

ESG Integration in Venture Capital Investment Practices: Evidence from Saudi Arabia's Transforming Entrepreneurial Ecosystem

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Abstract

Purpose: This study examines the extent and pattern of environmental, social, and governance (ESG) integration within venture capital (VC) investment practices in an emerging market. Focusing on Saudi Arabia, it investigates how ESG considerations enter investment practices, the relative priority assigned to environmental, social, and governance dimensions, and the motivations and constraints shaping their adoption.

Design/Methodology/Approach: The study adopts an exploratory and descriptive research design based on a structured survey of 21 VC firms operating in Saudi Arabia. The survey captures ESG practices across investment decision-making, monitoring and reporting, and formalization and infrastructure. It also examines the relative priority of the three ESG dimensions and the motivations and constraints associated with ESG integration. Organizational and investment characteristics of participating VC firms are used to contextualize the findings.

Findings: The findings reveal an emerging but uneven pattern of ESG integration. ESG considerations are relatively more evident in investment decision-making, including investment evaluation and, in some cases, rejection of investment opportunities, but remain less developed in formal monitoring, reporting, and organizational infrastructure. ESG integration is distinctly governance-focus, with governance receiving substantially greater priority than social and environmental considerations. Adoption is driven primarily by strategic and internally motivated factors, particularly value creation and risk mitigation, while difficulties in ESG measurement and limited internal resources and expertise constrain more systematic implementation.

Originality: The study contributes to the sustainable finance and entrepreneurial finance literature by identifying how ESG integration is developing within an emerging private-capital ecosystem. The

findings reveal a transitional pattern in which ESG considerations can acquire relevance to investment decisions before being supported by systematic measurement, monitoring, and formal organizational capabilities. The study thereby provides insight into the progression from selective ESG consideration toward more institutionalized investment practices in an emerging VC market.

Practical Implications: The findings suggest that the next stage of ESG development requires greater emphasis on translating emerging ESG consideration into consistent investment practices. For VC firms, this includes incorporating material ESG issues into screening and due diligence, developing proportionate monitoring mechanisms, and strengthening internal ESG capabilities. For startups, the governance-first pattern highlights the importance of establishing credible governance and accountability practices while developing capacity to respond to broader environmental and social information requirements. For policymakers and ecosystem-support institutions, the findings point to the value of practical guidance, capacity-building, and improved ESG data infrastructure

Keywords: Sustainable Finance, Venture Capital, Environmental, Social, and Governance (ESG), Saudi Arabia, Investment Decision-Making, Entrepreneurship, Emerging Markets.

Introduction

While traditional investment decision models emphasize financial metrics such as risk and return, there is growing recognition among investors of the importance of non-financial factors, particularly those related to sustainability criteria, in shaping investment decisions (Revelli & Viviani, 2015; Barber et al., 2021; Voß et al., 2025). Investors now increasingly evaluate a firm's performance not only from a financial perspective but also consider environmental (e.g., carbon footprint, renewable energy, waste management), social (e.g., labour standards, diversity, community engagements, data privacy) and governance (e.g., board structure, shareholders' rights, transparency and internal control) (ESG) factors when making an investment decision (Botsari & Lang, 2020; García-Sánchez et al., 2022; Khan & Iqbal, 2024). This shift is driven by evidence showing that strong environmental and social performance can enhance a firm's financial outcomes, improving both returns and risk management (Friede et al., 2015; Grewatsch & Kleindienst, 2017; Gillan et al., 2020). Studies by Gregory et al. (2014) and Margolis et al. (2007) support the positive relationship between corporate responsibility and financial performance. Additionally, the rising demand for sustainability disclosure and performance, often encouraged by institutional pressures (Adebanjo et al., 2016; Botsari & Lang, 2020; Li & Lingnau, 2020; Voß et al., 2025), is pushing investors toward ESG-conscious decisions. Many investors are also guided by personal and ethical values, seeking alignment between their capital allocation and broader social and environmental objectives. As early as Fama and French (2007), scholars have recognized the role of ethical and moral considerations in shaping portfolio choices. Studies (Heinkel et al., 2001; Brodback et al., 2019) further demonstrate that many investors actively avoid firms that conflict with their ethical standards and instead seek out investments that reflect their personal beliefs. For instance, Pasewark and Riley (2010) found, in experimental settings, that investors often prefer bonds issued by companies aligned with their ethical views. Hence, non-

financial factors relating to ESG play a role in investment decisions due to their effect on financial performance, the result of institutional pressure, and their alignment with investors' personal values.

This evolving investment setting has influenced not only investor behaviour but also corporate strategy. As demand for sustainability and ESG-conscious practices intensifies, companies increasingly recognize that aligning with investor expectations is not only a matter of social responsibility but also a strategic means for attracting capital (Scheyvens et al., 2016; Yin, 2019; Postiglione et al., 2024). Businesses seeking funding, particularly from institutional or impact-oriented investors, are now expected to demonstrate a genuine commitment to ESG principles. This shift has led many corporations to rethink the traditional trade-off between profitability and sustainability. Instead of viewing environmental and social responsibility as a cost or constraint, firms are beginning to see it as a source of competitive advantage and long-term value creation (Hegeman & Sørheim, 2021; Lange & Banadaki, 2024). The prevalent mindset is moving toward the belief that businesses can "do well by doing good", generating profits while simultaneously contributing positively to the environment and society (Meles, 2021).

This perspective is increasingly evident not only among established corporations but also within the startup and entrepreneurial ecosystem. Startups, particularly those operating in innovative and technology-driven sectors, are often more responsive to emerging trends, including the growing emphasis on ESG and sustainability (Bocken, 2015). Given that startups are widely regarded as engines of economic growth and innovation, their proactive approach to sustainability positions them as potential promoters for broader ESG adoption.

Within this framework, finance plays a critical role in influencing ESG practices. This is where the role of venture capital (VC) becomes particularly significant. As key financiers of early-stage, high-growth startups, venture capitalists are uniquely positioned to influence the integration of ESG practices within the entrepreneurial landscape (Bocken, 2015; Bellucci et al., 2023). By directing capital toward startups that prioritize sustainability and responsible governance, VCs not only support the development of innovative solutions to environmental and social challenges but also set expectations for ethical and sustainable business conduct (Marcus et al., 2013; Zolo et al., 2021; Merhabi, 2023). Venture capitalists have the organizational flexibility to quickly adapt their strategies in response to external disruptions, allowing them to reallocate resources toward projects that gain relevance and profitability under new conditions (Bellucci et al., 2023). This advantage enables VC investors not only to respond to but also to anticipate major shifts, including those related to social and environmental sustainability.

Previous research has recognized the significant relationship between finance and sustainable development. Choudhury et al. (2021) explore the role of the banking sector in fostering renewable energy growth and highlight the positive impact of investing in renewable energy on advancing environmental goals and enhancing financial system stability. Similarly, Wang & Wang (2021) explore how green finance advances corporate green development, suggesting that structured

financial tools that mobilize capital toward sustainable initiatives can drive both environmental protection and social welfare improvements. More specifically, recent literature has documented the positive relationship between VC as a valuable financial tool and sustainability development, including the role of VC in achieving the sustainable development goals (SDGs) (Gucciardi, 2024), how can sustainable venture capitalist contribute to the success of sustainable startups (Bocken, 2015; Liu et al., 2023), and the impact of VC on corporate social responsibility and ESG performance (Jianye et al., 2023; Zhang et al., 2024).

Given the well-established link between financial mechanisms and sustainable development, and recent studies emphasizing the role of VC in supporting ESG practices and advancing sustainability goals, the present study is motivated by the need to understand how global ESG trends are interpreted and incorporated into venture capital investment practices within the rapidly evolving Saudi Arabian market. It adopts an exploratory and descriptive perspective to assess where and to what extent ESG considerations enter the venture capital investment process, including screening, due diligence, investment evaluation, and post-investment monitoring. Particular attention is given to whether ESG considerations remain largely aspirational or whether they have begun to influence actual investment practices and decisions.

The study further examines how Saudi venture capitalists prioritize the environmental, social, and governance dimensions of ESG and identifies the principal motivations and constraints shaping their adoption. In doing so, it seeks to move beyond a simple assessment of whether ESG is present or absent and instead characterize the emerging pattern of ESG integration within the Saudi VC ecosystem. Firm and investment characteristics, including fund size, age, organizational structure, limited partner base, investment-stage focus, and sector specialization, are documented primarily to provide contextual insight into the structure and maturity of the market in which these practices are developing.

The findings reveal a distinctive pattern of early-stage ESG integration. ESG considerations are not entirely absent from venture capital decision-making; rather, their incorporation is selective and uneven. Some firms report considering ESG factors at different stages of the investment process, and ESG concerns can, in some cases, affect investment selection and rejection decisions. At the same time, more formal mechanisms for ESG implementation, including structured frameworks, systematic measurement, risk monitoring, reporting requirements, and specialist support, remain comparatively limited. This suggests that ESG in Saudi venture capital is beginning to acquire decision relevance but has not yet become fully institutionalized within investment routines.

A further feature of this emerging pattern is its governance-first and strategically driven character. Governance considerations receive substantially greater attention than social and environmental factors, while the principal motivations for ESG adoption are associated with value creation, risk mitigation, long-term performance, and partners' values rather than regulatory pressure or investor mandates. Taken together, these findings suggest that ESG integration in the Saudi VC market is

developing primarily through strategic and internally motivated processes rather than through formal external requirements.

The study therefore contributes to the sustainable finance and entrepreneurship literature by providing evidence on how ESG develops within an emerging private-capital ecosystem where venture capital expansion and sustainability-oriented institutional transformation are occurring simultaneously. More specifically, it identifies an early form of ESG integration that is governance-led, selectively relevant to investment decisions, strategically motivated, and operationally constrained. This pattern provides insight into the transitional stage through which ESG may move from general awareness to more systematic incorporation into private investment practices. The findings also offer practical implications for venture capital investors, entrepreneurs, and policymakers seeking to strengthen ESG-related capabilities, data infrastructure, and decision-making frameworks within the Saudi venture capital ecosystem.

The remainder of the paper is organized as follows. Section 2 outlines the institutional context of venture capital and ESG in Saudi Arabia and reviews the related literature. Section 3 presents the conceptual framework and discusses VC firm characteristics. Section 4 identifies the research gaps and introduces the research questions. Section 5 describes the data and methodology. Section 6 reports the empirical findings. Section 7 discusses the results and concludes the paper, highlighting limitations and directions for future research.

Institutional Setting and Literature Review

In recent years, Saudi Arabia has witnessed significant growth in its VC ecosystem, driven by national initiatives such as Vision 2030 and the strategic support of key institutions like the Public Investment Fund (PIF) and the General Authority for Small and Medium Enterprises. These efforts aim to diversify the economy, stimulate entrepreneurship, and position the Kingdom as a regional hub for innovation and investment. As a result, the entrepreneurial and VC sectors are rapidly expanding in scale and influence (Alqahtani, 2022). Among the key factors that have further enhanced the attractiveness of the VC ecosystem are the initiatives from the Ministry of Communication and Information Technology (MCIT) and the National Technology Development Program (NTDP) that have strengthened the ecosystem infrastructure, positioning startups and VC investors as key drivers of the transformation (SVC & Magnitt, Saudi Arabia Venture Capital Report, 2024).

Currently, the ecosystem is witnessing remarkable growth. In 2024, the Kingdom accounted for 31% of total VC deals in the MENA region, up from 29% in 2023, representing total funding of \$750M across 178 deals, maintaining its position as a regional leader capturing 40% of the MENA region's total capital funding (SVC & Magnitt, Saudi Arabia Venture Capital Report, 2024). VC funding in Saudi Arabia is mainly concentrated in the E-commerce/retail and Fintech industry, accounting for 33% and 31%, respectively, of the country's capital deployed in 2024 (SVC & Magnitt, Saudi Arabia Venture Capital Report, 2024). This upward development is expected to continue, with greater participation from VC investors and an increasing number of startup creations, further establishing

Saudi Arabia as a vibrant hub for innovation and investment in the region.

However, despite this progress, limited evidence exists on how ESG considerations are incorporated into venture capital investment practices in emerging markets such as Saudi Arabia. While global attention to ESG integration in private equity and venture capital has increased, less is known about whether ESG considerations extend beyond general awareness to become embedded in investment screening, evaluation, and post-investment practices, or whether they are sufficiently influential to affect actual investment decisions. Moreover, little is known about which ESG dimensions receive greater attention and whether emerging ESG practices are driven primarily by strategic considerations, investor and regulatory pressures, or other institutional forces. The Saudi venture capital market provides a particularly relevant setting in which to examine these issues, given the simultaneous expansion of its entrepreneurial ecosystem and the broader sustainability-oriented transformation associated with Vision 2030. Accordingly, this study examines the extent and pattern of ESG integration among Saudi VC firms, with particular attention to its role across the investment process, the relative emphasis placed on environmental, social, and governance considerations, and the motivations and constraints shaping its development.

Globally, an increasing body of literature has explored the relationship between finance and sustainability, supporting the role that financial instruments—particularly VC—play in advocating young, innovative companies whose investment activities contribute meaningfully to the three core pillars of sustainable development: economic growth, environmental protection, and social advancement (Gucciardi, 2024). Through the value-added services they offer to their portfolio companies, VC firms not only directly influence the growth and performance of these startups but also indirectly contribute to broader economic development. This impact is reflected in job creation, wealth generation, and the support of innovative firms that address environmental and social challenges in the regions where they operate (Liu et al., 2023; Zhang et al., 2024).

The current literature documents that VC is not only a financing mechanism but also a strategic enabler of sustainability, capable of influencing economic development, environmental innovation, and social responsibility. Gucciardi (2024) empirically demonstrates that higher levels of VC activity are positively associated with better performance on the Sustainable Development Goals (SDGs), particularly through economic growth, job creation, and the adoption of green technologies. Zhang et al. (2024) find that VCs with prior business experience significantly enhance the CSR performance of their portfolio firms, mainly when they invest at early stages or hold substantial equity stakes. Similarly, Bocken (2015) argues that venture capitalists contribute not only capital but also strategic guidance and network support, helping startups scale sustainable business models that deliver triple bottom line outcomes—economic, environmental, and social. Accordingly, Environmental sustainability is proven to enhance startups' attractiveness to investors. Voß et al. (2024) show that startups perceived as environmentally sustainable receive higher willingness-to-invest (WTI) from private investors than their non-sustainable counterparts, indicating a clear financial incentive for entrepreneurs to adopt green practices. Similarly, Hegeman & Sørheim (2021) support the previous

argument by highlighting how corporate venture capital (CVC) investment in cleantech startups is driven by both environmental motives and strategic objectives such as maintaining competitiveness and accessing green innovation. Gangi et al. (2021) also discuss the evolution of VC within the broader context of responsible investment, noting that an increasing number of limited partners (LPs) are demanding ESG-aligned investment strategies. This aligns with broader global trends shifting from viewing sustainability as a cost to recognizing it as a driver of value and competitive advantage.

Building on the established link between VC and sustainable development, a growing body of research has turned its attention specifically to the relationship between VC investment and ESG performance. Several recent studies suggest that VC can play a constructive role in advancing ESG outcomes within portfolio companies. For instance, Wang et al. (2023) demonstrate that VC-backed firms in China show improved ESG performance, particularly when supported by state-owned venture funds. The presence of VC investors enhances corporate governance practices, transparency, and sustainability reporting. In terms of integrating ESG factors into investment decisions, Botsari & Lang's 2020 study offers the first survey-based analysis of how ESG considerations are integrated into VC and business angel (BA) investment practices. The findings confirm that ESG investing is increasingly becoming mainstream, with a majority of both VC general partners and business angels reporting some level of ESG integration in their investment decision-making. Ethical and social responsibility motives were found to be key drivers, alongside a growing desire to influence positive change in investee companies. Similarly, survey-based research by Wang (2024) in the UK context finds that VCs are increasingly integrating ESG considerations into their investment screening and monitoring processes, driven by both risk management and long-term value creation motives.

Although prior research provides growing evidence on the role of venture capital in promoting sustainability and on the motivations underlying ESG integration, less is known about how ESG becomes embedded in venture capital investment practices within emerging and rapidly evolving markets. This study addresses this gap by examining the extent and pattern of ESG integration in Saudi venture capital, with particular attention to how ESG considerations enter investment practices, the relative emphasis placed on the three ESG dimensions, and the motivations and constraints shaping their adoption.

Theoretical Perspectives on ESG in Venture Capital:

Understanding why venture capitalists may be inclined to allocate capital to ESG-oriented startups can be informed by several complementary theoretical perspectives that shed light on the strategic, institutional, and ethical motivations underlying ESG integration in investment decision-making.

From a strategic perspective, stakeholder and agency theories provide useful insights into why VC firms may view ESG considerations as economically relevant. Stakeholder theory (Freeman, 2010) suggests that firms addressing the needs of multiple stakeholders, such as customers, employees, and regulators, are more likely to build trust, long-term value, and sustained growth (Grewatsch & Kleindienst, 2017), which aligns with venture capitalists' pursuit of sustainable returns. Agency

theory complements this view by emphasizing how ESG practices, particularly those related to transparency and governance, can reduce information asymmetry and mitigate investment risk, which are central concerns in early-stage investing. Enhanced transparency around ESG performance has been shown to reduce uncertainty and perceived risk (Lueg et al., 2019), while integrating ESG criteria into business models can boost investor confidence and lower perceived investment risk, potentially translating into valuation premiums during funding rounds (Mansouri & Momtaz, 2022).

Beyond these strategic drivers, institutional theory highlights how growing regulatory demands, limited partners' expectations, and global sustainability norms exert pressure on VC firms to align with ESG standards. In this context, investing in ESG-conscious startups may serve as a means for VC firms to gain legitimacy within the broader financial and societal ecosystem (Prakash, 2001). Such pressures are particularly salient in emerging markets, where ESG practices are still evolving and where global investment norms increasingly shape local entrepreneurial finance practices.

Finally, from a moral decision-making perspective, ethical considerations may also play a role in shaping VC investment behavior. Hofmann et al. (2008) argue that investors' moral values influence their support for companies with sustainable practices, as such investments align with personal values and provide moral satisfaction. Consequently, some venture capitalists may direct capital toward startups with stronger ESG performance not only for strategic or legitimacy reasons, but also to align their investment choices with their ethical principles.

Conceptual Framework: ESG Integration in Venture Capital Investment Practices:

Prior research suggests that ESG integration in investment decision-making may develop progressively as sustainability considerations become incorporated into investors' routines and decision processes. Awareness represents an important foundation for this development, as investors must first recognize the relevance of environmental, social, and governance considerations before translating them into investment practices. As ESG norms spread out through investment communities, yet, awareness may not immediately result in systematic implementation. Investors may initially consider ESG selectively before developing more formal mechanisms for screening, evaluation, monitoring, and engagement.

In venture capital, this distinction is particularly relevant because ESG considerations can potentially enter at different stages of the investment process. They may impact initial screening and due diligence, influence investment evaluation or rejection decisions, and subsequently shape engagement with and monitoring of portfolio companies. More advanced integration may involve formal ESG policies, defined performance metrics, reporting requirements, action plans, and access to specialized ESG expertise. Accordingly, the extent of ESG integration can be understood not only in terms of whether venture capitalists recognize ESG considerations, but also in terms of the degree to which those considerations become decision-relevant and embedded in formal investment practices.

The three dimensions of ESG may also develop unevenly. Governance considerations are often

particularly important to venture capital investors because of their immediate relevance to transparency, accountability, investor protection, and the governance of young and rapidly growing firms (Masud et al., 2025). Social considerations, including employee welfare, diversity, and stakeholder relationships, may become increasingly relevant as ventures grow, while environmental considerations may vary in significance according to industry and investment context. ESG integration may therefore exhibit a differentiated pattern in which particular dimension becomes incorporated into investment decisions earlier or more extensively than others.

The development of these practices may also reflect different underlying motivations and institutional pressures. Investors may adopt ESG considerations for strategic reasons, including value creation, risk mitigation, reputational benefits, and long-term performance, or in response to external influences such as LP expectations, regulatory developments, and broader sustainability norms (Eccles et al., 2017; Cheng et al., 2022; Lange & Banadaki, 2024; Zhang et al., 2024). From an institutional perspective, ESG practices may therefore emerge through a combination of coercive pressures associated with regulation, normative expectations within the investment community, and cognitive changes in how investors understand the relevance of sustainability to investment decision-making.

The organizational and investment characteristics of VC firms provide additional context for understanding variation in ESG practices. Prior research suggests that larger and more established VC firms may have greater resources and more formalized investment processes, while the composition of limited partners can expose funds to different ESG expectations (Gompers & Lerner, 2001; Eccles et al., 2017). Investment horizon and stage may also matter because longer investment horizons increase exposure to long-term risks, while early-stage investors have greater opportunities to influence governance structures and strategic priorities within portfolio firms (Lim, 2012; Nguyen et al., 2020; Zhang et al., 2024).

Other organizational features may similarly shape the context in which ESG practices develop. Independent and corporate VC firms can differ in their strategic objectives and exposure to parent-company or LP expectations (Dushnitsky & Lenox, 2006; Maula et al., 2013; Hegeman & Sørheim, 2021), while sector specialization and geographical investment focus can affect the position of particular ESG issues (Botsari & Lang, 2020; Meles, 2021). Characteristics such as investment strategy and management-team diversity may further contribute to differences in how firms perceive sustainability-related risks and opportunities (Lange & Banadaki, 2024; Meles, 2021). In the present study, these characteristics are therefore used primarily to contextualize the participating VC firms and the environment in which ESG practices are developing.

Taken together, this framework conceptualizes ESG integration as an evolving process in which awareness may progressively translate into consideration within investment decisions and, ultimately, into more formalized screening, monitoring, and engagement practices. It therefore provides the basis for examining not only whether Saudi venture capital firms engage with ESG, but also the extent and

pattern of that integration, the relative importance of its environmental, social, and governance dimensions, and the motivations and constraints associated with its development.

Research Gap and Research Questions

Although research increasingly recognizes the relevance of ESG considerations to venture capital and sustainable investment, less is known about how ESG integration develops in practice within emerging venture capital markets. In particular, existing evidence provides limited insight into whether ESG remains primarily a matter of awareness or is translated into decision-relevant practices across the investment process, and whether such practices become formalized through systematic screening, measurement, monitoring, and engagement. Understanding this distinction is particularly relevant in emerging VC ecosystems, where sustainability expectations may be developing alongside the institutions and organizational capabilities needed to implement them.

Saudi Arabia provides a relevant setting in which to examine this emerging process. The rapid expansion of its venture capital ecosystem has occurred alongside broader institutional and sustainability-oriented transformation, yet ESG practices within private entrepreneurial finance remain relatively unexplored. Therefore, this study examines its extent and pattern within Saudi venture capital, including the degree to which ESG considerations enter investment practices, the relative prominence of environmental, social, and governance dimensions, and the motivations and constraints associated with their adoption.

Given the emerging nature of the phenomenon and the relatively small population of active VC firms, the study adopts an exploratory and descriptive research design. Accordingly, the analysis is guided by the following research questions:

- RQ1: To what extent, and at what stages of the investment process, are ESG considerations incorporated into the investment practices of venture capital firms operating in Saudi Arabia?
- RQ2: How do Saudi venture capital investors prioritize environmental, social, and governance considerations in their investment practices?
- RQ3: What motivations and constraints shape the development of ESG integration among venture capital firms operating in Saudi Arabia?

These research questions are addressed using descriptive survey evidence to identify the extent and pattern of ESG integration within the Saudi venture capital ecosystem.

Data and Methodology

Data Source and Sample Construction:

To examine the extent and pattern of ESG integration within the Saudi venture capital market, data were collected through a structured online survey targeting active VC firms operating in Saudi Arabia. The survey was informed by prior research examining ESG practices in private equity and venture

capital, particularly Botsari and Lang (2020), and was designed to capture both the incorporation of ESG considerations into investment practices and the organizational context in which these practices are developing.

A total of 21 valid responses were obtained from VC firms operating in Saudi Arabia. The sample includes firms with varying organizational and investment characteristics, including differences in size, age, investment horizon, investment stage, strategic orientation, and sector focus. Given the specialized nature of the Saudi VC market and the exploratory purpose of the study, the data are used to identify descriptive patterns in ESG integration rather than to make population-wide estimates or causal inferences.

The survey consists of three main sections:

- **Section One (VC Firm Characteristics):**

Captures organizational and investment characteristics, including firm size and age, type of limited partners (LPs), investment horizon, investment stage, investment strategy, gender diversity, organizational structure, industry specialization, and geographical investment focus. These characteristics provide contextual information about the participating firms and the market environment in which ESG practices are developing.

- **Section Two (ESG Integration in Investment Practices):**

Examines the extent to which ESG considerations are incorporated into VC investment practices. The questions capture different aspects and stages of integration, including the consideration of ESG factors in investment decisions, ESG-related policies and frameworks, ESG screening and due diligence, the use of ESG performance measures, investment rejection based on ESG concerns, ESG risk monitoring, and post-investment engagement and reporting. Respondents rate applicable items using a three-point scale (1 = Not at all, 2 = To some extent, and 3 = To a great extent). Responses are examined both at the individual-item level and through a composite ESG Integration Score. The item-level analysis is particularly important for identifying where ESG considerations enter investment practices and the extent to which such practices have become formalized, while the composite score provides a summary indicator of the overall level of ESG integration across participating firms.

- **Section Three (Motivations and Constraints):**

Examines the factors associated with the development of ESG practices and the challenges that may limit their implementation. Respondents identify applicable motivations for considering ESG, such as value creation, risk mitigation, long-term performance, LP expectations, regulatory pressures, and alignment with organizational or partners' values. They also identify constraints, including difficulties in ESG measurement, limited internal expertise and resources, data limitations, implementation costs, and concerns regarding investment returns. Respondents may

select multiple options and are also provided with an open-ended opportunity to identify additional motivations or constraints not included among the predefined responses.

Methodology

Consistent with the exploratory nature of the study, the empirical analysis is primarily descriptive and is designed to identify the extent and pattern of ESG integration. ESG integration is examined at two complementary levels. First, individual survey items are analyzed to identify how ESG considerations manifest across different investment practices and stages, including screening and due diligence, investment evaluation and rejection, and post-investment monitoring and engagement. This enables the analysis to distinguish between general consideration of ESG and more systematic forms of integration.

Second, a composite ESG Integration Score is calculated from the relevant items in Section 2 to provide an overall summary of ESG integration for each participating VC firm. The composite measure complements the item-level analysis. Firms with similar overall scores may differ in where and how ESG considerations enter their investment practices.

The environmental, social, and governance dimensions are also examined separately to identify their relative prominence within VC investment practices. Motivations and constraints also are summarized using frequencies and response distributions to characterize the factors associated with ESG adoption and the barriers to more systematic implementation.

Results and Discussion

1. Extent and Pattern of ESG Integration in VC Investment Practices:

Research Question 1 examines the extent to which ESG considerations are incorporated into the investment practices of Saudi venture capital firms and the stages at which such considerations become relevant. The results indicate that ESG integration remains at an early stage overall, but they also reveal considerable variation across specific investment practices. The composite ESG Integration Score has a mean of 1.62 (SD = 0.469), indicating that systematic ESG integration remains relatively limited across the sample. However, the individual survey items provide a more differentiated picture of how ESG is beginning to enter VC investment practices.

The strongest evidence of ESG incorporation appears in practices directly associated with investment consideration. The highest-rated item concerns the stages of the investment process at which ESG factors are considered (mean = 2.24), followed by the extent to which ESG factors are considered in investment decisions (mean = 1.90). Importantly, respondents also reported instances in which investments had been rejected because of ESG concerns (mean = 1.76). Although these values do not indicate widespread or systematic integration, they suggest that ESG considerations have moved beyond general awareness for at least some firms and have begun to acquire relevance to actual investment evaluation and selection.

In contrast, practices associated with the formalization and systematic management of ESG remain considerably less developed. Requirements for ESG reporting from portfolio companies (mean = 1.57), ESG-related staff training (mean = 1.57), ESG risk monitoring (mean = 1.52), formal action planning to address ESG deficiencies (mean = 1.48), and the use of formal ESG frameworks (mean = 1.33) all received relatively low scores. Engagement of external ESG experts recorded the lowest mean (1.29).

Taken together, these results reveal an important distinction between the decision relevance and the formalization of ESG. ESG considerations appear to be entering investment practices before firms have developed the organizational infrastructure required to evaluate and monitor them systematically. Saudi VC firms therefore cannot be characterized simply as either ESG adopters or non-adopters. Rather, the evidence points to a selective and uneven form of integration in which ESG may influence investment consideration and, in some cases, investment rejection, while formal measurement, monitoring, reporting, and specialist support remain comparatively weak.

Additionally, Table 2 represents the firm-level results which reinforce this interpretation. Only two firms demonstrate relatively high levels of ESG integration, with mean scores of 2.89 and 2.78, while nine fall within the moderate range and ten within the low range. This dispersion suggests that ESG development is not occurring uniformly across the Saudi VC ecosystem. A small group appears to be moving toward more structured integration, while much of the market remains characterized by selective or emerging practices.

These findings suggest that the Saudi VC market is experiencing a transitional stage of ESG development. Awareness and selective consideration appear to precede the establishment of formal ESG systems. This distinction is particularly important in an emerging private-capital market, where investment practices may evolve more rapidly than the supporting measurement, reporting, and professional infrastructure.

Table (1): ESG Integration Levels among Venture Capital Firms

Dimension / ESG Practice	N	Mean	SD	Rank
ESG in Investment Decision-Making		1.97		
Stages of the investment process where ESG factors are considered	21	2.24	0.944	1
Extent to which ESG factors influence investment decisions	21	1.90	0.768	2
Rejection of investments due to ESG concerns	21	1.76	0.995	3
ESG Monitoring and Reporting		1.55		
ESG reporting requirements for portfolio companies	21	1.57	0.676	4=
Reporting ESG performance to LPs and stakeholders	21	1.52	0.680	6=
ESG Formalization and Infrastructure		1.44		
ESG training provided to staff	21	1.57	0.746	4=
Formal ESG risk assessment and monitoring	21	1.52	0.680	6=
Formal action plans to address ESG deficiencies	21	1.48	0.873	8
Use of a formal ESG scoring framework	21	1.33	0.730	9
Engagement with external ESG experts/consultants	21	1.29	0.463	10
Overall ESG Integration Score	21	1.62	—	—

Table (2): Summary of ESG Integration Levels across Venture Capital Firms

ESG Category	N	Highest Mean	Lowest Mean	Group Mean	Category Level
1. High ESG Integration	2	2.89	2.78	2.84	High
2. Moderate ESG Integration	7	2.33	1.78	1.94	Moderate
3. Low ESG Integration	11	1.67	1.0	1.35	Low

2. Prioritization of ESG Dimensions:

Research Question 2 examines the relative prominence of environmental, social, and governance considerations within VC investment practices. The results reveal a clear hierarchy. Governance was identified as the most important ESG dimension by 57.1% of respondents, compared with 28.6% for social considerations and only 14.3% for environmental considerations.

This finding suggests that the emerging pattern of ESG integration in Saudi venture capital is distinctly governance-led. Governance issues such as transparency, accountability, board structures, and investor protection are closely connected to the traditional monitoring and oversight functions performed by venture capital investors. Their prominence may therefore reflect not only growing sustainability awareness but also their immediate relevance to managing investment risk in young and rapidly developing firms.

The lower prioritization of social and particularly environmental considerations indicates that the three ESG pillars are not developing at the same pace. Social considerations appear to have gained some recognition, whereas environmental factors remain substantially less prominent in VC evaluation. This may partly reflect the sectoral composition of the Saudi VC market and the challenges associated with evaluating environmental performance in early-stage companies, where standardized sustainability information and measurement systems may be limited.

The resulting pattern is therefore better characterized as governance-first ESG integration rather than broad and balanced ESG adoption. This finding is important because it demonstrates that the development of ESG in an emerging VC ecosystem may not follow a uniform trajectory across environmental, social, and governance dimensions.

Table (3): ESG Factors Weighted Index and Final Importance Ranking

ESG Dimension	Normalized Score	Weighted Index	Final Importance Rank
Governance	0.57	0.78	1 (Highest)
Social	0.29	0.44	2
Environmental	0.14	0.21	3

3. Motivations and Constraints Shaping ESG Integration:

Research Question 3 examines the motivations and constraints associated with the development of ESG practices among Saudi venture capital firms. The results suggest that ESG engagement is currently driven more strongly by internal strategic considerations than by external institutional pressures.

Value creation and risk mitigation were the most frequently identified motivations, each reported by 42.9% of respondents. Long-term financial performance and partners' personal values followed, each at 38.1%. By comparison, regulatory pressure was identified by 23.8% of respondents and investor demand by only 14.3%.

This distribution is revealing. ESG adoption among the participating firms appears to be associated primarily with perceptions of its strategic and economic usefulness rather than with formal compliance requirements or strong investor mandates. The importance attached to value creation, risk mitigation, and long-term performance suggests that some Saudi VCs are beginning to interpret ESG through an investment rather than exclusively ethical or compliance-oriented lens. At the same time, the relatively limited role attributed to regulation and investor demand indicates that external pressures have not yet become the dominant mechanism driving ESG integration.

The constraints reported by respondents help explain why this strategic interest has not yet translated into more systematic implementation. Difficulty in measuring ESG information was the most frequently reported challenge (57.1%), followed by limited internal resources and expertise (47.6%). Data collection and analysis costs, concerns about potential negative effects on returns, and limited conviction regarding ESG relevance were each identified by 28.6% of respondents. Lack of corporate ESG disclosure and scarcity of attractive ESG-aligned opportunities were each reported by 23.8%.

These findings reveal an important tension. Firms recognize potential economic and strategic benefits from ESG, particularly in relation to value creation and risk management, but often lack the information, expertise, and organizational infrastructure required to translate those perceived benefits into systematic investment practices. The constraints therefore complement the findings for Research Question 1: weak formalization does not necessarily indicate an absence of interest in ESG; rather, it may reflect a capability and infrastructure gap between recognizing ESG's investment relevance and implementing it consistently.

Viewed from an institutional perspective, the combination of relatively strong strategic motivations and comparatively weak regulatory and investor pressures suggests that ESG integration in Saudi VC is currently developing more through voluntary and internally motivated processes than through coercive external forces. This may help explain why adoption remains heterogeneous across firms and why formalization is still limited.

Table (4): Key Motivations Driving ESG Integration among Saudi VC Firms

Category	Motivation Factor	% Yes
Internal Motivation	Value creation	42.9%
	Risk mitigation	42.9%
	Long-term financial performance	38.1%
	Personal values of partners	38.1%
External Motivation	Regulatory pressure	23.8%
	Investor demand	14.3%
	International alignment	9.5%
	Other	9.5%

Table (5): Key Challenges Limiting ESG Implementation among Saudi VC Firms

Category	Motivation Factor	% Yes
	Difficulty measuring ESG	57.1%
Technical Challenges	Limited ESG expertise / resources	47.6%
Economic Challenges	Cost concerns of ESG evaluation	28.6%
Market Challenges	Low disclosure / limited ESG deals	23.8%

4. Contextual Profile of the Participating VC Firms:

The organizational and investment characteristics of the participating firms provide useful context for interpreting these ESG patterns. Most firms had operated for five to ten years (61.9%), and independent VC firms represented 61.9% of the sample. Fund sizes varied considerably, although 38.1% managed between SAR 100–500 million and 33.3% reported assets under management exceeding SAR 1 billion. Most firms demonstrated an early-stage orientation, with 52.4% primarily investing at the early stage, while 47.6% reported investment horizons exceeding seven years.

The sample also reflects a strong orientation toward technology-related investments, particularly FinTech, SaaS/Enterprise Solutions, and AI /Deep Tech, while capital sources remain relatively concentrated among high-net-worth individuals. These characteristics provide important context for interpreting ESG development in the Saudi VC market, particularly the relatively limited institutional pressure identified among the motivations for ESG integration. They are not, however, treated as determinants of ESG adoption in the present exploratory analysis.

Table (6): Firm Characteristics and Investment Profiles (Multi-Panel)

VC Firm Age	Organizational Structure	Total AUM
<5 yrs (19%)	Independent VC (61.9%)	<100M (14.3%)
5–10 yrs (61.9%)	Corporate Arm (9.5%)	100–500M (38.1%)
>10 yrs (19%)	Angel Network (9.5%)	500M–1B (14.3%)
	Family Office (9.5%)	>1B (33.3%)
	Other (9.5%)	

Ticket Size	Primary Capital Source	Investment Horizon
<1M (9.5%)	Institutional (23.8%)	<3 yrs (9.5%)
1–5M (47.6%)	Government (14.3%)	3–7 yrs (42.9%)
5–10M (23.8%)	HNWI (42.9%)	>7 yrs (47.6%)
>10M (19%)	Corporate (9.5%)	
	Family Offices (9.5%)	

Investment Strategy	Most Targeted Sectors	Moderately Targeted
Financial (38.1%)	FinTech (85.7%)	Logistics (61.9%)
Strategic+Financial (47.6%)	SaaS (76.2%)	E-commerce (57.1%)
Impact (14.3%)	AI (71.4%)	

Least Targeted	Regional Focus	Women Participation
HealthTech (38.1%)	Saudi (28.6%)	Yes (71.4%)
EdTech (38.1%)	GCC (9.5%)	No (28.6%)
CleanTech (38.1%)	MENA (38.1%)	
AgriTech (28.6%)	Global (23.8%)	
Other (23.8%)		

Discussion

The findings reveal ESG integration in Saudi venture capital as an emerging and uneven process. Although the overall ESG integration score indicates that systematic incorporation remains limited, the variation across individual practices provides a more informative picture. ESG considerations appear relatively more evident in practices connected to investment decision-making, while formal mechanisms for measurement, monitoring, reporting, and specialist support remain less developed. This suggests that ESG is beginning to acquire practical relevance within investment decisions before becoming fully institutionalized within VC firms' investment systems. Such a pattern is consistent with the gradual development of ESG practices documented in private equity and venture capital markets, where informal consideration may precede more systematic integration as investor capabilities and market infrastructure develop (Revelli & Viviani, 2015; Botsari & Lang, 2020; Barber et al., 2021; Wang, 2024).

This distinction between decision relevance and formalization is important for understanding the stage of ESG development in the Saudi VC market. The findings suggest that ESG considerations are present in investment decisions. Some firms report considering ESG within investment evaluation and, in some cases, rejecting investment opportunities because of ESG concerns. At the same time, comparatively limited use of formal ESG frameworks, risk-monitoring systems, action plans, staff training, and external ESG expertise indicates that these practices have not yet been supported by an equally developed organizational infrastructure. ESG integration in this context can therefore be characterized as selective, sustainability considerations are beginning to enter investment judgment, but their application remains less standardized and systematic. This distinction helps explain why an emerging market may demonstrate meaningful ESG activity even when aggregate measures of formal adoption remain relatively modest.

A second important feature of this emerging pattern is the uneven development of the three ESG dimensions. Governance considerations receive substantially greater priority than social and environmental factors. This governance-first orientation is consistent with evidence from emerging-market settings, where transparency, accountability, investor protection, and organizational oversight often represent the most immediately relevant sustainability-related concerns for investors (Gillan et al., 2021; Masud et al., 2025). Governance may be particularly present in venture capital because investors engage closely with young firms whose governance structures, internal controls, and accountability mechanisms are still developing. In the Saudi context, the prominence of governance may also be reinforced by the broader institutional emphasis on corporate governance and

accountability. Social considerations occupy an intermediate position, while environmental issues remain considerably less prominent, suggesting that ESG integration is not developing evenly across its three pillars. The relatively limited emphasis on environmental considerations may reflect the characteristics of early-stage investing, sectoral exposure, and the difficulty of obtaining standardized environmental information from young portfolio companies.

The motivations reported by respondents provide further insight into why ESG integration has developed in this particular form. Value creation and risk mitigation emerge as the leading motivations, followed by long-term financial performance and partners' values, whereas regulatory pressure and investor demand play comparatively smaller roles. This pattern further suggests that ESG adoption is currently driven more strongly by perceived strategic relevance and internal commitment than by external pressure. It is consistent with prior research showing that investors increasingly associate material sustainability considerations with risk management, resilience, and long-term value creation (Khan et al., 2016; Lins et al., 2017), as well as evidence of strategically motivated ESG integration within private capital markets (Botsari & Lang, 2020; Gangi et al., 2021; Wang, 2024).

At the same time, the constraints identified by respondents help explain why strategic interest in ESG has not yet translated into more systematic implementation. Difficulties in measuring ESG-related information and limited internal resources and expertise are the two most frequently reported barriers, while data costs, uncertainty regarding financial consequences, and limited conviction regarding ESG relevance constitute additional obstacles. These findings point to a capability gap between recognizing the potential investment relevance of ESG and possessing the tools, information, and expertise required to operationalize it consistently. This may explain the relatively weak formalization observed in the ESG-practice measures: firms may perceive ESG as strategically useful while still lacking the infrastructure needed to translate that perception into systematic measurement, monitoring, and portfolio engagement.

Taken together, the findings identify a distinctive pattern of ESG development within Saudi venture capital: integration is governance-oriented, selectively relevant to investment decisions, strategically motivated, but weakly formalized. From an institutional perspective, the relatively stronger role of internal strategic motivations and partners' values, compared with regulatory and investor pressures, is consistent with an emerging process in which normative and cognitive influences may currently be more visible than coercive pressures. Rather than ESG practices being primarily imposed through formal mandates, some Saudi VC firms appear to be incorporating them because they increasingly perceive their relevance to investment risk and value creation. The substantial variation across firms further suggests that this process remains uneven rather than uniformly institutionalized across the market.

This pattern provides an understanding of ESG development in an emerging private-capital ecosystem. The Saudi evidence suggests that the transition toward ESG-integrated venture investing

may first acquire relevance within investor judgment and selected investment decisions, particularly around governance and risk, before being translated into more formal organizational routines. The challenge for the next stage of development is therefore not simply to increase ESG awareness, but to convert emerging decision relevance into consistent capabilities for ESG assessment, measurement, monitoring, and engagement.

Conclusion

This study examines the extent and pattern of ESG integration within venture capital investment practices in Saudi Arabia. The findings indicate that ESG integration is emerging but remains uneven. Importantly, the evidence suggests that ESG considerations have begun to enter investment decision-making and, for some firms, can influence investment selection, yet the formal systems required to support consistent ESG assessment, monitoring, and reporting remain comparatively underdeveloped. The emerging pattern is also distinctly governance-focus, with governance considerations receiving greater priority than social and environmental factors. At the same time, ESG engagement appears to be driven primarily by strategic considerations, particularly value creation and risk mitigation, while measurement difficulties and limited internal expertise constrain more systematic implementation.

The findings have several practical implications. For VC firms, the principal challenge is not simply increasing ESG awareness, but translating emerging consideration of ESG into more consistent investment routines. Firms could begin by identifying a limited set of material ESG issues relevant to their investment strategy and incorporating them systematically into screening, and due diligence. The relatively weak formalization observed in the study also points to opportunities to strengthen post-investment practices through balanced ESG indicators, portfolio monitoring, and follow-up procedures. Importantly, such mechanisms need not initially involve complex ESG systems. For early-stage investors, relatively simple and decision-relevant tools may provide a practical bridge between informal consideration and systematic integration.

The findings also have implications for organizational capability within VC firms. Difficulties in ESG measurement and limited internal resources and expertise emerged as the most prominent barriers to implementation. This suggests that developing technical capability may be as important as promoting ESG awareness. Training investment professionals to identify material ESG risks, developing sector-relevant assessment tools, improving access to ESG information, and drawing on external expertise could help firms translate strategic interest in ESG into routine investment practices. Such capacity - building may be particularly valuable for smaller or developing VC firms for which adopting sophisticated ESG frameworks may be costly.

For entrepreneurs and portfolio companies, the governance-first pattern provides a practical indication of the ESG issues currently most prominent to VC investors. Young firms seeking venture financing may benefit from establishing credible governance practices early, including transparent decision structures, accountability mechanisms, and appropriate policies and controls.

The results also provide useful implications for policymakers and ecosystem-support institutions. The combination of strategic interest in ESG with substantial measurement and capability constraints suggests that the next stage of ESG development may benefit more from enabling infrastructure than from awareness -building alone. Practical guidance tailored to venture capital, standardized ESG indicators for early-stage companies, training for fund managers, and mechanisms that improve the availability and comparability of portfolio-company ESG information could reduce the implementation costs identified by respondents. Given that regulatory pressure and investor demand currently appear less influential than internal strategic motivations, policy initiatives could initially focus on facilitating credible and usable ESG practices rather than assuming that formal mandates alone will generate meaningful integration.

More broadly, the findings suggest an opportunity to connect Saudi Arabia's expanding venture capital ecosystem with its wider sustainability and economic transformation objectives. The governance-first orientation identified in this study provides a foundation on which broader ESG capabilities can develop. Strengthening the mechanisms through which environmental and social risks and opportunities are assessed—while preserving the investment relevance of ESG—could support a transition from selective consideration toward more balanced and systematic integration. In this sense, the policy challenge is not simply to encourage greater ESG adoption, but to create the information, capabilities, and institutional conditions that enable sustainability considerations to become useful inputs into venture investment decisions.

Future research could build on these findings in several ways. Larger and longitudinal samples could examine whether ESG practices become more formalized as the Saudi VC ecosystem develops and could test whether organizational characteristics such as fund size, age, LP composition, investment stage, and sector specialization are systematically associated with different patterns of ESG integration. Comparative research across GCC and other emerging venture capital markets could determine whether the governance -first and strategically driven pattern identified here is specific to Saudi Arabia or reflects a broader path of ESG development in emerging private -capital markets. Finally, interviews, case studies, and process -tracing approaches could follow individual investments from screening and due diligence through investment committee decisions and post-investment monitoring, providing a deeper understanding of when and how ESG considerations become consequential for venture investment decisions.

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