

Linking sustainability to NGO performance: the role of entrepreneurial orientation

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Abstract

This study explores the mediating role of Entrepreneurial Orientation (EO) in linking Triple Bottom Line (TBL) sustainability practices—economic, social, and environmental—to the performance of international non-governmental organizations (NGOs) operating in Jordan. Drawing upon the Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT), data were collected through structured surveys from 516 NGO employees, with 444 valid responses analyzed using Structural Equation Modeling (SEM). The results show that economic sustainability directly enhances NGO performance, while social and environmental sustainability exert indirect effects through EO. EO was found to partially mediate the impact of economic sustainability and fully mediate the effects of social and environmental dimensions. The model explains 62% of the variance in performance outcomes, affirming EO as a critical internal capability. These findings contribute to the growing literature on sustainability and strategic capabilities in nonprofit contexts and offer practical guidance for NGOs and policymakers seeking to integrate sustainability with adaptive, entrepreneurial approaches to enhance long-term mission performance.

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1. Introduction

In recent years, escalating concerns over environmental degradation, widening social inequalities, and persistent economic instability have prompted global institutions and development actors to prioritize sustainability as a strategic imperative [1]. Non-governmental organizations (NGOs) have become central to addressing these challenges, particularly in developing regions where they provide essential services, advocate for social justice, and support progress toward the Sustainable Development Goals (SDGs) [2]. As expectations grow among donors, regulators, and communities, NGOs are increasingly encouraged to adopt a holistic sustainability approach grounded in the Triple Bottom Line (TBL), which emphasizes economic, social, and environmental dimensions. However, NGOs operating in resource-constrained contexts often confront significant challenges—including limited funding stability, political volatility, and institutional fragmentation—that complicate the

integration of sustainability practices into their operations [3], [4]. Such pressures create an operational environment where sustainability is both necessary and difficult to achieve, intensifying the strategic demands placed on NGOs.

A core difficulty faced by NGOs in such environments is the reliance on external funding, which may undermine organizational autonomy, disrupt long-term planning, and constrain operational adaptability [5]. This highlights the need for NGOs to cultivate internal strategic competencies that enable them to navigate environmental uncertainty while achieving sustainable performance outcomes [6]. While substantial evidence links sustainability practices to improved performance in private-sector organizations [1], much less is known about how such practices influence nonprofit entities.

Prior studies tend to assume a direct relationship between sustainability and performance [8], [9], overlooking the role of internal organizational capabilities in shaping this link—an omission particularly relevant to NGOs operating under resource limitations [10], [11]. Moreover, much of the existing scholarship is rooted in corporate or Western contexts, limiting its applicability to nonprofit organizations in developing countries with distinct institutional constraints [12]. This gap indicates the need for conceptual frameworks that better reflect the institutional and resource realities of NGOs working in developing-country settings.

Recent advances in organizational research suggest that EO may serve as a crucial internal capability through which NGOs translate sustainability commitments into enhanced performance. While EO in the business sector typically promotes financial gains through innovation and proactive strategies, in NGOs it supports legitimacy-building, service innovation, and adaptive resilience in the face of scarce resources and uncertain environments [2], [12]. In nonprofit settings, EO shifts from profit-driven ambition to mission-driven adaptability, enabling NGOs to redesign service mechanisms, mobilize alternative resources, and maintain stakeholder confidence during periods of instability. This distinction positions EO as a potentially important mechanism for enabling NGOs to operationalize sustainability principles.

The Resource-Based View (RBV) [15] and Dynamic Capabilities Theory (DCT) [13], [14] provide a suitable theoretical foundation for examining this mechanism. EO—characterized by innovativeness, proactiveness, and risk-taking [16]—is increasingly viewed as a dynamic capability that enables organizations to reconfigure resources, experiment with new service models, and respond effectively to shifting stakeholder demands [3]. Evidence from developing-country contexts such as Ghana, Lebanon, and Vietnam shows that organizations with strong EO tend to adapt more successfully to donor pressures, regulatory changes, and funding instability [4], [7], [15]. These insights reinforce the argument that EO functions differently in NGOs than in profit-driven firms, making its mediating role in the sustainability–performance link a relevant area for investigation. In such challenging contexts, EO enhances not only innovative capacity but also strategic agility and crisis responsiveness, strengthening NGOs’ ability to navigate dynamic development landscapes.

Despite growing interest, empirical studies examining EO within nonprofit contexts remain limited [18], [19]. NGOs in countries such as Jordan face persistent structural challenges—including chronic funding constraints, donor dependency, and institutional discontinuities—that further complicate efforts to integrate sustainability practices into organizational strategy [20], [21]. These contextual constraints raise important questions about how sustainability practices shape NGO performance and whether EO enhances or conditions these effects.

In response, this study examines whether economic, social, and environmental sustainability practices contribute to NGO performance and assesses the mediating role of EO in this relationship. By grounding the analysis in the TBL framework and the RBV–DCT perspective, the study seeks to explain how NGOs in resource-scarce environments convert sustainability commitments into operational advantages [16]. This perspective emphasizes that sustainability-driven improvements in performance are unlikely to materialize unless NGOs possess the internal capacities required to strategically exploit such commitments. This approach contributes to a more comprehensive understanding of the sustainability–performance nexus by emphasizing the importance of internal organizational capabilities rather than assuming a solely direct relationship.

The study makes several contributions. Theoretically, it extends sustainability–performance research by introducing EO as a mediating dynamic capability within nonprofit organizations. Contextually, it provides empirical evidence from Jordan, a setting where NGOs play a vital developmental role but face significant operational constraints. Practically, the study offers insights for NGO leaders, donors, and policymakers seeking to strengthen organizational resilience through entrepreneurial competencies. By demonstrating how EO enables NGOs to embed sustainability principles into their strategic and operational processes, the study identifies pathways for improving effectiveness, long-term viability, and SDG alignment. As NGOs work toward long-term SDG alignment, developing capabilities for cross-sector collaboration, organizational learning, and social innovation becomes essential to overcoming institutional limitations and embedding sustainability principles into core operations [2], [4].

2. Literature review

2.1 The triple bottom line and non-governmental organization performance

The TBL framework advances the idea that organizational success should be evaluated across three interrelated dimensions—economic viability, social equity, and environmental responsibility—rather than through traditional performance metrics centered solely on outputs or donor satisfaction. This broader perspective is particularly relevant for NGOs operating in resource-constrained and institutionally fragile settings, where accountability pressures are high and funding stability is uncertain [22]. Within such contexts, economic sustainability requires NGOs to adopt transparent practices, diversify funding sources, and strengthen internal governance structures, thereby reducing over-dependence on single donors and enhancing long-term resilience [8], [23].

Social sustainability, a core pillar of TBL, emphasizes legitimacy, fairness, and the capacity to generate trust among stakeholders. NGOs functioning in fragile states such as Lebanon and Vietnam often face heightened expectations for equitable service delivery, participatory decision-making, and community empowerment [4], [15]. Consequently, their performance is increasingly tied to these relational and social dimensions rather than purely operational outputs. Recent evidence indicates that performance measurement systems linked with internal stakeholder trust significantly enhance NGO effectiveness, highlighting that accountability mechanisms operate not only as technical tools but also as social enablers of legitimacy and collective action [6].

Environmental sustainability, once peripheral in NGO operations, has become a strategic priority due to accelerating climate-related risks and rising expectations from communities and international donors. However, the capacity of NGOs to contribute meaningfully to environmental outcomes is often constrained by limited resources, fragmented institutional environments, and the absence of integrated sustainability strategies. Scholars argue that superficial adherence to environmental aspects of TBL offers limited benefits and that full integration requires alignment between organizational systems, operational processes, leadership development, and learning structures [12], [13]. Such alignment enables NGOs to embed sustainability principles into their day-to-day operations rather than allowing these commitments to remain symbolic or fragmented.

Recent theoretical and empirical developments suggest that EO can help NGOs translate TBL principles into measurable performance outcomes. Studies in for-profit contexts demonstrate that EO—comprising innovation, proactiveness, and calculated risk-taking—acts as a mediating capability that converts strategic intent into sustainable development outcomes and improved performance [11]. Although these studies focus on SMEs, the underlying logic extends to NGOs, particularly those operating in volatile environments where adaptive capabilities are essential. EO strengthens NGOs' ability to experiment with new service delivery mechanisms, leverage limited resources, and respond proactively to shifting donor, regulatory, and community expectations, thereby enhancing the operationalization of sustainability practices.

The integration of EO into sustainability processes is supported by both the Resource-Based View (RBV) and Natural Resource Dependence Theory (NRDT). These theories posit those internal capabilities—especially those related to innovation and resource orchestration—enhance organizational adaptability and strengthen the

operationalization of sustainability frameworks such as the TBL [2], [28]. This is especially relevant in developing countries, where NGOs frequently encounter constraints related to natural resource access, funding scarcity, and institutional uncertainty [23]. Under such conditions, the ability to creatively recombine and deploy resources becomes a defining factor in determining whether sustainability ambitions translate into tangible performance outcomes.

Furthermore, emerging research highlights the complementary role of digital innovation, green knowledge acquisition, and collaborative learning systems in reinforcing TBL adoption. Evidence across nonprofit and SME settings shows that organizations integrating digital tools, data systems, and environmentally oriented knowledge bases are better positioned to achieve both environmental and financial sustainability outcomes [6], [22], [24], [28]. These digital and knowledge-based capabilities enhance the transformative potential of EO, allowing NGOs to embed sustainability more deeply into their strategic and operational processes.

Ultimately, the effective adoption of the TBL framework in NGOs is not merely a normative expectation but a strategic imperative. Deep integration—rather than symbolic or compliance-driven adoption—requires the synergy of entrepreneurial competencies, digital capabilities, stakeholder trust, and cross-sector collaboration. NGOs that cultivate these internal capabilities are more likely to convert their sustainability commitments into enhanced performance, stronger legitimacy, and improved alignment with national and global development agendas.

2.2 Entrepreneurial orientation within nonprofit organizations

While research on EO has largely focused on private companies, recent studies emphasize its growing relevance for nonprofits, particularly NGOs operating in resource-scarce and volatile environments. Businesses that are innovative, proactive, and willing to take risks are better able to handle uncertainty and create social value [14]. Increasingly, scholars argue that these same EO dimensions are essential for nonprofits, where mission fulfilment depends on adaptability, creativity, and the capacity to mobilize limited resources in uncertain institutional settings. The expanding role of NGOs in sustainable development highlights the importance of EO in boosting strategic responsiveness and overall performance. For nonprofits, EO is crucial for achieving the SDGs [2], [17] because it fosters improved agility, responsiveness to stakeholders, and organizational learning, all essential skills for addressing the complex, multifaceted nature of the goals.

To increase stakeholder trust and legitimacy, entrepreneurial nonprofits frequently employ innovative service delivery methods like digital platforms, eco-social innovations, and cross-sector collaborations [24]. According to a study [11], SEM analysis revealed a significant mediating effect of EO on the relationship between sustainability practices and firm performance within volatile emerging markets. According to reference [28], green knowledge acquisition and resource orchestration capability strengthen the positive relationship between green EO and both economic and environmental performance, thus offering a model for NGOs striving for operational and ecological resilience. These findings suggest that EO enhances an organization's ability to translate sustainability commitments into tangible outcomes by strengthening internal capabilities for innovation, knowledge absorption, and resource deployment.

Reference [23] emphasizes that EO effectiveness is deeply influenced by natural resource dependence—particularly in sectors like agriculture—underscoring the need for NGOs to innovate not just structurally, but operationally, in contexts marked by environmental scarcity. Their application of the NRDT and RBV aligns closely with this study's theoretical foundation. This connection reinforces the idea that EO operates as a context-sensitive capability whose benefits may be amplified or constrained depending on local environmental and institutional pressures.

In fragile and high-risk settings, EO becomes a strategic enabler. Reference [15] found that NGOs in Lebanon, guided by entrepreneurial reflexes such as agile decision-making and cross-sectoral coordination, were more effective in managing crisis interventions during COVID-19 and the Syrian refugee influx. Similarly, Reference [21] identified NGOs as key moderators of entrepreneurial outcomes within Lebanon's emerging circular

economy, particularly by facilitating social value creation in resource-constrained contexts. Together, these findings illustrate how EO strengthens NGOs' capacity to navigate crises, mobilize partnerships, and sustain mission-driven operations under volatile conditions.

Reference [12] validates EO's performance impact in Ghanaian SMEs, reinforcing its cross-sectoral and cross-national relevance. Complementing this, reference [17] shows that synergizing EO with environmental sustainability orientation leads to long-term organizational resilience—principles that are highly applicable to NGOs localizing SDGs under institutional volatility. Even though these studies arise from diverse sectors, they collectively emphasize the universality of EO as a capability that enhances resilience and long-term performance in uncertain environments.

Despite its importance, EO in the nonprofit context remains under-theorized. Reference [14] argues that the field must move beyond conceptual borrowing from the private sector and develop tailored models that link EO with nonprofit-specific outcomes such as donor engagement, mission fidelity, and public accountability. Particularly in developing countries like Jordan, where NGOs are constrained by donor dependency, regulatory fragility, and institutional fragmentation, EO emerges as a vital internal competency [20]. This highlights the need for empirical research that clarifies how EO functions within nonprofits and how it interacts with sustainability practices in shaping performance.

This research posits EO as the mediating factor linking economic, social, and environmental sustainability practices to NGO performance. Considering the RBV and DCT, entrepreneurial orientation (EO) is an adaptable internal capacity, not simply a strategic approach that allows NGOs to successfully implement sustainability initiatives amid instability [13], [28]. By conceptualizing EO as a dynamic capability, this study positions it as a mechanism through which NGOs convert sustainability ambitions into enhanced effectiveness, operational resilience, and mission achievement.

2.3 Entrepreneurial orientation as a mediator between triple bottom line and performance

A common approach to sustainability in nonprofits is the TBL, which strives to achieve equilibrium across economic, social, and environmental dimensions. A comprehensive examination of how sustainability practices translate into quantifiable results for NGOs is absent from current research. While TBL has been extensively examined in SMEs and corporate contexts [7], [11], [12], its translation into nonprofit outcomes remains underexplored. This gap underscores the need to investigate how internal capabilities such as EO can act as a bridging mechanism. Studies suggest a mediating role for EO in the link between sustainability and performance; EO itself is viewed as a crucial strategic organizational competence [14], [28]. This suggests that EO may represent the internal lever through which NGOs convert sustainability ambitions into tangible and measurable impacts, particularly in contexts where straightforward resource-based advantages are limited.

Research suggests that employing EO enables nonprofits to modify their internal procedures to comply with external sustainability requirements. For example, Aftab et al. [11] demonstrate that EO mediates the relationship between ambidexterity and both sustainable engagement and performance in Pakistani SMEs. By extension, NGOs may rely on EO to reconfigure internal practices, enabling them to transform sustainability commitments into operational outcomes. This capacity to translate external pressures into internal action is especially important for nonprofits that depend on stakeholder legitimacy and donor accountability, requiring them to innovate processes even when financial slack is minimal. Organizations can better handle external pressures by using internal strengths like innovation, flexibility, and calculated risks; this mediating role is supported by the RBV and DCT, which suggest that success depends not just on resources, but also on the ability to use and adapt them effectively [13], [28]. This capacity is especially evident in EO's work with resource-constrained nonprofits, where innovation and proactive approaches substitute for limited resources, enabling NGOs to pursue diverse goals without additional financial slack [6], [23]. Thus, EO acts as a strategic conversion mechanism, transforming TBL principles into concrete performance outcomes even under institutional volatility.

In addition, EO integrates TBL principles into operational strategies, creating more coherent and scalable solutions. The challenge for NGOs is to meet their objectives while remaining accountable to donors and sustaining their operations. Through EO, abstract sustainability commitments are converted into quantifiable outcomes [7], [17]. Premadasa et al. [2] reinforce this by showing that social entrepreneurial orientation in social enterprises enhances triple-bottom-line outcomes, offering insights applicable to nonprofit organizations. Similarly, Yaghoubi Farani et al. [17] confirm that EO, when combined with sustainability orientation, improves both economic and environmental performance in agriculture. Studies show [28] that a strong green entrepreneurial approach, coupled with effective green knowledge acquisition and resource management, leads to significantly better environmental and financial results. These findings collectively illustrate that EO not only mediates but also amplifies the effect of sustainability practices by providing nonprofits with the agility, learning capacity, and innovative behaviors required to implement the TBL effectively.

Comparative evidence from developing regions highlights this mediating logic. In Lebanon, NGOs play a moderating role in the success of social enterprises [21]; in Ghana, EO dimensions significantly improve SME performance under volatile conditions [12]; and in Palestine, trust and accountability enhance NGO effectiveness [6]. Together, these studies underscore that focusing on EO within sustainability-focused strategies is particularly impactful in fragile institutional environments [15], [21]. Fragile environments heighten the need for entrepreneurial approaches, positioning EO as a stabilizing internal capability that supports sustained TBL implementation despite uncertainty, resource shortages, and structural gaps.

As Song and Wang [25] show, entrepreneurial orientation—including its environmentally sustainable form—indirectly enhances organizational resilience by fostering innovation. This aligns with Deku et al. [12], who demonstrate that EO dimensions (innovation, risk-taking, proactiveness) strengthen financial performance in volatile African SME environments, a pattern mirrored in NGOs navigating uncertainty. This is important for NGOs working on sustainability during crises such as the COVID-19 pandemic. As highlighted in Yadav et al. [24], combining EO, ESG metrics, and digital tools improves environmental performance. These insights extend EO's relevance beyond conventional financial outcomes, showing it is integral to resilience, environmental responsiveness, and adaptive capacity—attributes central to NGO sustainability performance.

Without EO, NGOs risk adopting sustainability symbolically rather than substantively. EO functions as a dynamic mediator that enables nonprofits to reconfigure scarce resources, institutionalize TBL principles, absorb external pressures, and sustain performance under conditions of financial, institutional, and environmental uncertainty.

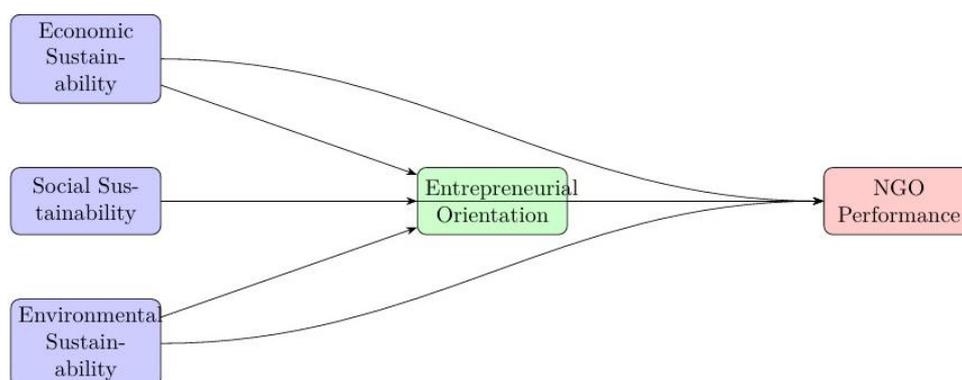


Figure 1. Conceptual framework diagram

Figure 1 shows how entrepreneurial orientation (EO) may act as a bridge between NGOs' sustainability efforts—economic, social, and environmental—and their overall performance.

2.4 Theoretical framework

NGOs, traditionally rooted in humanitarian and social missions, are increasingly being evaluated through the lens of sustainability performance across the economic, social, and environmental dimensions—collectively

known as the TBL. Originally conceptualized for the private sector, the TBL framework is now critical in assessing the holistic impact of NGOs, particularly in contexts where institutional fragmentation, financial dependency, and environmental volatility converge [2], [6], [19]. This shift reflects a broader transition in development practice, where NGOs are expected not only to deliver social value but also to demonstrate economic efficiency and environmental responsibility in a manner comparable to private and public-sector organizations.

In resource-constrained regions such as the Middle East and South Asia, the operational realities of NGOs often preclude balanced performance across all three TBL dimensions. While social impact has historically been emphasized, economic sustainability (e.g., funding resilience, cost-efficiency) and environmental stewardship (e.g., waste reduction, eco-innovation) are increasingly prioritized by donors, regulators, and communities alike [5], [7], [10]. As a result, NGOs are under mounting pressure to integrate all three pillars of sustainability into their operational models—a transformation that challenges conventional linear, sector-specific strategies developed during the Millennium Development Goals (MDG) era [20]. These pressures require NGOs to adopt more sophisticated internal strategies that can reconcile competing TBL demands under volatile economic and institutional conditions.

Empirical work has demonstrated the viability of such integration. For instance, in developing Asia, [7] show that entrepreneurial orientation strengthens the link between sustainability practices and performance, especially in socially conscious enterprises. Reference [26] further confirms that green innovation is not merely an environmental consideration but a financial performance driver in the nonprofit financial sector. Such evidence supports the notion that economic and environmental sustainability are not peripheral but central to NGO viability. Collectively, these studies illustrate that the TBL can only produce meaningful outcomes when supported by internal capabilities that enable organizations to innovate, coordinate resources, and respond dynamically to external pressures.

The operationalization of TBL in NGOs is further complicated by a lack of standardized performance metrics and regulatory guidance, particularly in countries with weak institutional environments [4], [10]. Consequently, NGOs often adopt context-specific sustainability strategies. In Lebanon, for example, studies found that NGOs embedded in crisis response settings adaptively reallocate resources to balance short-term impact with long-term sustainability, showcasing an implicit TBL model in action [15], [21]. In Jordan, NGOs face donor-driven pressures to demonstrate measurable environmental and economic outcomes, often through externally imposed ESG standards [1], [9]. These examples highlight that TBL implementation is not uniform but shaped by contextual constraints, making internal adaptive capabilities even more important for meaningful performance outcomes.

In this regard, the sustainability–performance link in NGOs requires dynamic internal capabilities—such as entrepreneurial orientation and organizational learning—to overcome external constraints. The RBV supports this notion, arguing that internal resources and competencies, when aligned with strategic intent, can yield sustainable competitive advantages even under resource scarcity [13], [27]. Within NGOs, these capabilities substitute for limited financial and physical resources by enabling efficient resource orchestration, innovation in service delivery, and improved stakeholder responsiveness.

Moreover, empirical studies increasingly point to the relevance of sustainability orientations, such as environmental sustainability orientation (ESO), in shaping how NGOs interpret and act upon natural resource dependencies [23]. Dias et al. [23] emphasize that NGOs, like small agricultural enterprises, can use strategic orientations to mitigate the adverse effects of environmental uncertainty. Such adaptations become especially crucial in sectors like health, education, and agriculture—core domains of NGO service delivery in the Global South. This suggests that sustainability orientations influence not only environmental outcomes but also the capacity of NGOs to maintain mission-focused operations under conditions of ecological and institutional instability.

In summary, TBL-based sustainability practices are increasingly indispensable to NGO legitimacy, funding continuity, and social mission fulfillment. However, their success depends not merely on adoption but on internal integration through capabilities like EO, innovation, and learning. Accordingly, this study positions EO as a central mechanism through which NGOs can operationalize sustainability principles across the TBL dimensions and convert them into enhanced performance outcomes, especially in resource-constrained and institutionally volatile settings [11], [17], [28].

2.5 Conceptual framework and hypotheses development

Grounded in the RBV and DCT, this study develops a conceptual framework to explore how NGOs translate sustainability practices into performance outcomes through the mediating role of entrepreneurial orientation (EO). These theories suggest that organizations derive sustainable competitive advantages by leveraging internal capabilities that are valuable, rare, inimitable, and non-substitutable—attributes embedded within EO dimensions such as innovativeness, proactiveness, and risk-taking [13], [27]. In nonprofit settings, these capabilities compensate for chronic funding constraints and institutional volatility, enabling NGOs to recombine scarce resources and sustain mission-driven operations.

TBL as a multidimensional construct

Sustainability practices in this framework are aligned with the TBL approach, encompassing three dimensions:

- **Economic Sustainability:** Emphasizes financial resilience, efficient resource allocation, and operational flexibility [1], [8].
- **Social Sustainability:** Highlights inclusive service delivery, stakeholder equity, and community trust-building [4], [6].
- **Environmental Sustainability:** Focuses on eco-conscious practices, climate mitigation, and sustainable innovation [21], [23].

These dimensions operate synergistically rather than in isolation. Empirical studies show that their integration enhances NGO legitimacy, donor confidence, and social license to operate, particularly in politically fragile and donor-dependent regions [7], [9], [22]. This multidimensional view highlights that sustainability performance emerges from the combined influence of these pillars, reinforcing the need for organizational capabilities that can manage their inherent trade-offs.

Entrepreneurial orientation (EO) as a mediating capability

EO is conceptualized here not just as a behavioral tendency but as a dynamic internal capability that enables NGOs to transform sustainability inputs into actionable, performance-oriented strategies. This framing aligns with RBV and DCT, which posit that strategic capabilities—not resources alone—determine whether organizations can adapt to changing environments and operationalize sustainability practices.

Empirical evidence from Aftab et al. [11] and Baquero [28] affirms that EO mediates the relationship between sustainability and organizational performance, particularly in contexts of resource scarcity and institutional volatility. Case evidence from Lebanon further illustrates how entrepreneurial reflexes—including agile decision-making and inter-sector coordination—allowed NGOs to remain resilient during refugee and pandemic crises [15], [21]. These findings collectively indicate that EO provides the adaptive mechanisms—innovation, learning, and proactive resource orchestration—through which NGOs can translate TBL commitments into coherent operational outcomes.

NGO performance outcomes

NGO performance in this model encompasses:

- Mission fulfillment and societal impact
- Financial viability and donor retention
- Stakeholder satisfaction and transparency

This multifaceted understanding is validated by empirical work from [12], [17], and [25], all of whom confirm EO and sustainability practices as antecedents to both financial and mission-aligned outcomes in nonprofits and SMEs. By integrating EO into this framework, this study conceptualizes NGO performance as the product of both external sustainability mandates and internal adaptive capabilities, configured to address the unique challenges of resource-limited and institutionally fragile contexts.

3. Hypotheses development

3.1 Direct effect of triple bottom line practices on NGO performance

The TBL framework posits that organizational performance emerges from the combined impact of economic, social, and environmental sustainability practices. For NGOs, these practices improve mission alignment, operational effectiveness, and stakeholder legitimacy—three critical determinants of performance in resource-constrained environments.

Economic sustainability enhances financial stability, reduces donor dependency, and strengthens internal governance, thereby enabling NGOs to maintain operations and deliver services more efficiently [3].

Social sustainability expressed through stakeholder engagement, equitable service delivery, and community empowerment—builds legitimacy and trust, which are central to NGO impact and visibility [7].

Environmental sustainability reinforces donor expectations, aligns with global sustainability frameworks, and improves NGOs' credibility in climate-sensitive communities, which can translate into stronger performance outcomes [9], [28].

Accordingly, the following hypotheses are proposed:

- **H1:** Economic sustainability practices positively affect NGO performance.
- **H2:** Social sustainability practices positively affect NGO performance.
- **H3:** Environmental sustainability practices positively affect NGO performance.

3.2 Effect of triple bottom line practices on entrepreneurial orientation

Sustainability practices are also expected to shape an NGO's internal strategic posture. The RBV and DCT suggest that organizational capabilities emerge from sustained interaction between external demands and internal learning processes. Each dimension of sustainability can therefore stimulate EO by altering how NGOs interpret opportunities, manage constraints, and respond to institutional pressures.

Economic sustainability encourages forward-looking resource allocation, long-term planning, and calculated risk-taking—behaviors consistent with entrepreneurial thinking. Financial resilience provides strategic space for experimentation and innovation.

Social sustainability requires NGOs to design inclusive, community-driven solutions. Such engagement often promotes innovation, co-creation, and proactive adjustments to program design, thereby strengthening EO-related behaviors.

Environmental sustainability, particularly in climate-sensitive contexts, compels NGOs to adopt new service models, adopt eco-innovations, and develop green capabilities, reinforcing the innovativeness and proactiveness central to EO [27], [9].

These theoretical linkages support the following hypotheses:

- **H4:** Economic sustainability practices positively influence entrepreneurial orientation.
- **H5:** Social sustainability practices positively influence entrepreneurial orientation.
- **H6:** Environmental sustainability practices positively influence entrepreneurial orientation.

Collectively, these hypotheses reflect the view that complex sustainability demands encourage NGOs to adopt entrepreneurial postures to maintain relevance, adaptability, and effectiveness in dynamic institutional

environments [28]. Figure 2 presents a conceptual framework illustrating EO as a mediator between sustainability practices (economic, social, environmental) and NGO performance.

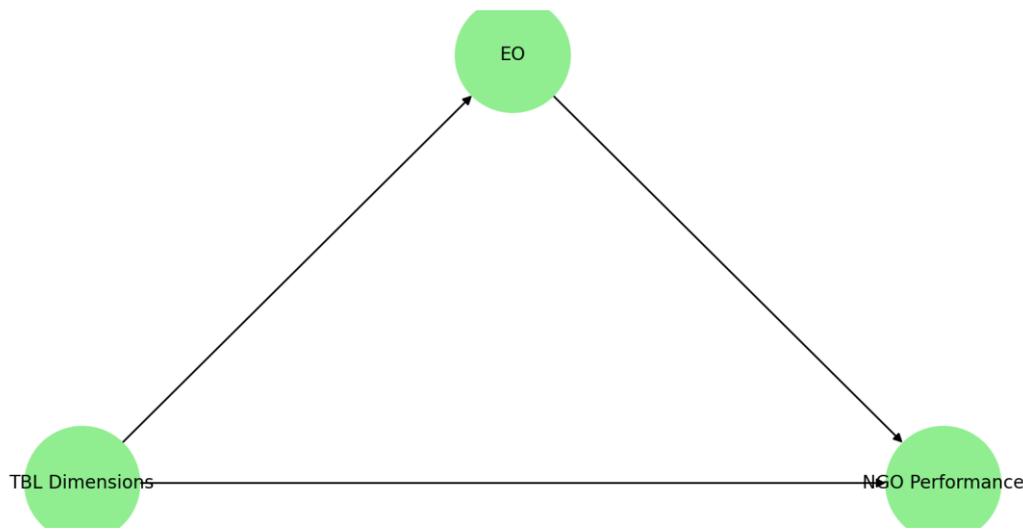


Figure 2. Conceptual mediation framework

3.3 Direct effect of entrepreneurial orientation on NGO performance

EO is increasingly recognized as a core strategic capability that enhances organizational functioning in nonprofit settings. Unlike firms where EO typically drives profit-oriented innovation, in NGOs it supports mission fulfilment, donor responsiveness, and operational agility—attributes essential for sustaining performance under volatile institutional and funding conditions. EO encourages proactive problem-solving, innovative service delivery, and calculated risk-taking, enabling NGOs to navigate uncertainty and mobilize limited resources effectively [14]. Empirical evidence from fragile environments such as Lebanon and Vietnam shows that NGOs exhibiting entrepreneurial reflexes are better equipped to respond to crises, coordinate with diverse stakeholders, and maintain program continuity [15], [17]. These enhanced capabilities translate into improved societal impact, greater accountability, and stronger donor confidence.

Accordingly, the following hypothesis is proposed:

H7: Entrepreneurial orientation positively affects NGO performance.

3.4 Mediating role of entrepreneurial orientation

The RBV and DCT posit that organizations achieve superior outcomes not merely through resource possession but through their ability to reconfigure, integrate, and deploy those resources strategically. EO embodies these dynamic capabilities by enabling NGOs to interpret sustainability demands, innovate operational processes, and align program activities with shifting institutional pressures [11], [13]. In this sense, EO functions as a mechanism that internalizes sustainability principles and translates them into coherent, performance-enhancing practices.

In the context of NGOs, this mediating mechanism is particularly significant. Economic sustainability may provide the financial and procedural foundations for innovation, but its full effect on performance is realized when organizations possess entrepreneurial capacities to leverage such stability toward enhanced service models. Similarly, social and environmental sustainability often impose complex, multi-stakeholder demands that require adaptive learning, cross-sector collaboration, and innovative solutions—behaviors facilitated by EO rather than traditional administrative routines. Evidence from SMEs and emerging-market nonprofits indicates that EO transforms sustainability commitments into tangible impact by stimulating new service delivery pathways, improving resource orchestration, and fostering proactive engagement with beneficiaries and donors [18], [23], [28]. Given these theoretical and empirical insights, EO is expected to mediate the relationship between sustainability practices and NGO performance across all three TBL dimensions:

- H8:** EO mediates the relationship between economic sustainability practices and NGO performance.
H9: EO mediates the relationship between social sustainability practices and NGO performance.
H10: EO mediates the relationship between environmental sustainability practices and NGO performance.

Collectively, these hypotheses constitute a comprehensive framework in which EO operates as the internal capability enabling NGOs to convert sustainability practices into meaningful and measurable performance outcomes, particularly in resource-constrained and institutionally dynamic settings.

4. Research method

4.1 Research design

This study employs a quantitative, cross-sectional, and explanatory research design grounded in the positivist paradigm. A deductive approach was used to test theoretically derived relationships among triple bottom line (TBL) sustainability practices, entrepreneurial orientation (EO), and NGO performance. Structural equation modeling (SEM) was selected due to its ability to examine complex causal relationships and model multiple latent constructs simultaneously [20], [21]. To enhance analytical rigor, the study applied bootstrapped confidence intervals to test indirect effects, allowing more robust mediation inferences under non-normal data conditions.

4.2 Population and sampling

The study targeted managerial, supervisory, technical, and program-level employees across 86 international NGOs operating in Jordan. These organizations represent sectors such as humanitarian relief, education, health, environmental management, and community support. Purposive sampling was used to ensure that respondents possessed sufficient knowledge of their organization's sustainability practices and strategic orientation [16], [27].

A total of 516 questionnaires were distributed, and 444 valid responses were obtained after excluding incomplete or patterned responses (response rate = 86%). This sample size meets the recommended SEM requirement of at least 200–300 cases for stable model estimation [29]. The unit of analysis was the individual respondent, consistent with nonprofit research where staff perceptions serve as accurate reflections of organizational practices and capabilities [30], [31].

4.3 Data collection

Primary data were collected using a structured questionnaire adapted from validated scales in the sustainability, EO, and nonprofit performance literature. A pilot test with 30 NGO professionals helped assess clarity, contextual fit, and measurement appropriateness. Minor revisions were implemented to increase contextual sensitivity and reduce the risk of misinterpretation arising from scales originally developed in corporate settings. All items were measured on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), enabling the capture of subtle variations in sustainability and entrepreneurial behaviors.

4.4 Measurement of constructs

All constructs were operationalized as reflective latent variables and measured using multi-item scales:

- Economic Sustainability: Items reflected financial transparency, funding diversification, and operational efficiency [17].
- Social Sustainability: Items measured stakeholder engagement, community empowerment, and fairness in service delivery [13].
- Environmental Sustainability: Items assessed ecological practices, waste reduction, and green innovation [7].
- Entrepreneurial Orientation (EO): Innovativeness, proactiveness, and risk-taking were measured based on established EO literature [14], [27].

- NGO Performance: Mission fulfillment, financial health, adaptability, and stakeholder satisfaction were evaluated using nonprofit performance indicators [6], [15].

The multi-dimensional reflective structure ensured comprehensive construct coverage appropriate for SEM.

4.5 Validity and reliability

Exploratory factor analysis (EFA) confirmed unidimensionality, followed by confirmatory factor analysis (CFA) using AMOS v28 to establish construct validity. All standardized factor loadings exceeded 0.60.

- Composite reliability (CR): 0.78–0.91
- Average variance extracted (AVE): > 0.50
- Cronbach's alpha: > 0.70

These results support convergent and discriminant validity in line with SEM standards [17]. Harman's single-factor test and procedural controls (anonymity, randomization of items) were applied to mitigate common method bias, ensuring the robustness of perceptual data.

4.6 Data analysis technique

Data were analyzed using AMOS v28 following a two-stage SEM procedure. The measurement model was first assessed, followed by testing the structural model containing all direct and mediating effects.

Model fit was evaluated using:

- Comparative Fit Index (CFI)
- Tucker–Lewis Index (TLI)
- Root Mean Square Error of Approximation (RMSEA)
- Chi-square/df ratio (χ^2/df)

Interpretation followed SEM literature guidelines [6]. Bootstrapped mediation (5,000 resamples) was employed to estimate indirect effects, strengthening causal inference. The selection of AMOS aligns with methodological norms in Middle Eastern and developing-country nonprofit research due to its capacity for covariance-based SEM and full mediation assessment [17].

5. Results

5.1 Descriptive statistics

Table 1 presents the descriptive statistics for the core constructs: economic, social, and environmental sustainability, EO, and NGO performance. The mean values indicate generally strong perceptions of sustainability integration and entrepreneurial behavior across NGOs operating in Jordan. This pattern aligns with recent evidence suggesting that nonprofits in resource-constrained settings increasingly embed sustainability and EO practices to compensate for institutional volatility and funding uncertainty.

Economic sustainability recorded a relatively high mean ($M = 5.42$, $SD = 0.88$), indicating a strong emphasis on efficient resource utilization, diversified funding portfolios, and financial transparency. Such practices are increasingly recognized as essential for organizational stability and long-term resilience in nonprofit contexts [11], [23].

Social sustainability ($M = 5.18$, $SD = 0.91$) also scored favorably, reflecting the centrality of stakeholder engagement, community empowerment, and equitable service provision. These dimensions are widely associated with enhanced legitimacy and effective mission execution in NGOs [6], [13], [15].

Environmental sustainability ($M = 5.02$, $SD = 0.94$) showed moderately high perceptions, suggesting that ecological considerations and environmentally conscious operational practices are gaining traction. This rise reflects a stronger alignment between NGO activities and global environmental priorities, especially as many organizations expand climate-related programming and eco-innovation initiatives [32].

Entrepreneurial orientation demonstrated a strong overall mean ($M = 5.36$, $SD = 0.85$), indicating that NGOs increasingly adopt proactive, innovative, and risk-engaged behaviors. EO is often associated with heightened adaptability, improved responsiveness to emerging challenges, and enhanced opportunity recognition in dynamic environments [11], [12], [17]. The consistently high EO score highlights the growing strategic shift among NGOs toward more agile, opportunity-focused operational models.

NGO performance achieved the highest mean score ($M = 5.48$, $SD = 0.81$), suggesting strong perceptions of mission accomplishment, operational adaptability, stakeholder satisfaction, and financial stability. This finding reinforces the complementary role of sustainability practices and EO in enhancing both social impact and organizational effectiveness [25], [28], [31].

Table 1. Descriptive statistics for key constructs

Construct	Mean	SD	Min	Max
Economic sustainability	5.42	0.88	2.9	7.0
Social sustainability	5.18	0.91	2.7	7.0
Environmental sustainability	5.02	0.94	2.5	7.0
Entrepreneurial orientation	5.36	0.85	3.1	7.0
NGO performance	5.48	0.81	3.0	7.0

To complement the descriptive results, two figures illustrate the distribution of construct means:

- Figure 3 presents bar chart illustrating the mean values for the five constructs
- Figure 4 presents radar chart comparing TBL sustainability dimensions, EO, and NGO performance

These visual summaries provide an intuitive comparison of sustainability and performance levels across surveyed NGOs.

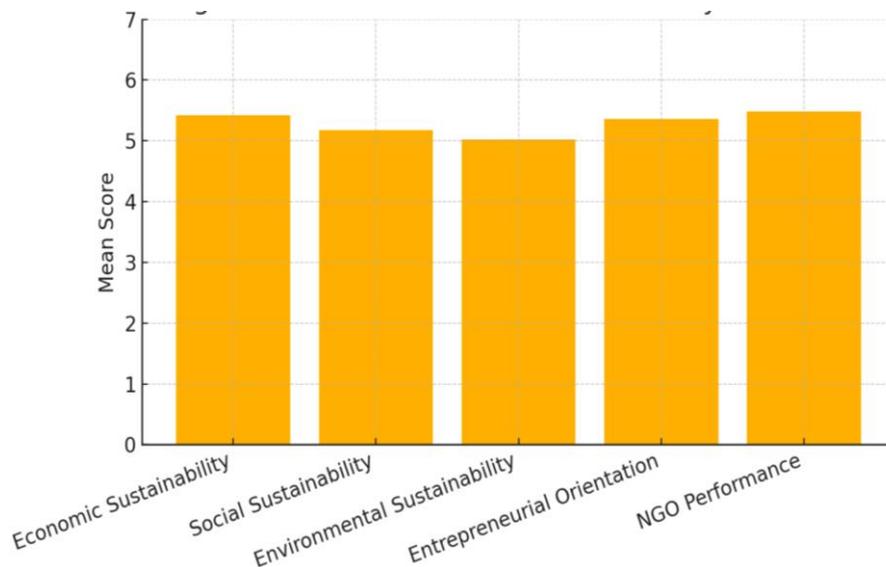


Figure 3. Bar chart of mean scores for key constructs

Figure 3 shows the mean scores for the five key constructs measured: Economic Sustainability, Social Sustainability, Environmental Sustainability, Entrepreneurial Orientation, and NGO Performance. These visualizations provide a clear comparative view of how each dimension is perceived across the sample NGOs.

Figure 4 provides a radar chart comparing the three sustainability dimensions alongside Entrepreneurial Orientation and NGO Performance. This allows a quick visual inspection of the multidimensional balance in NGO practices and outcomes.

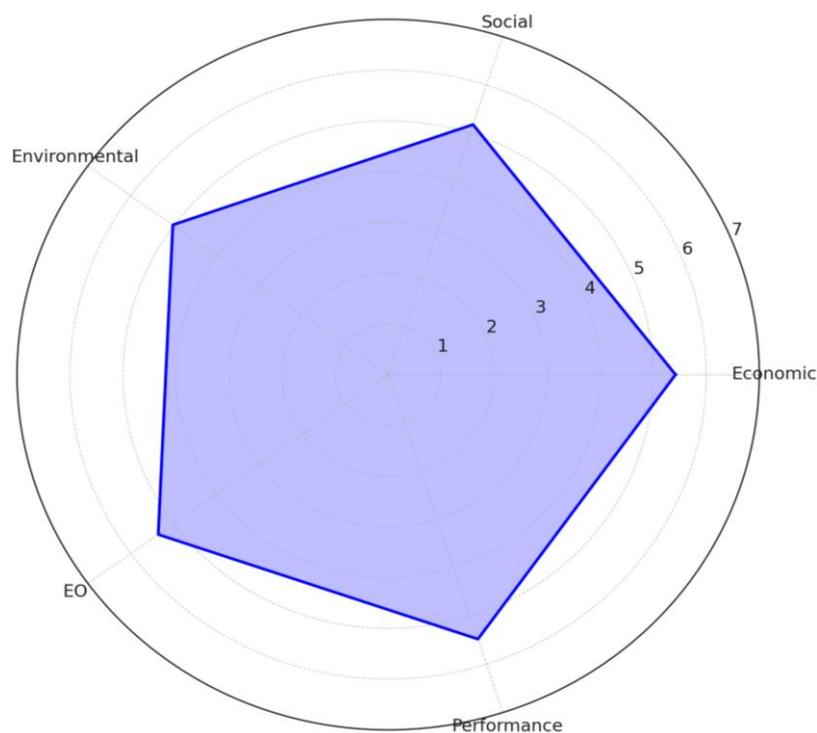


Figure 4. Radar chart of TBL, EO, and NGO performance

5.2 Measurement model

To assess the robustness of the constructs and their measurement properties, a CFA was performed. The CFA evaluated indicator reliability, internal consistency, convergent validity, discriminant validity, and model fit indices. This approach follows widely accepted standards in structural equation modeling literature and recent applications in nonprofit and sustainability research contexts [6], [15], [28].

5.2.1 Reliability and internal consistency

All standardized factor loadings for the reflective indicators exceeded the recommended threshold of 0.60, ranging from 0.65 to 0.90, confirming adequate indicator reliability [27]. The composite reliability (CR) values for all latent constructs fell between 0.87 and 0.91, and Cronbach's alpha values ranged from 0.83 to 0.89. Both metrics surpassed the standard cutoff of 0.70, indicating strong internal consistency and reliability [33], [34].

5.2.2 Convergent validity

Convergent validity was confirmed as the average variance extracted (AVE) values for all constructs exceeded 0.50, with values ranging from 0.55 to 0.64. These results suggest that each construct explains more than half of the variance in its indicators, as recommended by Kline et al. [29].

5.2.3 Discriminant validity

Discriminant validity was assessed using the Fornell–Larcker criterion and heterotrait–monotrait ratio (HTMT). The square roots of each construct's AVE exceeded their inter-construct correlations, confirming discriminant validity. Additionally, HTMT ratios were all below the conservative threshold of 0.85, further affirming construct distinctiveness [29].

These outcomes are in line with empirical studies in sustainability-driven NGOs. For example, [6] demonstrated the validity of NGO performance constructs through similar CFA methods. Similarly, [17], [28] and [35] showed the reliability of multidimensional constructs in sustainability and entrepreneurial contexts.

5.2.4 Model fit assessment

The measurement model demonstrated strong goodness-of-fit with the following indices:

- Chi-square to degrees of freedom ratio (χ^2/df) = 2.18 (acceptable < 3.0)
- Comparative Fit Index (CFI) = 0.949 (acceptable > 0.90)
- Tucker–Lewis Index (TLI) = 0.940 (acceptable > 0.90)
- Root Mean Square Error of Approximation (RMSEA) = 0.051 (acceptable < 0.06)

These indices meet the established thresholds suggested by Kline [29], [39], confirming the acceptability of the measurement model in assessing relationships among sustainability practices, EO, and NGO performance, presented in Table 2.

Table 2. Confirmatory factor analysis results

Construct	Loadings Range	CR	AVE	Alpha
Economic sustainability	0.65–0.88	0.87	0.58	0.84
Social sustainability	0.68–0.85	0.88	0.62	0.85
Environmental sustainability	0.66–0.81	0.86	0.55	0.83
Entrepreneurial orientation	0.69–0.90	0.91	0.64	0.89
NGO performance	0.70–0.88	0.90	0.61	0.87

5.2.1 CFA for entrepreneurial orientation

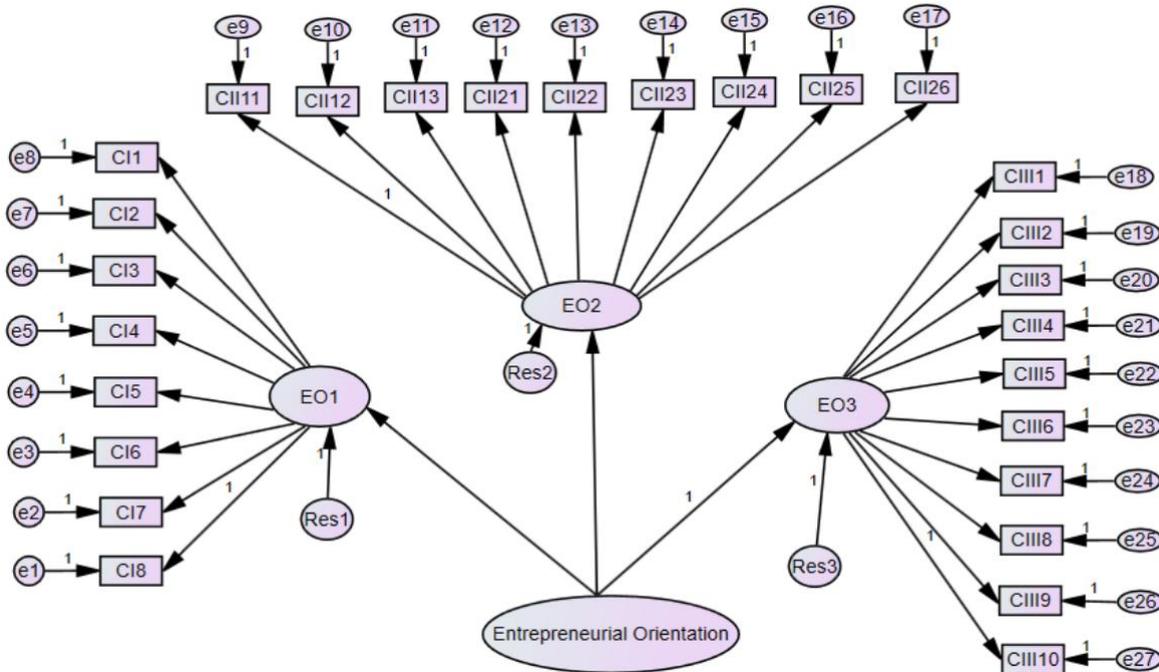


Figure 5. The measurement model for entrepreneurial orientation and its measuring items

The entrepreneurial orientation construct is operationalized through three core components derived from established multidimensional scales:

i) EO1 (Aspect of Innovativeness):

- This dimension assesses NGOs' commitment to developing novel solutions, creative programming, and technology adoption. It was measured using 8 items adapted from prior validated scales.

ii) EO2 (Impact of NGO’s Adaptability & Growth):

- This sub-construct evaluates the organization's ability to respond swiftly to changing environments and scale operations. It includes 9 items focused on responsiveness, learning orientation, and process flexibility.

iii) EO3 (Risk-Taking Behaviors):

- This dimension captures strategic risk behavior, including willingness to explore uncertain projects or innovative financing models. It was measured using 10 items contextualized to the nonprofit environment.

Figure 5 illustrates the measurement model for Entrepreneurial Orientation. Each component loads onto a second-order latent EO factor, with standardized coefficients exceeding 0.60, validating their relevance and reliability.

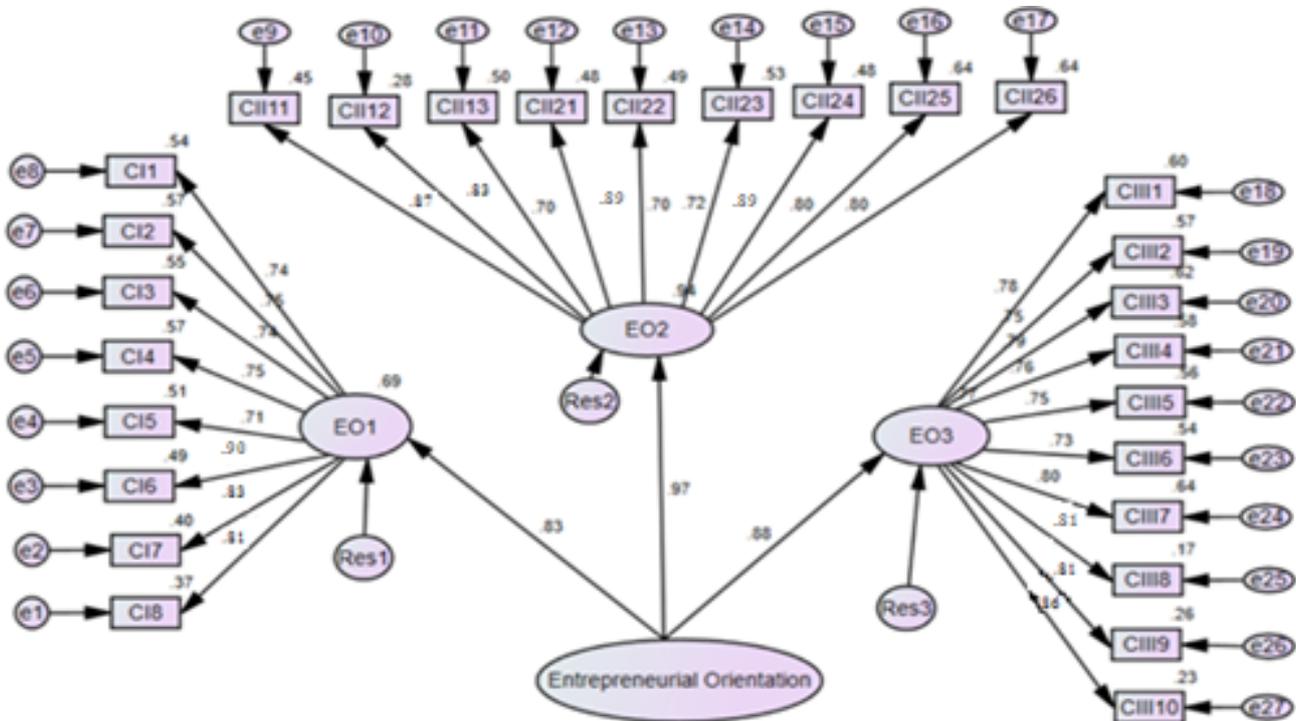


Figure 6. The CFA results for entrepreneurial orientation construct

Figure 6 presents the results of the CFA for the Entrepreneurial Orientation construct, which comprises three core dimensions:

- EO1: Innovativeness, assessed using 8 items
- EO2: Adaptability and Growth, assessed using 9 items
- EO3: Risk-Taking Behaviors, assessed using 10 items

Each sub-construct demonstrates satisfactory item loadings, all exceeding the recommended 0.50 threshold, confirming indicator reliability. Additionally, fitness indices indicate an acceptable model fit. While the RMSEA value is slightly elevated at 0.083, it remains within the acceptable upper limit of 0.10.

All other fit indices — such as the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Chi-square/df — fall within optimal ranges, confirming the validity of the measurement structure. These CFA results support both the discriminant and convergent validity of the Entrepreneurial Orientation construct, establishing a robust foundation for subsequent structural model testing.

5.3 Structural model

The structural model was tested to assess the hypothesized direct effects among sustainability dimensions, entrepreneurial orientation (EO), and NGO performance. Fit indices confirm a satisfactory model: $\chi^2/df = 2.26$, CFI = 0.945, TLI = 0.936, and RMSEA = 0.053—well within acceptable thresholds as defined by [29]. Economic sustainability showed a significant positive effect on NGO performance ($\beta = 0.338$, $p < 0.001$), confirming H1. This supports prior findings that emphasize economic capabilities—like diversified funding and cost efficiency—as key drivers of operational success in nonprofits [4], [8], [17].

However, social sustainability ($\beta = 0.092, p = 0.078$) and environmental sustainability ($\beta = 0.068, p = 0.111$) did not demonstrate statistically significant effects on performance, leading to rejection of H2 and H3. This is consistent with results from El Chaarani and Raimi [21], who argue that without internal capacity alignment, social and environmental strategies may not directly enhance NGO outcomes.

In contrast, all three sustainability pillars significantly influenced entrepreneurial orientation: economic ($\beta = 0.377, p < 0.001$), social ($\beta = 0.226, p < 0.01$), and environmental sustainability ($\beta = 0.248, p < 0.01$), confirming H4 through H6. These findings align with Baquero [28] and Dias et al. [23], who posit that sustainability-driven organizations tend to cultivate EO to convert external pressures into strategic adaptation.

EO itself showed a strong and significant effect on performance ($\beta = 0.401, p < 0.001$), confirming H7. This reinforces its mediating role as demonstrated in the works of [11] and [17], who highlight EO as a catalyst for resource orchestration and performance transformation.

Table 3. Structural model path coefficients

Hypothesis	Path	β	p-value	Result
H1	Economic sustainability \rightarrow Performance	0.338	<0.001	Supported
H2	Social sustainability \rightarrow Performance	0.092	0.078	Not Supported
H3	Environmental sustainability \rightarrow Performance	0.068	0.111	Not Supported
H4	Economic sustainability \rightarrow Entrepreneurial orientation	0.377	<0.001	Supported
H5	Social sustainability \rightarrow Entrepreneurial orientation	0.226	<0.01	Supported
H6	Environmental sustainability \rightarrow Entrepreneurial orientation	0.248	<0.01	Supported
H7	EO \rightarrow Performance	0.401	<0.001	Supported

5.4 Mediation model

To examine the mediating role of EO in the relationship between sustainability dimensions and NGO performance, a bootstrapping analysis with 5,000 resamples was conducted [36]. The results, shown in Table 4, confirmed that EO significantly mediates the effects of economic, social, and environmental sustainability on NGO performance [40], [41].

The indirect effect of economic sustainability on performance via EO was significant ($\beta = 0.151, p < 0.001$), suggesting partial mediation and thus confirming H8. This indicates that while economic sustainability has a direct effect on performance, part of its impact is transmitted through EO capabilities. This finding supports previous research emphasizing economic resilience as a base for entrepreneurial transformation in nonprofit sectors [11], [17] and [37].

For social sustainability, the indirect effect ($\beta = 0.091, p = 0.003$) was statistically significant, but the direct effect was non-significant, indicating full mediation and supporting H9. This suggests that NGOs need to translate social initiatives into entrepreneurial actions (e.g., innovative service delivery) for these to impact performance. As echoed in [4] and [21], NGOs in fragile institutional settings often require entrepreneurial interpretation of social values to achieve operational outcomes. Similarly, the indirect effect of environmental sustainability on performance ($\beta = 0.099, p = 0.002$) was also significant, again with a non-significant direct effect, indicating full mediation and validating H10. This aligns with [7], who highlight EO's capacity to convert environmental commitments into tangible impact through innovation and stakeholder co-creation [42] and [43].

These mediation dynamics reflect the propositions of the DCT and RBV. EO functions not merely as a behavioral orientation but as a dynamic internal mechanism that enables NGOs to harness external sustainability imperatives and reconfigure internal processes for improved performance [13], [27], [28]. Consistent with the

findings from [12] and [23], this study affirms that EO empowers NGOs to translate sustainability orientations into strategic decisions, innovations, and adaptive behaviors—elements necessary for achieving outcomes in resource-constrained environments. These results underscore EO’s bridging role, especially in contexts where sustainability practices alone may not yield measurable performance improvements unless strategically operationalized [44].

Table 4. Mediation effects via entrepreneurial orientation

Hypothesis	Indirect Path	Effect	p-value	Mediation Type
H8	Economic sustainability → EO → Performance	0.151	<0.001	Partial
H9	Social sustainability → EO → Performance	0.091	0.003	Full
H10	Environmental sustainability → EO → Performance	0.099	0.002	Full

6. Discussion and implications

The findings of this study contribute both theoretically and practically to understanding how sustainability practices affect NGO performance, emphasizing the mediating role of entrepreneurial orientation. The results demonstrate that while sustainability practices are essential, their translation into measurable performance outcomes requires entrepreneurial capabilities that enable adaptation, innovation, and responsiveness.

6.1 Interpretation of findings

Prior studies have emphasized the link between financial viability, donor confidence, and strategic performance in NGOs [6], [7]. Our findings confirmed that economic sustainability significantly and directly influences performance ($\beta = 0.338$, $p < 0.001$), aligning with prior literature [11], [13]. In contrast, social and environmental sustainability did not show direct performance effects, suggesting that NGOs need well-developed internal competencies to transform such practices into tangible impacts [17], [21]. The strong positive effects of economic ($\beta = 0.377$), social ($\beta = 0.226$), and environmental ($\beta = 0.248$) sustainability on EO support the proposition that sustainability encourages entrepreneurial behavior, which strengthens adaptability and innovation [14], [27]. EO’s direct and significant impact on performance ($\beta = 0.401$, $p < 0.001$) confirms its centrality in operationalizing sustainable strategies and improving stakeholder alignment [23], [38].

6.2 Mediation effects

The mediation analysis demonstrated that EO partially mediates the link between economic sustainability and performance, while it fully mediates the effects of social and environmental sustainability. This implies that in resource-constrained settings, EO becomes essential in transforming social inclusion and environmental goals into actionable, performance-driven programs [12], [15]. These findings echo previous work highlighting EO as a key competency for strategic alignment and performance conversion under institutional uncertainty [4], [17].

6.3 Theoretical contributions

This study advances the RBV and DCT by demonstrating EO’s mediating role in converting sustainability practices into organizational value. By empirically situating EO within NGOs in volatile environments, the research expands entrepreneurship theory into the development sector context, which has been underexplored in academic literature [13], [14], [18]. It bridges the gap between nonprofit sustainability strategies and strategic entrepreneurship models.

6.4 Practical implications

Practically, the findings offer strategic direction for NGO managers, donors, and policymakers. Embedding EO in leadership, training, and project design enhances adaptive capacity and mission coherence. Funding models

should evolve from compliance-based to capability-building approaches that foster entrepreneurial resilience. Evaluation systems must capture not only outputs but strategic competencies such as agility, experimentation, and responsiveness. This could lead to more accurate assessments of NGO effectiveness in complex environments [6], [20].

7. Conclusion and future research

This study examined the relationships between sustainability practices—economic, social, and environmental—and NGO performance, with entrepreneurial orientation (EO) as a mediating variable. While economic sustainability directly impacted performance, social and environmental sustainability exerted indirect effects through EO. These findings underscore EO's strategic role as a dynamic capability in translating sustainability ambitions into measurable organizational achievements.

Theoretically, the study reinforces EO as a strategic enabler within the RBV and DCT frameworks, affirming its relevance in nonprofits operating in resource-constrained environments. By highlighting EO's centrality in NGO adaptability, innovation, and performance enhancement, this study expands entrepreneurship literature beyond the for-profit context.

From a managerial perspective, EO should be viewed as a strategic investment. Capacity-building initiatives focused on innovation, experimentation, and adaptability can empower NGOs to navigate environmental turbulence. Donors and development agencies should integrate EO into funding mechanisms, ensuring alignment between strategic adaptability and program outcomes. Additionally, performance assessments must integrate adaptive indicators such as innovation frequency and stakeholder responsiveness to capture NGO value creation in dynamic settings.

Despite its contributions, the study has limitations. Its cross-sectional design restricts causal interpretation, and the geographic focus on international NGOs in Jordan may affect generalizability. Future research should include longitudinal studies that explore EO's evolution under funding fluctuations and institutional disruptions. Expanding this model to local NGOs and fragile states would uncover contextual variations. Future investigations should also explore digital transformation as a moderating factor of EO's impact and assess how governance structures influence the EO–performance relationship.

Ultimately, EO emerges as a pivotal mediating mechanism, equipping NGOs to transform sustainability strategies into sustainable performance. The findings offer actionable insights for scholars, practitioners, and policymakers striving to align NGO effectiveness with global development priorities.

Declaration of competing interest

The authors declare that they have no known financial or non-financial competing interests in any material discussed in this paper.

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Author contribution

The contribution to the paper is as follows: O. H, M. M: study conception and design; M. M, M. A: data collection; O. H, M. A, A. M: analysis and interpretation of results; O. H, A. M: draft preparation. All authors approved the final version of the manuscript.

Ethical approval statement

Our institution does not require research ethics approval for anonymous survey-based research involving adult participants in non-clinical settings.

Informed consent

Informed consent was obtained from all participants involved in the study.

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