are especially salient because development timelines are long, uncertain, and capital intensive.

6.2 Theoretical Contributions

This study contributes to the literature on entrepreneurial finance, venture scaling, and investor value creation in three main ways. First, this thesis contributes to VC and entrepreneurial finance literature by conceptualizing investor value creation as an ongoing organizational process rather than as discrete resource provision. Prior research has primarily focused on financial outcomes such as valuation growth, exits, and fund performance (e.g., Gompers et al., 2016; Kaplan & Lerner, 2016), while studies examining non-financial investor contributions have often treated governance, legitimacy, and network access as relatively static forms of support (Hellmann & Puri, 2000; Amornsiripanitch et al., 2019; Gorman & Sahlman, 1989). The findings of this study instead show that investor influence unfolds through continuous interaction, embedded engagement, and ongoing strategic involvement throughout the scaling process. Investor value creation therefore emerges not only through the provision of resources, but through sustained participation in organizational development over time. In this sense, the study extends prior literature by providing process-level insight into how investor involvement actively shapes venture scaling.

Second, the thesis contributes to the life sciences entrepreneurship literature by demonstrating how the structural conditions of the life sciences sector amplify and reshape investor involvement. Previous research has largely described the sector in terms of scientific uncertainty, regulatory complexity, long development timelines, and high capital intensity (e.g., Pisano, 2006; Hall & Lerner, 2010; Patzelt et al., 2009). However, this study shows how these conditions actively influence governance structures, investor roles, and organizational development processes throughout scaling. The findings indicate that delayed validation cycles and institutional complexity increase venture dependence on external expertise, legitimacy, and

long-term investor engagement. Governance mechanisms such as milestone-based reporting and financing, consistent reporting structures, and board participation therefore function not only as control mechanisms, but also as developmental support systems that help ventures navigate prolonged uncertainty. Furthermore, the findings extend prior research on investor legitimacy (Stuart et al., 1999) by illustrating how legitimacy function as a cumulative process in the life sciences context, where endorsement from reputable investors gradually attracts additional stakeholders, resources, and strategic opportunities over time.

Third, the thesis contributes to the literature by adopting a relational and dual-perspective understanding of investor-venture dynamics. Existing research has often examined investor-venture relationships primarily from either the investor or the venture perspective (e.g., Moritz et al., 2021; Sapienza et al., 1996; Hsu, 2007). By incorporating perspectives from both investors and venture representatives, this study demonstrates that investor-venture relationships simultaneously involve collaboration and control, where value creation and dependency evolve in parallel. The findings show that investor influence is continuously negotiated through alignment and complementary expertise, while tensions concerning autonomy, strategic direction, and growth pace remain inherent features of the relationship. Consequently, the study extends prior literature by illustrating how investor value creation is relationally co-shaped over time, particularly within the highly uncertain and complex life sciences sector.

6.3 Adapted Theoretical Framework

Building on the empirical findings and the initial theoretical foundation, this study proposes a theoretical framework illustrating how investors create value beyond financial capital throughout the scaling process of early-stage life sciences ventures. The framework integrates key mechanisms identified in the empirical findings while incorporating the distinctive contextual conditions of the life sciences sector.

More specifically, the life sciences context functions as an overarching boundary shaping investor-venture interactions. Scientific and regulatory uncertainty, long development timelines, high capital dependency, and the challenge of bridging science and commercialization fundamentally influence how ventures scale and how investors contribute throughout the process.

Within this context, two central mechanisms emerge from the empirics: investor resource contribution and investor-venture dynamics. In line with Resource Dependence Theory, external resources that investors contribute includes expertise and strategic guidance, network access, legitimacy, and governance structures that help ventures compensate for internal capability gaps and support organizational scaling beyond purely financial investment. Further, investor-venture dynamics capture the relational nature of investor involvement, where value creation unfolds through continuous strategic engagement and the complementarity between investors' commercial expertise and ventures' scientific knowledge.

The framework further highlights that these dimensions are interconnected rather than independent. For instance, investors often act simultaneously as advisors, monitors, connectors, and legitimizers. At the same time, tensions and trade-offs function as a moderator influencing how investor involvement affects organizational scaling. Closely linked to Agency Theory, these tensions reflect differing incentives and priorities between investors and ventures, particularly regarding autonomy, strategic direction, and growth pace. Excessive control may undermine venture autonomy, while too strong focus on fast commercialization and financial returns may compromise long-term scientific development. Conversely, insufficient commercial exposure and pressure may limit the venture's ability to scale and realize its market potential.

Finally, the organizational scaling is the outcome of the interaction between life sciences context conditions, investor resource contributions, investor-venture dynamics, and the moderating role of tensions and trade-offs. The framework adds to Resource Dependence Theory and Agency Theory specifically within the context of life sciences ventures by showing that investor value creation is an ongoing and relational process where resource access, governance, collaboration, and tension coexist throughout organizational scaling.

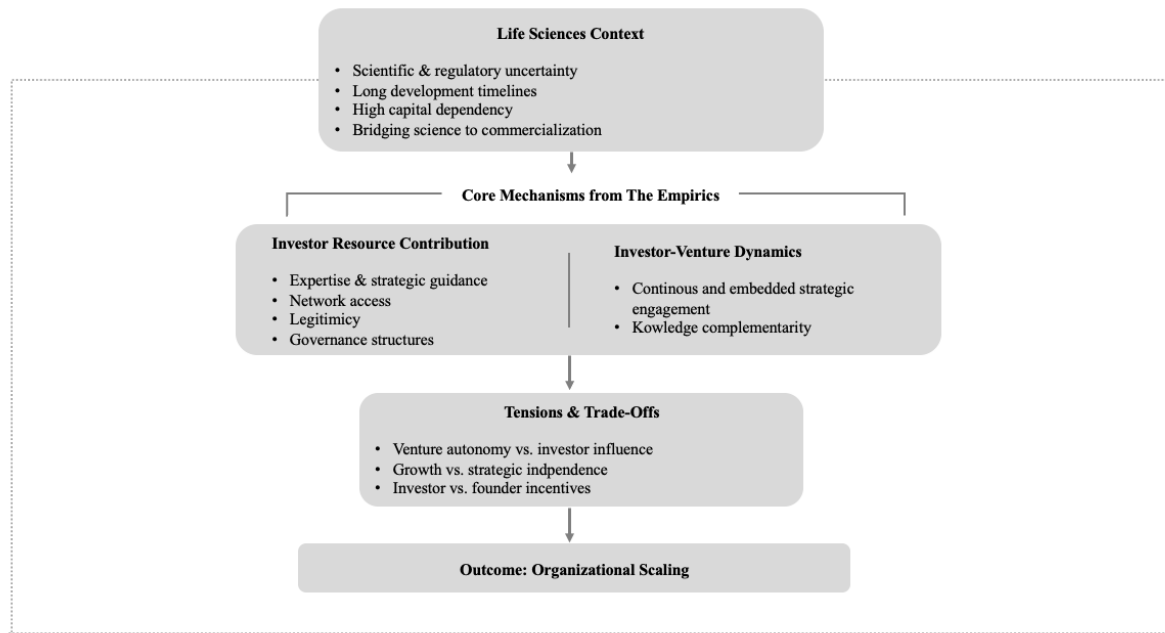


Figure 2: Framework derived from this study

6.4 Practical Implications

The findings of this study have practical implications for both investors and founders operating in early-stage life sciences ventures. For investors, the study demonstrates the importance of actively engaging in value creation mechanisms beyond solely financial investment. Providing capital alone is insufficient; value is created through the underlying mechanisms that can be facilitated with financial capital. Value creation is enhanced through strategic involvement, network facilitation, and governance support. Investors should therefore consider how their experience, expertise, and networks can be effectively leveraged to support venture development. Especially in life sciences, investors need to be prepared for long development cycles, delayed validation, and the need for sustained involvement and additional funding rounds.

For ventures, the findings highlight the importance of selecting investors based on not only financial capacity, but also on their ability to contribute non-financial value. The selection of investor can influence the trajectory and success of the venture, particularly in terms of strategic direction and access to other resources such as networks.

Furthermore, the study emphasizes the importance of managing investor-venture relationships. While investors can facilitate value creation and accelerate growth, it may appear tensions

related to control and strategic priorities. Excessive control may undermine venture autonomy, while too little push for commercialization and financial return may leave the venture unable to reach the max market. Excessive control may undermine venture autonomy, while too strong a focus on rapid commercialization and financial returns may risk compromising the venture's long-term scientific development and strategic direction. Conversely, insufficient commercial pressure may limit the venture's ability to scale effectively and realize its full market potential. Additionally, the findings highlight the importance of adaptivity and the ability to iterate processes on an ongoing basis, especially in the life sciences sector where flexibility and openness to change are critical for success.

6.5 Limitations of the Study

This study has several limitations that need to be taken into consideration. First, the study adopts a qualitative research design with a limited number of interview participants. While this allows for in-depth insights, it limits the generalizability. Second, the study focuses exclusively on the life sciences sector. While this provides value sector-specific insights, the findings may not be directly transferable to other industries. Third, the study relies on self-reported data from interviews, which may be subject to biases such as subjective interpretation. Lastly, the study captures investor-venture relationships at a specific point in time and mainly in Sweden. Given that these relationships evolve over time and may differ across countries, an international, longitudinal perspective could provide additional insights.

6.7 Future Research

Building on the limitations stated above, several avenues for future research are identified. First, future research could adopt a quantitative approach to examine the relationship between non-financial investor value creation and venture performance. This would allow for testing the generalizability of the mechanisms identified in this study. Second, longitudinal and international studies could provide deeper insights how investor involvement evolves over time across different stages of venture development, and how it may differ between countries. Third, studies across different sectors could help identifying whether the mechanisms identified in this study are specific to the life sciences sector or applicable more broadly across industries. Fourth, future research could explore the dynamics of investor-founder relationships, particularly in relation to tensions, power and trust. Finally, further theoretical development is needed to

integrate existing perspectives, such as Resource Dependence Theory and Agency Theory, with emerging concepts such as strategic co-development. This would allow for a more holistic framework covering the understanding for investor value creation in entrepreneurial contexts.

7. Reference List

- Abebe, M. A., Li, P., Acharya, K., & Daspit, J. J. (2020). The founder chief executive officer: A review of current insights and directions for future research. *Corporate Governance: An International Review*, 28(6), 406–436. <https://doi.org/10.1111/corg.12348>
- Amit, R., Glosten, L., & Muller, E. (1990). Entrepreneurial Ability, Venture Investments, and Risk Sharing. *Management Science*, 36(10), 1233–1246. <https://doi.org/10.1287/mnsc.36.10.1233>
- Amornsiripanitch, N., Gompers, P. A., & Xuan, Y. (2019). More than Money: Venture Capitalists on Boards. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2586592>
- Arsel, Z. (2017). Asking Questions with Reflexive Focus: A Tutorial on Designing and Conducting Interviews. *Journal of Consumer Research*, 44(4), 939–948. <https://doi.org/10.1093/jcr/ucx096>
- Asunmonu, O. J. (2025). The Role of Venture Capital and Biotech Investment Trends in Shaping the Future of Therapeutic Innovation: A Financial Landscape Review from Discovery to Commercialization. *International Journal of Multidisciplinary Comprehensive Research*, 4(3), 56–61. <https://doi.org/10.54660/ijmcr.2025.4.3.56-61>
- Barry, C. B., Muscarella, C. J., Peavy, J. W., & Vetsuypens, M. R. (1990). The role of venture capital in the creation of public companies. *Journal of Financial Economics*, 27(2), 447–471. [https://doi.org/10.1016/0304-405x\(90\)90064-7](https://doi.org/10.1016/0304-405x(90)90064-7)
- Baum, J. A. C., & Silverman, B. S. (2004). Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing*, 19(3), 411–436. [https://doi.org/10.1016/s0883-9026\(03\)00038-7](https://doi.org/10.1016/s0883-9026(03)00038-7)
- Bell, E., Bryman, A., & Harley, B. (2022). *Business Research Methods*. 6ed. Oxford University Press. ISBN 978-0-19-886944-3.

- Brown, S.L. and Eisenhardt, K. (1997) The Art of Continuous Change Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations. *Administrative Science Quarterly*, 42, 1-34. - References - Scientific Research Publishing.
- Clayton, P., & Feldman, M. (2021). Academic Teams and Commercialization in the Life Sciences. *Frontiers in Research Metrics and Analytics*, 6.
<https://doi.org/10.3389/frma.2021.733073>
- Cumming, D. J., & Johan, S. A. (2013, August 1). *Venture Capital and Private Equity Contracting: An International Perspective: Second Edition*.
- Daft, R. L. (1983). Learning the Craft of Organizational Research. *The Academy of Management Review*, 8(4), 539. <https://doi.org/10.2307/258255>
- Dimov, D. P., & Shepherd, D. A. (2005). Human capital theory and venture capital firms: exploring “home runs” and “strike outs.” *Journal of Business Venturing*, 20(1), 1–21.
<https://doi.org/10.1016/j.jbusvent.2003.12.007>
- Edmondson, A. C., & Mcmanus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, 32(4), 1155–1179.
- Fometescu, A., Hațegan, C.-D. (2024), The Non-Financial Information Contribution to Value Creation for Companies, *Audit Financiar*, vol. XXII, no. 1(173)/2024, pp. 177-188, DOI: 10.20869/AUDITF/2024/173/007
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods*, 16(1), 15–31.
- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory Strategies for Qualitative Research*. Mill Valley, CA Sociology Press. - References - Scientific Research Publishing. (n.d.). www.scirp.org.

- Gompers, P. A. (1995). Optimal Investment, Monitoring, and the Staging of Venture Capital. *The Journal of Finance*, 50(5), 1461. <https://doi.org/10.2307/2329323>
- Gompers, P. A., & Lerner, J. (2004). *The venture capital cycle*. Mit.
- Gompers, P. A., Gornall, W., Kaplan, S. N., & Strebulaev, I. A. (2016). How Do Venture Capitalists Make Decisions? SSRN Electronic Journal, 135(1). <https://doi.org/10.2139/ssrn.2801385>
- Gorman, M., & Sahlman, W. A. (1989). What do venture capitalists do? *Journal of Business Venturing*, 4(4), 231–248. [https://doi.org/10.1016/0883-9026\(89\)90014-1](https://doi.org/10.1016/0883-9026(89)90014-1)
- Greiner, L. E. (1989). Evolution and Revolution as Organizations Grow. In *Readings in Strategic Management* (pp. 373–387). Palgrave, London. https://doi.org/10.1007/978-1-349-20317-8_25
- Grundy, B. D., & Verwijmeren, P. (2020). The external financing of investment. *Journal of Corporate Finance*, 65(2), 101745. <https://doi.org/10.1016/j.jcorpfin.2020.101745>
- Haeussler, C., & Assmus, A. (2021). Bridging the gap between invention and innovation: Increasing success rates in publicly and industry-funded clinical trials. *Research Policy*, 50(2), 104155. <https://doi.org/10.1016/j.respol.2020.104155>
- Hall, B., & Lerner, J. (2010). The Financing of R&D and Innovation. Harvard Business School.
- Hellmann, T., & Puri, M. (2000). Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence. *The Journal of Finance*, 57(1), 169–197.
- Hsu, D. H. (2006). Venture Capitalists and Cooperative Start-up Commercialization Strategy. *Management Science*, 52, 204-219. <https://doi.org/10.2139/ssrn.623647>

- Hsu, D. H. (2007). Experienced entrepreneurial founders, organizational capital, and venture capital funding. *Research Policy*, 36(5), 722–741.
<https://doi.org/10.1016/j.respol.2007.02.022>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. In *Economic Analysis of the Law* (pp. 162–176). *Journal of Financial Economics*. <https://doi.org/10.1002/9780470752135.ch17>
- Johnsen, C. G., & Lenhard, J. (2025). Navigating the Ambiguity of Impact Investing: How Impact Venture Capitalists Access New Markets, Founders, and Capital. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-025-06053-2>
- Kaplan, S. N., & Schoar, A. (2003). Private Equity Performance: Returns, Persistence and Capital Flows. *SSRN Electronic Journal*, 60(4). <https://doi.org/10.2139/ssrn.473341>
- Kaplan, S., & Strömberg, P. (2003). Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts. *Review of Economic Studies*, 70(2), 281–315.
- Kaplan, S. N., & Lerner, J. (2016). *Venture Capital Data: Opportunities and Challenges*. Social Science Research Network.
- Kandi, V., & Vadakedath, S. (2023). Clinical Trials and Clinical Research: A Comprehensive Review. *Cureus*, 15(2). <https://doi.org/10.7759/cureus.35077>
- Kang, S.-Y., Liu, M., Jeromie Ballreich, Gupta, R., & Anderson, G. (2024). Biopharmaceutical Pipeline Funded by Venture Capital Firms, 2014 to 2024. *Health Affairs Scholar*, 2(10). <https://doi.org/10.1093/haschl/qxae124>
- Kato, A. I. (2025). Venture Capital as a Catalyst for Innovation and Economic Growth in Emerging Economies: A Systematic Review and Future Research Agenda. *Administrative Sciences*, 15(11), 405–405.
<https://doi.org/10.3390/admsci15110405>

- Kvale, S., & Brinkmann, S. (2014). Den kvalitative forskningsintervjun (3rd ed.). Studentlitteratur.
- Lerner, J. (1994). The Syndication of Venture Capital Investments. *Financial Management*, 23(3). <https://ideas.repec.org/a/fma/fmanag/lerner94.html>
- Lincoln, Y. and Guba, E. (1985) Naturalistic Inquiry. SAGE, Thousand Oaks, pp. 289-331.
- Makri, C., & Neely, A. (2021). Grounded Theory: A Guide for Exploratory Studies in Management Research. *International Journal of Qualitative Methods*, 20(1), 1–14. Sagepub. <https://doi.org/10.1177/16094069211013654>
- Marion, T. J., & Meyer, M. H. (2011). Applying Industrial Design and Cost Engineering to New Product Development in Early-Stage Firms. *Journal of Product Innovation Management*, no-no. <https://doi.org/10.1111/j.1540-5885.2011.00839.x>
- Menon, R., & James, L. (2022). Understanding Startup Valuation and its Impact on Startup Ecosystem. *Journal of Business Valuation and Economic Loss Analysis*, 0(0). <https://doi.org/10.1515/jbvela-2022-0020>
- Mina, A., Lahr, H., & Hughes, A. (2013). The demand and supply of external finance for innovative firms. *Industrial and Corporate Change*, 22(4), 869–901. <https://doi.org/10.1093/icc/dtt020>
- Mintzberg, H., & Waters, J. A. (1985). Of Strategies, Deliberate and Emergent. *Strategic Management Journal*, 6(3), 257–272. <https://www.jstor.org/stable/2486186>
- Miozzo, M., & DiVito, L. (2016). Growing fast or slow? Understanding the variety of paths and the speed of early growth of entrepreneurial science-based firms. *Research Policy*, 45(5), 964–986. <https://doi.org/10.1016/j.respol.2016.01.011>
- Moritz, A., Diegel, W., Block, J., & Fisch, C. (2021). VC investors' venture screening: the role of the decision maker's education and experience. *Journal of Business Economics*, 92(1), 27–63. <https://doi.org/10.1007/s11573-021-01042-z>

- Osondu, M., & Prokhorenko, O. (2017). ORGANIZATIONAL DEVELOPMENT CONCEPT DEFINITION: HISTORICAL ASPECT AND MORPHOLOGICAL ANALYSIS. *International Scientific Journal Internauka Series Economical Sciences*, 11(43). <https://doi.org/10.25313/2520-2294-2020-11-6570>
- Oviatt, B. M., & McDougall, P. P. (1994). Toward a Theory of International New ventures. *Journal of International Business Studies*, 25(1), 45–64. <https://doi.org/10.1057/palgrave.jibs.8490193>
- Ozyigit, I. (2020). About life sciences and related technologies. 1(1), 1–11. *Frontiers in Life Sciences and Related Technologies* 1(1) (2020) 1-11
- Pagano, M., Panetta, F., & Zingales, L. (1998). Why Do Companies Go Public? An Empirical Analysis. *The Journal of Finance*, 53(1), 27–64. <https://doi.org/10.1111/0022-1082.25448>
- Patzelt, H., zu Knyphausen-Aufseß, D., & Fischer, H. T. (2009). Upper echelons and portfolio strategies of venture capital firms. *Journal of Business Venturing*, 24(6), 558–572. <https://doi.org/10.1016/j.jbusvent.2008.05.006>
- Pfeffer, J., & Salancik, G. R. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. SSRN.
- Pisano, G.P. (2006) *Science Business The Promise, the Reality, and the Future of Biotech*. Harvard Business School Press. - References - Scientific Research Publishing.
- Reichertz, J. (2009.). Abduction: The Logic of Discovery of Grounded Theory, *Forum, qualitative social research*, vol.11, no.1.
- Sapienza, H. J. (1992). When do venture capitalists add value? *Journal of Business Venturing*, 7(1), 9–27. [https://doi.org/10.1016/0883-9026\(92\)90032-m](https://doi.org/10.1016/0883-9026(92)90032-m)

- Sapienza, H. J., & Gupta, A. K. (1994). Impact of Agency Risks and Task Uncertainty on Venture Capitalist-CEO Interaction. *The Academy of Management Journal*, 37(6), 1618–1632. <https://doi.org/10.2307/256802>
- Sapienza, H. J., Manigart, S., & Vermeir, W. (1996). Venture capitalist governance and value added in four countries. *Journal of Business Venturing*, 11(6), 439–469. [https://doi.org/10.1016/s0883-9026\(96\)00052-3](https://doi.org/10.1016/s0883-9026(96)00052-3)
- Stuart, T. E., Hoang, H., & Hybels, R. C. (1999). Interorganizational Endorsements and the Performance of Entrepreneurial Ventures. *Administrative Science Quarterly*, 44(2), 315. <https://doi.org/10.2307/2666998>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533. <https://www.jstor.org/stable/3088148>
- Timmermans, S., & Tavory, I. (2012). Theory Construction in Qualitative research: from Grounded Theory to Abductive Analysis. *Sociological Theory*, 30(3), 167–186. <https://doi.org/10.1177/0735275112457914>
- Yimfor, E., & Garfinkel, J. A. (2023). Predicting success in entrepreneurial finance research. *Journal of Corporate Finance*, 102359. <https://doi.org/10.1016/j.jcorpfin.2023.102359>
- Wehkamp, K.-H., & Naegler, H. (2017). The Commercialization of Patient-Related Decision Making in Hospitals. *Deutsches Arzteblatt Online*. <https://doi.org/10.3238/arztebl.2017.0797>

8. Appendices

8.1 Appendix 1: Pre-Study Interview Guide

8.1.1 Pre-Study: Venture Representatives

- **Background information**
 - Can you briefly describe your background and current role?
- **General about investor impact**
 - What types of external investors have supported your company so far (VC, angel, corporate, government)?
 - How did their entry influence company strategy, operations, or governance?
 - Were there immediate changes in organizational structure, decision-making, or workflows after investment?
- **Non-financial contributions**
 - Beyond capital, what resources, advice, or support have the investors provide?
 - Which contributions had the most impact on company development?
 - Did different investor types provided different kinds of value?
- **Venture - investor dynamics**
 - How would you describe your relationship with your investors?
 - Have tensions arisen between investor expectations and your strategic priorities?
How were they managed?
 - Can you share examples of synergies or unexpected benefits from investor involvement?
- **Final reflections**
 - Are there aspects of investor involvement that are often overlooked but important for growth?
 - What are the biggest challenges to scaling the company and accelerating growth?

8.1.2. Pre-Study: Investment Professionals

- **Background information**
 - Can you briefly describe your background, current role and investing focus area?
- **Investment approach**
 - How do you decide which early-stage life sciences companies to invest in?
 - What factors beyond financial returns guide your investment decisions?
 - Do your investment strategies differ depending on company stage, geography, or sector?
- **Value creation beyond capital**
 - What types of non-financial support do you provide to portfolio companies (e.g., networks, mentorship, operational guidance)?
 - Can you provide examples of when your involvement improved strategic or operational outcomes?
- **Investor - venture dynamics**
 - How do you engage with venture representatives during the early-stage development phase?
 - Have there been tensions between your goals and the venture founder/CEO's priorities? If so, how were these resolved?
 - Can you share examples of synergies or unexpected positive effects from your involvement?
- **Final reflections**
 - How do you perceive your contributions relative to financial capital?
 - Are there aspects of investor involvement that are often overlooked but important for growth?

8.2 Appendix 2: Main Study Interview Guide

8.2.1 Main Study: Venture Representatives

- **Background information**
 - Could you describe your current role and main responsibilities?
- **Investor ecosystem**
 - Which external investor types are currently involved (VC, angel, corporate, government, etc.)?
 - Are there differences in contributions between investor types?
 - How have each investor type influenced strategy, operations, or governance?
- **Strategic & operational contributions**
 - How have investors shaped operational processes or organizational structure?
 - Can you give examples of how investors influenced strategic decisions (e.g., R&D, partnerships, market entry)?
- **Value Creation Beyond Financial Capital**
 - Beyond capital, what resources or support have had the greatest impact provided by external investors?
 - Which non-financial contributions were most valuable for capability development or company scaling?
- **Venture - investor dynamics**
 - How would you describe your working relationship with investors?
 - Have there been any tensions between investor goals and your strategic priorities? If so, how were they managed?
 - Can you identify any synergies or unexpected benefits from investor involvement?
- **Final reflections**
 - Which type of contribution - financial vs. non-financial - had the greatest impact?
 - What are the biggest challenges to scaling the company and accelerating growth?
 - Any important aspects of investor involvement, scaling, or organizational change we haven't covered?

8.2.2 Main Study: Investment Professionals

- **Background information**
 - Can you describe your background and current role?
- **Investment approach**
 - How do you select early-stage life sciences companies for investment?
 - What factors beyond financial returns guide your decisions?
 - Do your strategies differ depending on company stage or investor type?
- **Strategic & operational contributions**
 - How do you support portfolio companies beyond capital (e.g., operational guidance, strategic advice)?
 - Can you share any example where your involvement directly improved company strategy or operations?
- **Value Creation Beyond Financial Capital**
 - Which non-financial contributions are most critical to early-stage companies?
 - How do you perceive your value relative to financial capital?
 - Are there ways your contributions differ depending on company needs or stage?
- **Investor - venture dynamics**
 - How do you engage with venture founders/CEO during early-stage development?
 - Have tensions arisen between investor goals and venture priorities? If so, how were they resolved?
 - Can you share examples of unexpected synergies or positive outcomes from your involvement?
- **Final reflections**
 - Any important aspects of investor involvement, scaling, or organizational change we haven't covered?

8.2 Appendix 3: Overview of Interviews

Subject	Type of interview	Role	Work Area	Interview Format	Duration	Date
A	Pre-study	Investment Manager	VC 1	Microsoft Teams	44 min	2026-03-02
B	Pre-study	CEO	MedTech 1	Microsoft Teams	52 min	2026-03-02
C	Pre-study	Investment Professional	VC 2	Microsoft Teams	28 min	2026-03-03
D	Main	Angel Investor	Private Investment	Microsoft Teams	48 min	2026-03-09
E	Main	CEO	MedTech 2	Microsoft Teams	37 min	2026-03-10
F	Main	Angel Investor	Private Investment	Microsoft Teams	31 min	2026-03-11
G	Main	CEO	Biotech 1	Microsoft Teams	43 min	2026-03-11
H	Main	CEO	Biotech 2	Microsoft Teams	32 min	2026-03-11
I	Main	Investment Professional	Institutional Fund	Microsoft Teams	45 min	2026-03-12
J	Main	R&D Regional Manager	Life Sciences Ecosystem	Microsoft Teams	44 min	2026-03-12
K	Main	Investment Manager	Institutional Fund	Microsoft Teams	40 min	2026-03-12
L	Main	CTO	MedTech 2	Microsoft Teams	36 min	2026-03-16
M	Main	CEO	MedTech 3	Microsoft Teams	52 min	2026-03-20

N	Main	Angel Investor	Private Investment	Microsoft Teams	46 min	2026- 03-20
O	Main	Angel Investor	Private Investment	Microsoft Teams	32 min	2026- 03-20
P	Main	CFO	MedTech 4	Microsoft Teams	39 min	2026- 03-24
Q	Main	CEO	Biotech 3	Microsoft Teams	36 min	2026- 03-26
R	Main	CEO	Biotech 4	Microsoft Teams	45 min	2026- 03-30

8.4 AI Disclosure

1. What AI tools have been used and how?

During this thesis project, I have used a small number of AI-assisted tools, primarily for practical and linguistic ways. More specifically, I used the AI transcription tool in Microsoft Teams for interview transcription, after which I manually checked and corrected. I also used ChatGPT and Microsoft Copilot to assist with navigating and synthesising existing literature for the literature review part, and for linguistic purposes to improve grammar and rephrasing to polish the academic readability.

2. In what ways have these tools contributed to increasing the quality of the thesis?

The use of AI tools contributed to the quality of the thesis mainly by increasing efficiency and allowing the author to spend more time on collecting data and conducting the analysis. Literature synthesis assistance helped gain a faster overview of complex bodies of work in venture capital, entrepreneurial finance, organizational scaling, and life sciences research, facilitating the identification of relevant patterns and research gaps. Writing support tools improved language consistency and reduced grammatical errors. These contributions enhanced readability without altering the thesis' content.

3. What potential risks were found using AI and what measures were taken to reduce these risks?

Several potential risks were considered when using AI. For example, inaccurate information, over-reliance on AI-generated outputs, and confidentiality concerns regarding interview material. To mitigate these risks, all output from any AI tool were systematically verified against original sources. All interview transcripts were also controlled manually to ensure accuracy and anonymity. AI tools were used as supportive means, ensuring all the interpretation, theoretical reasoning, and analysis remained the author's responsibility.

4. What are the insights gained from using AI tools in the thesis writing process?

The experience highlighted that AI can be a very useful and effective aid for time-consuming and mechanical tasks, such as organizing literature and language editing, and can provide alternative wordings to rephrase paragraphs. However, AI cannot fully replace human critical thinking and interpretative judgement. An effective use of AI requires critical thinking

continuously; outputs should be considered as inspiration or suggestions rather than a final answer.