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Venture Capital as a Growth Catalyst: Founders' Perceptions from German Early-Stage High-Tech Start-Ups

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Abstract

This article examines how German early-stage high-technology start-ups perceive venture capital (VC) backing as a growth catalyst. It conceptualises founders as "customers" of VC value propositions and analyses alignment between ex-ante expectations and ex-post perceptions of VC contribution. Using a pragmatic mixed-methods design, the study surveys 52 VC-backed high-tech start-ups that received pre-seed, seed or Series A funding between 2016 and 2018. Quantitative results show that founders hold broad and ambitious expectations of VC involvement, valuing not only financing but also strategic advisory, market entry, networking, product support and, to a lesser extent, human capital development. VCs are generally perceived to perform positively, particularly in alleviating financial constraints and enhancing market visibility, yet modest negative expectation–performance gaps are evident in several non-financial roles, especially strategic advisory. Qualitative findings highlight challenges related to role ambiguity, communication quality, trust and limited support for organisational professionalisation. Overall, VC is viewed as a clear growth catalyst, but its effectiveness depends

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on expectation alignment, relationship quality and the extent to which non-financial value-adding roles are consciously designed and executed.

Keywords: venture capital, high-tech start-ups, entrepreneurial finance, value creation

Introduction

Over the past decades, venture capital (VC) financing has become widely recognized as one of the most influential sources of support for early-stage entrepreneurial firms operating in dynamic and innovation-intensive environments. Across different economic contexts, studies have consistently shown that venture capital funding is renowned as the dominant source of funding for early-stage companies (Timmons 1999; Bruton et al. 2005; Kaplan & Lerner 2016; Bonini & Capizzi 2019). For many start-ups, particularly those aspiring to scale rapidly or achieve "unicorn status," the backing of a reputable VC firm is perceived as a critical milestone that signals legitimacy, accelerates growth, and provides access to strategic and financial resources otherwise unavailable to young firms.

Yet, despite the aspirational value surrounding VC investment, the probability of securing such funding remains remarkably low. As Marc Andreessen famously stated, among roughly 3,000 inbound applications received by his firm each year, only 6.7% receive an initial review and less than 1% eventually obtain funding (Andreessen, n.d.; Vipond, n.d.; *Marc Andreessen on big breakthrough ideas and courageous entrepreneurs* 2014). This discrepancy between aspiration and actual accessibility makes VC financing not only highly desirable but also highly selective.

Research evidence suggests that VC-backed firms consistently outperform non-VC-backed peers across several metrics, including speed of product launch, profitability potential, and IPO success (Gompers & Lerner 2001, 2002; Hellmann & Puri 2000; Kaplan & Lerner 2016, (Brav & Gompers 1997). VC backing also contributes to better governance structures, faster organisational professionalisation, and improved growth trajectories (Large & Muegge 2008; Bertoni et al. 2011). These observed patterns help explain the strong demand for VC funding among founders of early-stage high-technology firms.

Nevertheless, the literature also highlights limitations and potential drawbacks of VC involvement. Scholars have noted challenges such as downward pressure on valuation (Kirilenko 2001), equity dilution, and excessive control and interference (Cestone 2014). As a result, founders face a delicate trade-off between the benefits of acquiring

financial and strategic resources and the costs of surrendering control and autonomy.

Importantly, existing research on VC value creation and VC-start-up relationships has been predominantly shaped by the perspective of venture capital firms themselves or by objective performance metrics. A literature review shows that majority of the body of research in this field has been based on the sole perspective of the VC firms or on quantitative performance comparisons. In contrast, only a limited number of studies have examined the perceptions of entrepreneurs, who are the actual recipients of venture capital value propositions. Yet, these perceptions matter. Satisfaction with the VC relationship influences knowledge transfer, strategic alignment, cooperation, and ultimately, performance outcomes (Vaidyanathan et al. 2019).

This article directly addresses this gap by evaluating the perception of German early-stage high-technology founders regarding the extent to which VC firms have contributed to the growth of their companies. Germany represents a compelling environment for such an inquiry. As one of Europe's most vibrant hubs for high-tech entrepreneurship (Start-up Ranking, n.d.), the country has continued to witness substantial growth in venture activity. According to recent market analyses, Germany consistently ranks among the top European ecosystems in terms of VC investment volume, number of active funds, and growth of high-technology ventures.

The purpose of this article is therefore twofold. First, we examine the expectations and perceived performance of VC firms from the viewpoint of their portfolio companies, and second, we assess whether VC involvement has acted as a genuine growth catalyst for German early-stage high-tech start-ups.

The study contributes both academically and practically. It deepens the understanding of how founders interpret and evaluate VC financial and non-financial value propositions and identifies gaps between expectations and actual experiences. Practically, it provides guidance to both VC firms and aspiring founders seeking funding in Germany and other ecosystems, offering insights regarding value alignment, post-investment needs, and areas requiring improvement.

The structure of article is as follows. Section 2 presents a comprehensive literature review of VC-start-up relationships, value-added contributions, and growth dynamics of early-stage high-technology firms. Section 3 outlines the research methodology, with emphasis on the mixed-method convergent design employed. Section 4 presents empirical findings, integrating descriptive statistics and thematic analysis. Section 5 summarizes the study's implications, limitations, and conclusions.

Literature Review

Venture Capital and Early-Stage High-Technology Start-ups

The term "venture capital" has evolved conceptually over the years. Gupta and Sapienza (1992) defined venture capital firms as "organisations whose predominant mission is to finance the founding or early growth of new companies that do not yet have access to the public securities market or to institutional lenders." Later, Gompers and Lerner (2003) refined this definition, characterizing VC as "independently managed, dedicated pools of capital that focus on equity or equity-linked investments in privately held, high growth companies." These definitions converge on several core attributes: equity--based financing, long-term orientation, active involvement, and focus on growth-oriented ventures.

Defining a start-up remains more ambiguous. As Ulč and Mandel (2021) note, "A start-up is a difficult concept to define, and its more precise definition might be rather challenging." For this study, we adopt the definition by Kollmann et al. (2016) stating that high-tech start-ups are highly innovative firms with strong growth potential that have been in operation for fewer than ten years.

High-technology firms, in particular, tend to rely heavily on VC due to their large upfront capital needs, long development horizons, and significant intangible assets. As established in the literature, traditional financing sources such as banks are reluctant to fund early-stage technology ventures because these firms lack collateral, demonstrate unpredictable cash flows, and face higher-than-average failure rates (Block et al. 2018; OECD 2015).

Thus, VC funding becomes a critical enabler, providing both the financial foundation and strategic oversight required to transform technological innovation into commercially viable products and services. Studies showed that VC firms not only take an equity position in companies but also play an active role in their governance (Sapienza & Gupta 1994).

The VC Industry and its Role in High-Technology Development

The historical evolution of the VC industry reflects both stability and transformation. Early views in the 1980s celebrated VC investors as visionary catalysts of innovation. However, later scholars also pointed to challenges associated with VC involvement, such as

slowed decision-making or misalignment of strategic priorities (Amit et al. 1990; Rosenstein et al. 1993). Nonetheless, empirical evidence strongly supports the beneficial influence of VC funding on the growth and professionalisation of high-tech ventures.

In the 1990s, Sapienza et al. (1996) identified eight different roles of the VCs under three main categories: i) strategic role (sounding board, financier and business advisor), ii) interpersonal role (mentor/coach and friend/confident), and iii) networking role (source of professional and industry contacts as well as management recruiter). Hellmann and Puri (2000) demonstrated that VC involvement significantly reduces time-to-market for innovative products, particularly for start-ups pursuing an "innovator" strategy. Similarly, findings by Jeng and Wells (2000) solidify the popular belief that venture capital is instrumental in bringing innovations to market at a rapid pace, thereby creating economic growth, jobs, and opportunities for further technological innovation.

At a macro level, VC investments are seen as engines of economic development, creating jobs, stimulating innovation, and increasing productivity across sectors. Iconic technology firms such as Microsoft, Intel, and Oracle were early beneficiaries of venture capital, illustrating the catalytic effect of VC financing at a global scale.

In Germany, the VC ecosystem has expanded significantly in recent years. Reports from recent years indicate a consistent rise in the number of active VC funds, a surge in new start-up formation, and growing international recognition of Germany as a competitive environment for technological entrepreneurship. Notably, more than 3,300 new start-ups were founded in 2021 alone, and over 2,000 secured funding from new investors, which was a 27% increase over the previous year (Start-updetector 2022)[1].

This vibrant environment makes Germany an appropriate setting for examining the current relevance of VC value propositions and the perceptions of founders operating in high-technology domains.

Venture Capital Value Proposition and Value Creation

The value of venture capital extends beyond financial investment. The literature identifies a variety of non-financial contributions that VCs provide, ranging from strategic support and governance enhancement to network access, industry expertise, and human capital development.

[1] Across 2022-2024, there were between 2,650-2,900 new start-ups founded each year (Start-updetector, 2025), but we refer primarily to data for 2021, as that was the year of our empirical study.

Financial Value Added

Early-stage high-technology ventures typically suffer from structural financing constraints. They possess significant intangible assets, limited operating histories, and high levels of uncertainty. Such characteristics significantly limit access to traditional debt financing. Prior studies emphasize that technology-based early-stage ventures have high capital intensity requirements and require external financing to fuel growth (e.g., Gompers & Lerner 2003).

VCs bridge this gap by offering patient capital in exchange for equity, assuming high risk in return for high growth potential. The financial infusion they provide is widely acknowledged as a necessary (though not sufficient) condition for the survival and scaling of high-growth ventures.

Non-Financial Value Added

As Gupta and Sapienza (1992) note, it is important to choose the right VC that offers more beyond finance. Non-financial contributions often differentiate high-performing ventures from their peers.

Typical VC value-adding activities include:

- **Strategic advisory:** supporting business model refinement, market positioning and growth strategy.
- **Governance and monitoring:** occupying board seats, monitoring performance and providing oversight.
- **Human capital development:** assisting with recruitment of key managers, supporting team development and bringing in specialised expertise.
- **Networking and incubation:** facilitating access to partners, customers, subsequent investors and ecosystem actors.
- **Product innovation and development:** contributing to product strategy, validating product–market fit and supporting innovation activities.

Studies categorize VCs as both "scouts" (identifying high-potential opportunities) and "coaches" (developing and professionalizing ventures post-investment). Proksch et al. (2017), examining VC value addition in Germany specifically, found that strategic improvement, governance strengthening, financial assistance, and human capital support were the most frequently mentioned categories of VC contribution.

Research Methodology and Data Sample

Research Conceptual Framework

Building on the empirical insights derived from the literature review, we develop a conceptual framework that articulates the relationship between **venture capital value-adding activities, founders' expectations, their perceptions of VC performance**, and the **resulting influence on early-stage growth outcomes**. The framework comprises several interconnected components. First, it incorporates the full spectrum of post-investment roles typically performed by VC firms, including strategic advisory, governance and monitoring, human capital development, financing activities, access to networks and incubation resources, and product-related support. Second, it recognizes that start-ups assign varying levels of importance to these roles prior to receiving funding, forming a set of expectations shaped by industry norms, prior knowledge, and the perceived needs of their ventures. Third, it considers founders' perceptions of how effectively VC firms actually perform these roles once the investment relationship is established.

Taken together, the framework operates through a sequential logic: founders enter the partnership with predefined expectations; VC firms then deliver different degrees of value across their post-investment activities; founders subsequently evaluate this performance against their expectations; and this comparison shapes their overall sense of satisfaction and informs their judgment of whether VC involvement has contributed meaningfully to the post-investment growth of their companies. Through this progression, the framework captures the dynamic interplay between expected value, experienced value, and perceived growth impact within VC–start-up relationships.

To operationalize this framework, the study uses the role categories summarized in Table 1, which provides definitions for each value-adding activity and links them to early-stage growth indicators. These categories serve as the basis for survey items assessing both expected importance and perceived performance.

Table 1. Definition of conceptual framework terminologies.

Value Adding activities and roles of the VC in the investee company	
Strategic Advisory	• This covers activities of the VC in relation to corporate and business strategic analysis, formulation, revision, and improvement
Governance and Monitoring	• This covers activities of the VC in relation to equity participation, board level seats and involvement level of VC, Board and Management Interaction and level of monitoring, control, and reporting
Human capacity development	• This entails the support provided to the venture in relation to management recruitment, technical skills capacity development and motivation, as well as technical expertise manpower empowerment
Financier	• This relates to role of the VC covering capital raising and infusions and removal of financial bottleneck
Networks and Incubations	• This entails the role of the VCs as an incubator, access to VC network, positive brand, and market signalling effect contributions
Product Innovation and Development	• This relates to the role of the VC as regards advisory and support in product development and launch covering contribution to development of innovative and differential products

Source: *Authors' own representation adapted from Proksch et al. (2017)*

Furthermore, we formalize the relationship between expectations, perception, and satisfaction through the simplified formula presented in Figure 1, which illustrates the core analytical assumption:

Perceived VC Value = Performance – Expectation

Figure 1. The Conceptual Framework Formula.

For each identified VC role attribute:

Perception Mean - Expectation Mean = ± Expectation to Perception Gap

Whereby:

Independent Variables = "Perception Mean" and "Expectation Mean"

Dependent Variable = "Expectation to Perception Gap"

Source: Authors' own elaboration

Within this framework, satisfaction with VC backing is a function of the mismatch (or alignment) between ex-ante expectations regarding VC roles and ex-post perceptions of performance and growth impact. The empirical analysis operationa-

lises this logic by measuring expectations and perceptions on Likert scales, calculating expectation–performance gaps and relating these evaluations to growth-related assessments. A positive gap indicates value addition beyond expectations, while a negative gap signals underperformance.

Together, Figure 1 and Table 1 structure the study's empirical inquiry by clarifying the mechanisms through which founders interpret VC contribution and by identifying the specific domains in which these contributions are expected to influence start-up growth.

Research Design and Procedure

Given the study's aim of exploring both the expectations and perceptions of founders regarding VC involvement, we adopt a pragmatic research paradigm. Pragmatism allows for the integration of qualitative and quantitative strategies, acknowledging that complex organisational phenomena are best understood through diverse forms of evidence. This paper follows pragmatic philosophy using a mix of the inductive and deductive research approach to ensure coherence with the author's methodological tradition.

Accordingly, we implement a mixed-methods convergent design. This design enables simultaneous collection of qualitative and quantitative data, after which findings are integrated for interpretation. This approach enhances robustness: qualitative insights provide nuance and depth, while quantitative evidence provides structure and comparability across respondents.

This study follows a mixed method research approach incorporating both qualitative and quantitative data collection and analysis. We conducted a survey where respondents completed an online questionnaire comprising both closed-ended and open-ended questions. The survey was structured into several sections covering:

- Respondent role and company characteristics (location, sector, funding type and year).
- Expectations regarding the importance of various VC roles.
- Perceptions of VC performance in these roles.
- Perceived VC contribution to key success and growth factors.
- Open-ended questions on areas in which VC firms have met or failed to meet investee needs, and on whether respondents would choose VC backing again in retrospect.

This design is particularly appropriate for investigating VC–start-up relationships because it captures both measurable assessments (e.g., average rating of strategic support) and subjective interpretations (e.g., disagreements, disappointment, perceived gaps, and nuances in relational dynamics). As Creswell and Plano Clark

(2017) emphasize, mixed-method convergence strengthens validity by allowing researchers to triangulate patterns across different data types.

Most closed-ended items employed five-point Likert scales. Open-ended questions allowed respondents to articulate nuanced experiences and challenges in their own words. The questionnaire was pilot-tested with selected founders to ensure clarity, appropriate terminology and reasonable completion time.

Target Population and Data Collection

The target population comprised German early-stage high-technology start-ups that had received pre-seed, seed, or Series A venture funding between 2016 and 2018. These years were deliberately selected because they coincided with a period of significant growth in the German VC market while still allowing enough time for founders to reflect meaningfully on post-investment dynamics. These years of funding also allow for avoiding distortions associated with the COVID-19 pandemic.

Using a non-probability sampling technique, specifically a combination of purposive sampling (targeting founders with VC backing) and snowball sampling, the research identified qualified respondents across multiple regions and industries. This sampling approach is justified by the challenges inherent in obtaining fully randomized samples of venture-backed founders, as noted in the original work and in prior studies that rely on founder networks and databases such as Crunchbase for identifying investment histories.

Data were collected between April 14 and May 15, 2022, via an online survey hosted on Google Forms. Survey links were distributed through:

- LinkedIn direct messages and professional outreach
- founders' communities (e.g., Innovators Room, 2hearts Tech Community)
- private entrepreneurship networks
- publicly posted invitations shared more broadly on social media to reach additional eligible respondents.

Ethical considerations included maintaining respondent anonymity, avoiding the collection of directly identifying personal data and using the data exclusively for academic purposes.

A total of 68 responses were received. After excluding respondents without VC backing and those whose first VC funding occurred after 2018, the final analytical sample consists of 52 VC-backed start-ups.

Overview of Respondents

The respondent pool reflected a broad and diverse representation of the German high-technology start-up ecosystem. In terms of organisational roles, participants were predominantly senior decision-makers, ensuring an informed appraisal of venture capital involvement. The majority were **Co-Founders (28.8%)** or **Chief Executive Officers (19.2%)**, with an additional group serving concurrently as **Founder-CEOs (11.5%)**. Other respondents occupied key strategic functions such as **Chief Technology Officer, Chief Financial Officer, Head of Business Development, Head of Marketing**, and related leadership positions. This high level of seniority enhances confidence that the responses accurately reflect the companies' strategic and operational experiences with their venture capital partners.

The financing characteristics of the sample similarly reflect contemporary patterns within the German VC landscape. A substantial proportion of firms received their qualifying investment round in **2018 (44.2%)**, followed by **2017 (34.6%)** and **2016 (21.2%)**, aligning with the period of heightened venture activity identified in national VC reports. In terms of stage, **seed funding dominated the sample (59.6%)**, with additional representation from pre-seed and Series A rounds, confirming the early-stage profile of the participating firms. Regarding investor type, **corporate venture capital (CVC) investors accounted for 59.6%** of the funding relationships, followed by financial VC funds, independent partnership funds, and a smaller number of public or government-backed investment vehicles. This distribution reflects the increasing prominence of CVCs in Germany's innovation ecosystem.

Geographically, the start-ups were highly dispersed, spanning **14 of Germany's 16 federal states**. As expected, **Berlin and Bavaria** emerged as the most strongly represented locations, consistent with their status as leading national hubs for technological entrepreneurship, followed by Hamburg, North Rhine-Westphalia and several smaller regional clusters. Finally, the sample encompassed a broad array of high-technology sectors, including **finance and financial services, communication and networking, biotechnology, manufacturing, electronics and computer hardware, education, healthcare and pharmaceuticals**, among others. This sectoral diversity reinforces the validity of the findings across the wider German high-tech domain.

Data Analysis Techniques

Quantitative data were analysed using descriptive statistics, focusing on means and standard deviations for expectation and perception items, as well as for perceived contribution to growth factors. Given the non-probability sampling and limited sample size, the result interpretation does not include inferential statistics and generalisation to the broader population of German start-ups.

Qualitative responses were analysed thematically. Initial coding was conducted to identify recurrent topics in respondents' descriptions of VC strengths, weaknesses and challenges. Codes were then grouped into higher-level themes, which are presented in the findings section and used to interpret quantitative results.

Findings

Expectations About the Importance of VC Roles

Respondents were first asked to rate how important they considered different VC roles at the time of investment. Across the sample, expectations regarding VC value-added were high. The overall mean importance rating across all roles is slightly above 4 (SD = 0.72) on a five-point scale, indicating that founders view VC involvement as highly consequential across multiple domains.

Table 2. Respondents' Expectations about the VC's Roles.

Expectations about Importance of VC Roles	N	Minimum	Maximum	Mean	Std. Deviation
Financing	52	2	5	4.79	.536
Market Entry	52	1	5	4.10	1.209
Business Networks and Incubation	52	1	5	4.10	1.015
Business Strategy Advisory	52	1	5	4.08	.904
Product Innovation and Development	52	1	5	3.92	1.250
Coaching and Mentorship	52	1	5	3.87	.908
Governance and Monitoring	52	1	5	3.81	1.121
Human Capital Development	52	1	5	3.48	1.111

Source: Authors' own elaboration

The highest expectation is placed on financing, with a mean of 4.79 rating close to the top of the scale and a relatively low standard deviation, reflecting broad consensus that provision of capital is both necessary and central to the VC proposition. However, respondents also ascribe substantial importance to non-financial roles:

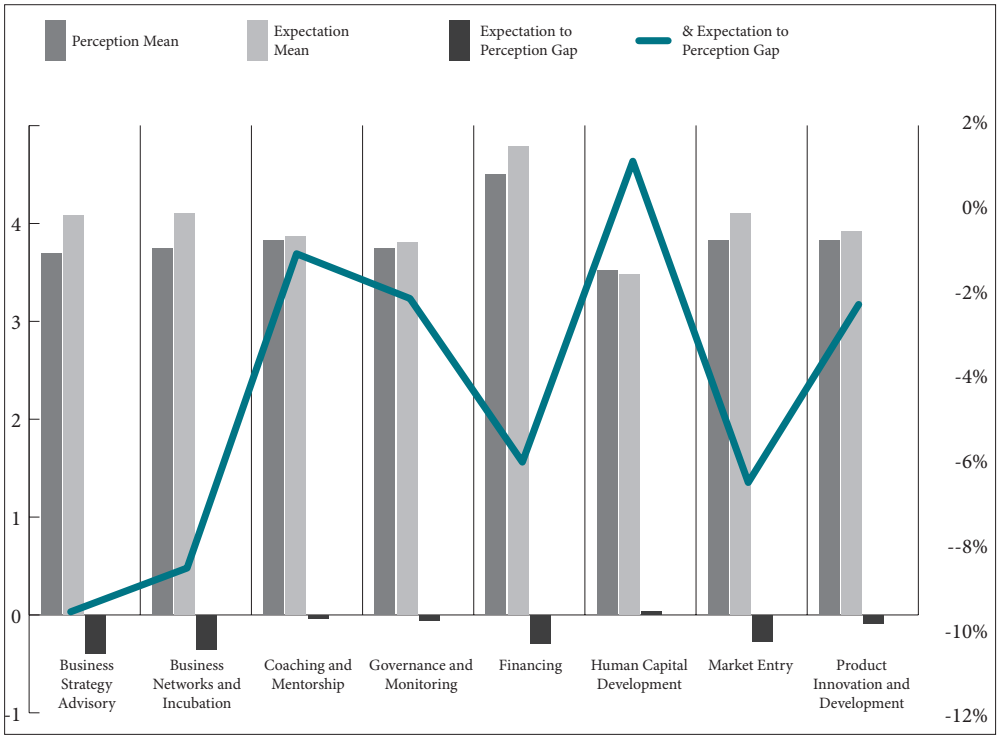
- Market entry and business networks and incubation are rated highly (the means of 4.10 and 4.10), signalling that access to customers, partners and channels is considered pivotal.
- Business strategy advisory is also rated as very important (the mean of 4.08), as founders look to VCs for guidance in refining their strategic direction.
- Product innovation and development, coaching and mentorship and governance and monitoring are all rated as important (the means of 3.92, 3.87 and 3.81), albeit with slightly greater variation across respondents.
- Human capital development (e.g. support in recruitment and team development) receives the lowest importance rating among the roles (the mean of 3.48), though its mean still exceeds the midpoint of the scale.

These findings strongly correspond to prior literature highlighting the importance of capital, market access, and strategic guidance in high-tech venture development. The high variance in expectations regarding product development suggests that founders differ considerably in how they envision the ideal scope and depth of VC involvement in shaping, validating, and advancing their technological offerings.

Perceptions of VC Performance

Respondents then evaluated how well their VC investors had performed in each role. Overall, the level of satisfaction is positive but somewhat lower than initial expectations. The aggregate mean performance rating of 3.83 (SD=0.79) is slightly below the mean importance rating, indicating modest under-fulfilment.

Figure 2. Expectation to Perception Gap and Variance Analysis.



Source: Authors' own elaboration

Figure 2 shows that the strongest perceived contributions are observed for financing, with a high mean performance score. This suggests that VCs generally meet expectations regarding timeliness and adequacy of funding. For market entry, business networks and incubation, product innovation and development, coaching and mentorship, and governance and monitoring, performance ratings are solidly above the scale mid-point but tend to fall short of the corresponding importance ratings.

The largest expectation-performance gap occurred in strategic advisory, indicating that although founders highly value strategic counsel, they perceive inconsistency in execution across VC firms. Interestingly, human capital development is the only dimension for which perceived performance slightly exceeds the initial importance expectation, even though both scores are relatively lower than for other roles. This might be suggestive of VCs being more active in recruitment and team building than founders initially assumed.

Taken together, these findings point to a nuanced picture: founders acknowledge meaningful non-financial contributions by VCs, yet in most areas they perceive some gap between what they had hoped for and what has been delivered.

VC Contribution to Success and Growth Factors

When asked to assess VC contribution to specific success and growth factors, respondents again report predominantly positive experiences. Perceived contribution is strongest in relation to financial resources, where a large majority agrees that VC backing has greatly alleviated financial constraints and supported company development (see Table 3).

VC contribution to competitive strategies, innovative research and development and management coaching and support is rated moderately to strongly positive, although with greater variability between firms. By contrast, perceptions are more lukewarm regarding VC involvement in technical competencies of founders and management and especially in management team recruitment and selection, where mean scores are closer to the mid-point and several respondents perceive only limited support. This low rating is further emphasized by the comments from the respondents around VCs not assisting with the challenge of suitable hires and reduction of staff attrition rate in the portfolio companies. Yet, the literature indicates that VCs frequently assist with professionalisation and talent acquisition (Hellmann & Puri 2000). The discrepancy suggests either unmet expectations or sector-specific conditions (e.g., high competition for tech talent in Germany).

Table 3: VC contribution to Early-Stage High Tech Companies Growth Factors.

Growth Factor	N	Minimum	Maximum	Mean	Std. Deviation
Financial	52	3	5	4.54	.670
Competitive Strategies	52	1	5	3.71	1.109
Innovative Research and development	52	1	5	3.52	1.244
Management Coaching and Support	52	1	5	3.31	1.147
Technical Competencies of Founders and Management	52	1	5	3.15	1.109
Management Team Recruitment and Selection	52	1	5	2.79	1.143

Source: Authors' own elaboration

Turning to more aggregate growth indicators, respondents overwhelmingly acknowledge (96.2%) that VC backing has added value beyond funding and contributed to their company's post-investment growth. The dominant majority agree that VC involvement has enhanced market visibility and prominence, echoing the notion of VC as a credibility and signalling mechanism. In contrast, assessments of VC impact on employment and staff growth are more cautious, suggesting that job creation dynamics may be driven more by internal strategic and operational choices than by investor intervention. This suggests that while VCs catalyze external-facing growth outcomes, their impact on internal organisational development may be more limited.

Challenges and Unmet Needs

The thematic analysis of open-ended responses reveals three main categories of challenges that German early-stage high-tech start-ups experience in their interactions with VC investors.

Ambiguity in VC–Management Roles and Responsibilities

Several respondents express frustration with either too little or too much VC involvement in operational matters. On one side, some founders expect more hands-on support in areas such as corporate structuring, legal and accounting issues, risk management or procurement. On the other side, others describe situations in which VCs appear to step too far into operational decision-making, thereby creating tensions about who ultimately "runs the company."

These comments suggest that expectations about the appropriate division of tasks between investors and management are not always explicitly aligned. Founders may hope that VCs will help to shoulder burdensome *"back-office stuff (incorp structures), legal, accounting…," "risk management and developing procurement strategy,"* while VCs may see their role as strategic rather than operational. Conversely, some VCs may feel compelled to intervene deeply when performance lags, whereas founders may interpret such interference as a sign of distrust.

Clarifying roles and responsibilities early in the relationship, for example through board charters or explicit expectations management, could mitigate such misunderstandings.

Communication and Trust

A second theme concerns communication quality and trust. Some respondents describe constructive, transparent communication and view their investors as trusted sparring partners. Others report communication that is perceived as overly controlling, sporadic or focused mainly on reporting rather than joint problem-solving, e.g., *"They [VC] only saw their own advantage, frequently shutting us out of planning and negotiations."*

Where trust is lacking, founders may feel compelled to invest significant time in "managing the VC relationship," preparing extensive reports or engaging in signalling behaviours to reassure investors, rather than openly sharing difficulties and jointly exploring solutions. Such dynamics can erode the potential value-adding role of VCs and lead to underutilization of their expertise and networks.

These insights echo into broader agency-theoretic concerns in VC relationships, where information asymmetries and misaligned incentives can give rise to monitoring mechanisms that are perceived as burdensome or mistrustful. From a customer satisfaction perspective, they highlight that not only the content of VC value-adding activities matters, but also the relational quality with which they are delivered.

Human Capital Development

A third challenge area relates to human capital development and organisational professionalisation. Quantitative results show relatively low perceived VC contribution to management recruitment and selection, and this is echoed in by qualitative comments that call for more support in building strong teams, reducing staff turnover and professionalising internal processes.

At the same time, founders' expectations regarding human capital support are themselves somewhat lower than for other roles. This may reflect an underlying assumption that recruitment is primarily a management responsibility. Yet as start-ups attempt to scale, the need for experienced functional leaders, robust HR practices and scalable processes becomes critical. This aligns with evidence from Hellmann and Puri (2000), who show that start-ups often expect VCs to act as catalysts for professionalisation.

VCs, especially those with deep sector experience and large networks, could potentially play a more proactive role in this domain, for example by facilitating access to talent pools, recommending executive search partners, or sponsoring leadership

development for founders and key managers. Where such support is limited, investee firms may perceive a gap between the rhetoric of "smart money" and the reality of the support they receive in building organisational capacity.

Discussion

The empirical findings provide a rich picture of how German early-stage high-tech start-ups perceive VC backing as a growth catalyst. Several points are worth discussing.

First, the results confirm that founders' expectations of VC investment are broad and ambitious. They seek not only capital but also strategic counsel, network access, market entry support and assistance in professionalising their organisations. This reinforces the characterisation of VC as a multi-faceted service provider rather than a mere financier.

Second, while VC firms are generally perceived to perform positively across most roles, expectation–performance gaps are visible in several domains. Customer satisfaction theory suggests that such gaps are important predictors of overall satisfaction and future behavioural intentions. The fact that almost all respondents say that VC backing positively strengthens growth, despite these gaps, indicates that the perceived benefits clearly outweigh the shortcomings. Nonetheless, unaddressed expectation–performance gaps may accumulate over time and affect relationship quality, especially during periods of stress.

Third, the evidence strongly supports the view of VC as a growth catalyst in terms of financial resources and market visibility. VC backing appears to ease financial constraints, enable more ambitious growth strategies and enhance credibility with external stakeholders. However, perceptions of VC impact on internal organisational development, especially regarding human capital and process professionalisation, are more mixed. This could suggest that internal capabilities and leadership remain critical determinants of growth, and that VC support in these areas may be under-exploited or under-provided.

Fourth, the challenge themes identified underscore the relational nature of value-creation in VC–entrepreneur interactions. Role ambiguity, communication quality and mutual trust emerge as key determinants of how VC involvement is experienced. From a managerial perspective, both VCs and founders could benefit from more explicit expectation management at the outset, clearer articulation of who is responsible for what, and deliberate investment in trust-building and open communication practices.

Finally, the German context adds an interesting layer. The strong presence of corporate VC investors in the sample suggests that strategic alignment and access to cor-

porate resources may play a particularly important role in shaping expectations and experiences. The extent to which corporate VCs differ from financial VCs in their value-adding behaviours and relational dynamics remains an important avenue for further research. By doing so, one could make generalize the insights of this study more.

Conclusion

This study demonstrates that German early-stage high-tech founders view VC backing as a multi-dimensional resource that supports growth both financially and strategically. Despite some unmet expectations, VC firms are generally perceived to perform well, particularly in areas related to financing, market access and external credibility. Almost all respondents believe that VC involvement contributed meaningfully to their company's development. Overall, the findings reinforce the view that VC operates as a growth catalyst, but that the effectiveness of this relationship depends heavily on expectation alignment, communication and the quality of post-investment collaboration.

For entrepreneurs, the findings underscore that selecting a VC investor is a strategic decision that should consider non-financial value contributions alongside valuation and cheque size. Early discussions regarding roles, expectations and communication norms can prevent later misunderstandings. Founders should also proactively leverage investor networks and expertise while retaining responsibility for operational execution. For VC firms, the results point to the importance of clear expectation management, transparent communication and trust-building practices. Strengthening capabilities in human capital development and organisational scaling could enhance the non-financial value proposition, particularly for early-stage high-tech ventures facing rapid growth pressures.

This research highlights the value of studying VC–entrepreneur relationships from the perspective of investee firms, a viewpoint that remains underrepresented in the academic literature. It supports the relevance of customer satisfaction theory as a useful lens for analysing expectation–performance alignment in entrepreneurial finance. The findings also raise questions about how different types of VCs: corporate, financial and government-backed, differ in their value-adding behaviours, suggesting the need for further research that disaggregates investor categories and examines sector-specific dynamics.

The study's non-probability sampling and reliance on self-reported perceptions limit generalisability, and the cross-sectional design does not capture how expectations

and evaluations evolve over time. Future research should incorporate longitudinal designs to examine how VC–start-up relationships develop across investment stages and how perceptions align with objective performance outcomes. Comparative studies of corporate versus financial VCs would help clarify whether value-adding roles differ systematically. Additional work could explore sector-specific patterns or cultural and institutional factors shaping VC–entrepreneur interactions in Germany and beyond.

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