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Prioritization of Internal and External Corporate Sustainability Dimensions: Evidence from Sustainability Auditors Using AHP

Yufu Wang ¹, Gül Yeşilçelebi ^{2,*}, Büşra Tosunoğlu Kusan ³, Alper Veli Çam ² and Mihaela Dumitru ⁴

¹ School of Management, Jiangsu University, Zhenjiang 212013, China

² Faculty of Health Sciences, Department of Health Management, Gumushane University, 29100 Gumushane, Türkiye

³ Faculty of Economics and Administrative Sciences, Department of Business Administration, Gumushane University, 29100 Gumushane, Türkiye

⁴ Department of Finance, Accounting and Economics, National University of Science and Technology Politehnica Bucharest, 060042 Bucharest, Romania

* Correspondence: gulyesilcelebi@gumushane.edu.tr

Abstract

Corporate sustainability has traditionally been evaluated through environmental, social, and economic dimensions. However, increasing sustainability challenges, stakeholder expectations, and regulatory requirements indicate that sustainability extends beyond conventional performance measures and requires an integrated perspective that considers both internal organizational capabilities and external institutional conditions. This study develops an integrated internal–external sustainability framework and prioritizes sustainability dimensions from the perspective of licensed sustainability auditors in Türkiye. The proposed framework comprises governance, ethical, behavioral, cultural, environmental, social, economic, legal, and technological dimensions. The Analytic Hierarchy Process (AHP) was applied to pairwise comparison data collected from 15 licensed sustainability auditors to determine the relative importance of these dimensions. The results indicate that external sustainability dimensions received substantially higher priority (70.97%) than internal dimensions (29.03%), demonstrating that sustainability assessments are primarily shaped by environmental challenges, regulatory requirements, stakeholder expectations, technological developments, and market conditions. Among the nine corporate sustainability dimensions, environmental sustainability received the highest overall priority, followed by technological, ethical, social, economic, legal, governance, cultural, and behavioral dimensions. These findings suggest that although internal organizational capabilities remain important, corporate sustainability is predominantly influenced by external institutional and environmental factors. By proposing an integrated internal–external sustainability framework, this study extends conventional sustainability assessment approaches and contributes to the sustainability governance and assurance literature. The findings also provide practical implications for sustainability reporting, assurance, governance, and strategic decision-making by identifying the sustainability dimensions that deserve the greatest managerial and regulatory attention.

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1. Introduction

Since the beginning of the twenty-first century, sustainability has become a strategic priority at both the global and organizational levels [1,2]. Global challenges such as climate change, the depletion of natural resources, and growing social inequalities have led to the evaluation of businesses not only in terms of economic performance but also with respect to their environmental and social impacts [3]. In this context, sustainability has emerged as a complex, multidimensional concept that must be addressed through an integrated perspective encompassing environmental, economic, and social components [4]. More recently, sustainability has evolved from a voluntary corporate responsibility initiative into a strategic governance concern driven by increasing regulatory requirements, stakeholder expectations, mandatory sustainability reporting, and independent assurance practices [2,5]. This shift indicates a move away from treating sustainability as a performance outcome, to treating it as an organizational governance and accountability process [2].

Sustainability science has emerged as a problem-driven and decision-oriented field that seeks to generate actionable knowledge at the interface of society and nature [6]. During the late 1980s, a three-dimensional vision of sustainable development was formalized, emphasizing economic growth, social inclusion, and environmental balance. The Our Common Future report, published by the World Commission on Environment and Development [7] and widely known as the Brundtland Report, defined sustainable development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” These three dimensions environmental, social, and economic have since been widely adopted as the foundational framework for sustainability-related policies and development strategies at local, national, and global levels [4,7].

Although sustainability is often regarded as a contemporary concept, practices reflecting sustainable living and resource preservation have existed for centuries [8]. Traditionally, sustainability has been conceptualized through environmental, social, and economic pillars; however, governance-related principles have long been embedded within the sustainability discourse rather than being absent from it [4]. The Brundtland Report (1987), while primarily emphasizing sustainable development, also highlighted the importance of institutional capacity, policy coordination, public participation, and accountability as essential mechanisms for achieving sustainability [7]. In early sustainability research, these governance-related elements were generally treated as enabling conditions that supported sustainable development, rather than being recognized as an independent sustainability dimension. However, the rapid expansion of Environmental, Social, and Governance (ESG) reporting, sustainability assurance, corporate accountability, and regulatory frameworks has substantially increased the strategic importance of governance within corporate sustainability. As a result, current sustainability research increasingly views governance as more than a supporting mechanism, but as a unique organizational capability that affects the ways in which sustainability strategies are formulated, implemented, monitored and assured [2,9].

As sustainability research has evolved, scholars have been extending the conceptual scope of sustainability beyond the basic environmental, social and economic pillars [8]. This progress has resulted in a deeper awareness of the complementing dimensions such as governance, culture, ethics, behavioral well-being, legal frameworks and technical

infrastructure that promote the implementation and assessment of sustainability in organizational contexts [10–12]. These characteristics are not new pillars of sustainability, but rather the rising acknowledgement that sustainable development also depends on organizational capacities, governance frameworks, institutional quality and stakeholder involvement [13]. The United Nations Educational, Scientific and Cultural Organization (UNESCO) stresses the complementary dimension of culture in the establishment of sustainable development processes and societal behaviors [11]. Recent research has also underlined the role of governance capability and institutional decision-making in affecting the outcomes of corporate sustainability [13,14]. While this conceptual evolution has taken place, nevertheless the vast majority of sustainability assessment frameworks are based on the traditional environmental-social-economic pillars while dimensions related to governance and organization are relatively underrepresented both in theoretical models and practical evaluation frameworks [2].

The classification of sustainability dimensions into internal and external categories is based on the primary source of influence on organizational sustainability rather than on their relative importance or where organizational capabilities reside. Internal dimensions originate within the organization and include governance structures, ethical values, organizational culture, managerial capabilities, and psychological characteristics that directly influence strategic decision-making and sustainability implementation [13,15,16]. External dimensions arise from the broader institutional environment and encompass environmental, legal, technological, social, and economic conditions that shape organizational behavior through regulatory requirements, stakeholder expectations, market dynamics, and technological change [14,17,18]. This classification is consistent with Institutional Theory, which explains that organizational sustainability emerges through the continuous interaction between internal organizational capabilities and external institutional pressures [13,19,20]. The Resource-Based View (RBV) [21] emphasizes the strategic importance of a firm's unique resources and capabilities for achieving a sustainable competitive advantage. The Dynamic Capabilities Theory (DCT) [22], on the other hand, highlights an organization's ability to integrate, develop, and restructure these capabilities in response to changing environments. Instead of classifying sustainability dimensions according to the location of organizational capabilities, as suggested by the RBV and DCT, the proposed framework categorizes them based on the primary source of sustainability pressures evaluated by licensed sustainability auditors. From this perspective, economic sustainability is primarily assessed through macroeconomic conditions, financial markets, and regulatory environments, whereas technological sustainability is evaluated through technological ecosystems, digital transformation, regulatory developments, and industry-wide innovation dynamics [13,19,20]. Therefore, these dimensions are conceptualized as external sustainability conditions because they predominantly represent institutional and environmental contexts within which organizations operate rather than firm-specific strategic capabilities. Accordingly, this classification reflects a different unit of analysis rather than contradicting the RBV and DCT.

From a theoretical perspective, this study is primarily grounded in Institutional Theory, which explains that organizational sustainability is shaped through the dynamic interaction between internal organizational capabilities and external institutional environments [19,20]. Within this perspective, governance is regarded as a key organizational mechanism that enables organizations to interpret, implement, and monitor sustainability strategies while responding to institutional pressures and stakeholder expectations [13]. Accordingly, corporate sustainability is viewed not merely as an outcome-oriented construct but as an organizational process embedded in governance structures, ethical accountability, and strategic decision-making [2]. Recent sustainability assurance research further supports this perspective by emphasizing the importance of governance and

internal control systems in integrating ESG-related accountability and sustainability processes within organizations [9]. While Institutional Theory explains how external institutional pressures shape organizational sustainability priorities, the RBV and DCT explain how organizations internally develop, mobilize, and adapt strategic capabilities in response to these pressures [19–22]. Stakeholder Theory further complements this framework by explaining how organizations incorporate the interests and expectations of multiple stakeholder groups into sustainability-related decision-making [23]. Accordingly, these theoretical perspectives are treated as complementary rather than competing lenses for understanding corporate sustainability.

This study aims to fill this gap by extending the conceptual boundaries of sustainability by presenting an integrated internal–external sustainability framework. Behavioral, cultural, ethical and governance elements are conceptualized as internal dimensions of sustainability that reflect institutional capacity and normative foundations whereas environmental, social, economic, legal and technological elements are treated as external sustainability dimensions. Using AHP, this study highlights these elements from the perspective of licensed sustainability auditors and provides an empirically based and hierarchically designed sustainability model. In doing so, it improves conceptual clarity and offers a strong platform for more consistent sustainability audits, assurance methods and policy creation, and so contributes to sustainability science.

Firms are situated in complex institutional settings where strategic priorities are determined by internal structures, values and control mechanisms as much as by external regulatory and market forces [19,20]. Within this environment, corporate governance and ethical responsibility play a vital role in deciding how sustainability objectives are interpreted, prioritized and executed at the organizational level [2,13,24]. This perspective is especially applicable in organizational contexts increasingly characterized by elevated sustainability aspirations, increased regulatory complexity, and challenges for responsibility [9]. The expert panel was formed of licensed sustainability auditors because they are able to assess governance structures, ESG reporting methods, internal control systems, regulatory compliance and sustainability assurance processes across diverse industries at the same time. Sustainability auditors, however, assess sustainability from an independent assurance perspective, focusing on governance quality, regulatory compliance, internal control systems and reporting reliability, unlike managers, shareholders, customers or other stakeholder groups whose sustainability evaluations are often influenced by organizational objectives or stakeholder interests. Their multidisciplinary experience provides a comprehensive perspective on the prioritization of sustainability elements in organizational practice and makes them particularly suitable for the assessment of the relative relevance of internal and external sustainability dimensions. Thus, this study employs a governance and management approach to explore how licensed sustainability auditors prioritize internal and external sustainability elements based on the AHP.

This study makes three principal contributions to the sustainability governance and sustainability accounting literature. First, the findings demonstrate that sustainability auditors prioritize external sustainability dimensions (70.97%) over internal sustainability dimensions (29.03%), indicating that contemporary sustainability assessments are strongly shaped by environmental, technological, regulatory, and stakeholder-related pressures rather than solely by internal organizational capabilities. This result extends previous sustainability assessment approaches by empirically showing the dominant influence of external institutional conditions on sustainability priorities.

Second, the results reveal that sustainability priorities differ considerably between local and global evaluations. Although ethical sustainability represents the most important internal dimension with a local priority weight of 43.61%, its global ranking decreases to third place (12.66%) due to the lower overall weight assigned to internal

sustainability. In contrast, environmental sustainability emerges as the highest-ranked dimension globally (21.91%), followed by technological sustainability (14.17%). These findings provide new insights into how hierarchical relationships among sustainability dimensions influence overall sustainability priorities.

Third, this study shows that sustainability auditors view corporate sustainability as a multi-dimensional governance and accountability system where ethical responsibility and governance mechanisms provide the internal foundations while environmental and technological dimensions are the main external drivers. The paper identifies these important patterns and presents practical implications for sustainability assurance, ESG reporting, governance processes and regulatory frameworks. In this sense, Türkiye is an emerging sustainability assurance environment where the recent regulatory reforms and the introduction of qualified sustainability auditors offer a unique institutional setting to examine sustainability priorities [25].

Beyond firm-level decision-making, the proposed prioritization framework may support regulators, standard setters, and policymakers by providing evidence-based insights into which sustainability dimensions require greater attention in the development of sustainability assurance and reporting systems. The findings may also be relevant for other emerging economies developing similar sustainability assurance frameworks.

2. Conceptual Framework and Literature Review

Sustainability has become one of the main goals of contemporary civilization at the present time. To evaluate this notion soundly, it is necessary to consider and handle several forms of information, factors and uncertainties [26]. A review of the literature indicates that the sustainability assessments based on AHP still have certain shortcomings. Previous research using AHP [27–30] have mostly explored the environmental, economic and social aspects and have remained in the traditional sustainability framework. However, the absence of individual and societal processes (behavioral, cultural, ethical and governance elements) and legal and technological elements leave a considerable gap [2,8,31].

Building upon this research gap, the present study integrates internal and external dimensions previously overlooked in the literature into sustainability assessments. In doing so, it broadens the conceptual scope and contributes to the literature both theoretically and practically.

Determining the dimensions in sustainability assessments requires a holistic approach that considers not only internal business processes but also the expectations of external stakeholders [16,17]. Studies in the literature [4,16,17] emphasize that the concept of sustainability cannot be limited to environmental or financial indicators; internal factors such as organizational structure, corporate culture, and ethical values are also central to the process. In contrast, external factors such as legal regulations, market dynamics, and stakeholder expectations emerge as key elements shaping businesses' sustainability strategies [13,18]. Recent studies also distinguish between internal organizational capabilities and external institutional drivers as complementary mechanisms shaping sustainability performance [13,15,32]. Internal factors such as governance, innovation, and organizational entrepreneurship interact with stakeholder expectations and institutional environments to strengthen long-term sustainability outcomes [15,32].

In this regard, this study conceptualizes internal dimensions as internal capacity, culture, and values, while external dimensions reflect the environmental, social, and regulatory conditions in which the business operates. Thus, addressing both dimensions together enables a more comprehensive and balanced measurement of sustainability performance [16]. Although some dimensions, particularly economic and technological sustainability, may also reflect internal organizational capabilities, they are conceptualized

as external dimensions in this study because they primarily represent conditions imposed by markets, technological ecosystems, and institutional environments within the proposed analytical framework.

In the study, sustainability is addressed within the framework of two fundamental dimensions: internal and external. In light of the literature and expert opinions behavioral, cultural, ethical, and governance elements are included in the internal dimensions, while environmental, social, and economic factors, as well as legal and technological sub-dimensions, are included in the external dimensions. Within this framework, the internal and external dimensions of sustainability were restructured and comprehensively analyzed. The internal and external dimensions addressed in this study are explained in detail below.

2.1. Internal Dimensions

There is a clear gap in the literature regarding the association of internal dimensions with the AHP approach, and this study fills this gap and expands the conceptual framework. The internal dimensions of sustainability are behavioral, cultural, ethical, and governance, and they are discussed below.

2.1.1. Behavioral Dimension

Sustainability is increasingly recognized not only in terms of environmental, economic, and social aspects but also through its contribution to improving individuals' quality of life [31,33]. In this context, sustainability psychology has emerged as an important field of research, addressing the psychological well-being of individuals, employees, groups, and organizations. The complexity and rapid pace of change in today's environment [34,35], together with globalization and economic uncertainty, have increased risks to the well-being of individuals and organizations. These developments have contributed to the emergence of sustainability psychology as a new research field within sustainable development [31]. Understanding the socio-psychological factors that influence sustainable development is critical for developing effective strategies and policies aimed at creating a sustainable, responsible and humane society [31,36].

The psychology of sustainability extends beyond ecological and socio-economic concerns by emphasizing the enhancement of individual well-being as a prerequisite for sustainable development. Positive emotions, life satisfaction, resilience, and a strong sense of purpose encourage environmentally responsible behaviors and support their long-term continuity [28,30,33]. Accordingly, sustainability should be understood not only as an environmental or economic objective but also as a process that strengthens psychological resilience and adaptive capacity at both the individual and societal levels [37].

From an organizational perspective, psychological factors influence employees' willingness to adopt sustainable practices, support organizational change, and participate in sustainability initiatives. Individual motivation, environmental awareness, resilience, and pro-sustainability attitudes facilitate the successful implementation of sustainability strategies and strengthen employee engagement in sustainability-related activities [31,36]. Therefore, psychological sustainability contributes not only to individual well-being but also to the long-term effectiveness of sustainability implementation within organizations [31,33,36].

Although the literature frequently discusses these issues under the concept of psychological sustainability, the present study operationalizes this aspect as the behavioral dimension of corporate sustainability. This terminology emphasizes the observable sustainability-oriented behaviors and practices of individuals and organizations, which represent the practical manifestation of underlying psychological factors in organizational settings.

2.1.2. Cultural Dimension

Although sustainability was initially associated primarily with environmental protection, its conceptual scope has progressively expanded to encompass broader social, economic, cultural, and governance-related considerations. Consequently, contemporary sustainability extends beyond the conservation of natural resources and ecosystems to include human rights, social development, and cultural values as integral components of sustainable development [8,11].

Recent sustainability research increasingly recognizes culture as a complementary dimension that shapes how societies and organizations understand and implement sustainable development. UNESCO emphasizes that culture provides the transformative capacity necessary to ensure the long-term sustainability of development processes by influencing shared values, behaviors, and institutional practices [11,38].

In recent years, studies on culture, especially in the fields of energy and transportation, have increased, but research examining the sustainability dimension remains limited [39,40]. However, sustainability, which is defined as the ability of ecological systems to continue their functions, processes and productivity in the future, includes political, economic, technological, and social transformations [8,41]. Therefore, in addition to economic, social, and environmental dimensions, culture constitutes an important dimension of sustainability [12,42]. The cultural dimension of sustainability is defined as values and attitudes that can be sustained and developed despite external factors [42]. This dimension includes efforts to preserve society's tangible and intangible cultural values to promote economic sustainability [12,43].

At the World Summit on Sustainable Development, UNESCO emphasized the need to include culture in the sustainable development model, as culture shapes our understanding of development and influences people's behavior in the world [11]. This new approach addresses the relationship between culture and sustainable development in two ways: first, by developing the cultural sector itself (i.e., heritage, creativity, cultural industries, crafts, cultural tourism); and second, by ensuring that culture takes its rightful place in all public policies, especially those related to education, economy, science, communication, environment, social cohesion, and international cooperation [10,11].

Initially, sustainable development was defined in terms of three dimensions: ecological, economic, and social. Moreover, the social dimension was understood in various ways, emphasizing the socio-economic assets of development rather than socio-cultural capacities [4,8]. More recently, increasing attention has been devoted to defining cultural sustainability as the fourth pillar of sustainable development [39]. The roots of this interest can be found in much earlier discussions proposing "cultural capital" as a specific type of capital that includes the multifaceted resources available to build sustainable development [43]. Moreover, the idea of including cultural sustainability as the fourth pillar of public planning for sustainable development was already proposed at the turn of the century [12].

Within organizations, culture shapes the shared values, norms, and behavioral patterns that determine how sustainability principles are interpreted and translated into daily organizational practices [38,44]. A sustainability-oriented organizational culture strengthens employee commitment, encourages cross-functional collaboration, and facilitates the consistent implementation of sustainability strategies. Moreover, by fostering transparency, organizational learning, and continuous improvement, culture contributes to the long-term institutionalization and effectiveness of sustainability practices [13,19,44,45].

2.1.3. Ethical Dimension

Sustainability aims to protect natural resources and maintain the ecological balance while fulfilling the social, environmental, and economic responsibilities of businesses. To achieve this objective, businesses should not ignore ethical principles such as fairness, transparency, accountability and responsibility in their activities. With globalization, the importance of the concepts of sustainability and ethics has gradually increased and the necessity of ethics to be one of the dimensions of sustainability has become increasingly evident [46,47]. Ethical practices form the basis of environmental, social, and economic sustainability. Ethical rules adopt respect and sensitivity to the individual and the environment and pay attention to the protection of ecological balance in production activities [48].

The ethical dimension of sustainability means taking into account moral values and goals as well as efficiency. This dimension arises from the need to embrace that the individual is a matter of existence, the guarantee of life, and that the individual is a part of the biosystem [49], and it is not possible to ignore the concept of ethics when talking about the dimensions of sustainability [50]. Ethics is defined as a set of beliefs to examine what is right and wrong in the moral principles that play a role in an individual's behavior or the conduct of an activity. The change in the environment and climate caused by individuals, the increase in diseases and deaths, forest fires and droughts lead to a decrease in biodiversity. Business ethics is critical in reducing ecological problems and contributing to the sustainability of businesses [51].

Within organizations, ethical principles provide the normative foundation for sustainability by guiding responsible decision-making, strengthening stakeholder trust, and promoting accountability [2,13]. Ethical organizational practices encourage transparency, fairness, and integrity in sustainability reporting and managerial processes, thereby reducing opportunistic behavior and enhancing the credibility of sustainability initiatives [52,53]. As a result, ethics serves as a critical mechanism for the effective implementation, monitoring, and long-term success of corporate sustainability strategies.

2.1.4. Governance Dimension

The governance dimension of sustainability prioritizes and decides on actions to be taken on the direct and indirect impacts of sustainability, taking into account sustainability strategies, organizational policies, accountability mechanisms, and stakeholder oversight. In the context of sustainability, the governance dimension plays a critical role in generating balanced and long-term solutions in environmental, social and economic dimensions [2,4]. Good governance principles of transparency, participation, accountability and fairness ensure that sustainability practices are effective and lasting [18,53]. Stakeholder participation in decision-making processes not only increases policy effectiveness but also contributes to ensuring social legitimacy [18,54]. Moreover, the monitoring, evaluation, and reporting of sustainability goals are directly related to the functionality of governance structures [9,52]. Therefore, the success of sustainable development depends on the existence of a strong and inclusive governance structure [13,19].

From a corporate governance perspective, governance provides the institutional mechanisms necessary to translate sustainability objectives into effective managerial practices. Well-designed governance structures facilitate strategic decision-making, clarify roles and responsibilities, strengthen internal control systems, and ensure accountability throughout sustainability processes [2,9]. Furthermore, governance supports the implementation, monitoring, and continuous improvement of sustainability strategies by promoting transparency, stakeholder engagement, and effective oversight. Accordingly, governance functions as a coordinating mechanism that integrates social, environmental, and economic objectives into organizational decision-making and long-term corporate

sustainability performance [11,14]. Recent studies further emphasize that governance serves not only as a compliance mechanism but also as an organizational capability that strengthens accountability, legitimacy, and sustainability performance across firms [1,24]. Recent evidence also indicates that sustainability governance is shaped by interactions between organizational capabilities and stakeholder expectations, highlighting the importance of integrating governance mechanisms with stakeholder-oriented ESG management [32].

This perspective is consistent with Institutional Theory, which explains that governance mechanisms enable organizations to respond to institutional pressures while strengthening organizational legitimacy and sustainability performance [19,20].

In this study, governance is conceptualized primarily as an internal organizational capability involving strategic decision-making, accountability, and internal control mechanisms. Regulatory institutions, legal requirements, and public enforcement mechanisms are treated separately under the legal dimension because they represent external institutional pressures rather than organizational governance [19,20].

2.2. External Dimensions

The external dimensions of sustainability are environmental, social, economic, legal and technological and are explained as follows.

2.2.1. Environmental Dimension

Environmental sustainability, one of the most fundamental dimensions of sustainable development, involves the ability of individuals and nature to exist in harmony and create an environment that can meet the needs of future generations [55]. Environmental sustainability increases environmental resilience by protecting natural resources and reducing the negative impacts on the ecosystem [56]. Shareholders, employees, and customers are also important stakeholders of businesses, and their activities also affect the environment. In addition, these stakeholders put pressure on businesses to fulfill their environmental responsibilities [18,57]. For this reason, businesses need to reduce the negative impacts on the environment and include environmental factors in their strategies while planning processes for final products [58,59].

With the environmental dimension of sustainability, businesses adopt environmentally friendly management approaches. In addition, environmental reports are now included in the financial reporting of enterprises [52,53]. The adoption of environmentally friendly policies also provides businesses with benefits including increased efficiency and productivity, brand reputation, consumer confidence, market share and export growth [60]. In order to achieve these benefits, energy and resource consumption should be minimized, global warming should be prevented, and waste reduction and organic production should be increased [61].

In organizational settings, environmental sustainability influences how firms manage natural resources, reduce environmental impacts, and comply with environmental regulations. Environmentally responsible practices improve resource efficiency, reduce operational risks, and strengthen corporate reputation, thereby supporting the successful implementation of sustainability strategies [62,63]. Continuous environmental monitoring and performance measurement further enable organizations to identify improvement opportunities and enhance long-term sustainability performance [52,53].

2.2.2. Social Dimension

The social dimension of sustainability has emerged due to the necessity to take into account social issues, where only economic and environmental issues will not be sufficient to ensure sustainability [64]. This dimension has a mediating role in ensuring that social

welfare and development are compatible with environmental and economic sustainability. Social sustainability aims to ensure the equality and justice necessary to improve the living standards of individuals and communities [65]. Social sustainability includes principles such as equality of access to services, participation of individuals, mechanisms created to meet the needs of society, and a sense of community [66]. Based on these principles, social sustainability emphasizes the importance of social equality and encourages the creation of an environment that enables different communities to act in harmony [67].

Social sustainability also refers to investments in human and social capital development. For the development of human capital, investments in vocational training for the knowledge and skills of business employees and for the development of social capital, investments in public services should be emphasized. Social sustainability is seen as an approach used to cope with global challenges in the future, and businesses should process arguments that will harmonize social sustainability with their level of competitiveness [45]. From the corporate sustainability perspective, investments in employees, workplace conditions, and stakeholder relationships represent important mechanisms through which firms develop social sustainability capabilities [1].

Within the corporate context, social sustainability strengthens relationships with employees, customers, suppliers, and local communities by promoting equity, inclusion, and stakeholder engagement. Socially responsible practices strengthen stakeholder relationships, improve employee commitment, enhance social legitimacy, and facilitate the successful implementation of sustainability initiatives [18,54,58].

2.2.3. Economic Dimension

The economic dimension of sustainability aims to achieve economic development, efficient use of resources and maximum income. Resource depletion has an important place in the economic dimension of sustainability. For this reason, practices such as recycling energy and materials into raw materials, obtaining maximum efficiency with minimum materials, and recycling the wastes generated after production should be evaluated [68]. The economic dimension of sustainability takes into account the relationship between the individual and nature [69] and aims to sustain economic development without harming environmental and social boundaries. Economic sustainability aims to secure the long-term stability of economic systems by reducing the pressure of production and consumption activities on natural resources [70]. In addition, approaches such as green growth, circular economy and resource efficiency stand out as implementation tools of economic sustainability [71]. In this framework, sustainability strategies of businesses not only reduce environmental impacts, but also bring economic gains such as competitive advantage, cost savings and risk management [58,62,63,72].

At the firm level, economic sustainability provides the financial capacity necessary to support long-term sustainability initiatives and organizational resilience. Efficient resource allocation, cost management, and sustainable investment decisions enable organizations to balance economic performance with environmental and social responsibilities [1]. Moreover, economically sustainable practices strengthen organizational competitiveness, support innovation, and facilitate the continuous implementation and improvement of sustainability strategies [53].

2.2.4. Legal Dimension

Sustainability can also be understood as a paradigm that is recognized as one of the cornerstones of law and policy in the world [73,74]. The legal dimension of sustainability refers to laws, regulations, international agreements and legal arrangements created to ensure environmental, economic and social sustainability [75]. This dimension provides the legal framework to ensure that individuals, companies and governments act in

accordance with the principles of sustainable development [74]. Achieving sustainability remains an ongoing challenge and requires a significant transformation of the legal institutions that govern the economy today. In many cases, this transformation is still ongoing [73,74].

The legal dimension of sustainability refers to securing environmental, social and economic goals through legal regulations. Law is one of the main tools that ensure the feasibility and continuity of sustainable development [74]. In this context, the principle of sustainability is increasingly being enshrined in both national legislation and international conventions [75]. Since the Brundtland Report of the United Nations in 1987, sustainable development has been adopted as a legal principle in the constitutions, environmental laws and development plans of many countries [7,74].

In Türkiye, the Environmental Law No. 2872 and the Green Deal Action Plan published in 2021 represent important legal instruments supporting environmental sustainability [76]. In addition, international documents such as European Union legislation and the Paris Climate Agreement contain binding provisions on issues such as combating climate change, resource conservation and environmental justice [75]. This function of law ensures that sustainability is transformed from an abstract goal into an accountable and enforceable obligation. Therefore, the legal dimension of sustainability provides a decisive framework for the applicability of other dimensions [74].

The Corporate Sustainability Reporting Directive (CSRD) of the European Union (EU) imposes an obligation on companies to undergo independent auditing and disclosure regarding sustainability reporting. This regulation covers not only businesses in EU member states, but also non-EU companies with subsidiaries, branches, or significant commercial activities in the EU. The CSRD thus aims to raise sustainability assurance standards on a global scale [77].

From a regulatory perspective, legal sustainability establishes the regulatory framework that guides responsible corporate behavior and ensures compliance with sustainability-related legislation. Legal requirements encourage organizations to integrate sustainability into governance structures, reporting systems, and operational processes while enhancing transparency and accountability. Consequently, legal frameworks facilitate the implementation, monitoring, and enforcement of sustainability practices, thereby strengthening organizational legitimacy and stakeholder confidence [74,77].

2.2.5. Technological Dimension

Technology and sustainability have become key factors in a company's competitiveness [3,78]. The technological dimension of sustainability enables companies to generate higher profits, reach new markets, expand their customer base and increase profit margins [72,78]. However, for this to happen, companies need to embed technology and sustainability into their strategies and corporate culture, invest in them, and address the consequences [78,79]. Although sustainability in business is generally discussed in terms of environmental, economic, and social dimensions, the omission of the technological dimension represents a significant limitation in contemporary sustainability research [2,8].

While the concept of sustainability in businesses is generally addressed within the framework of environmental, economic, and social dimensions, the neglect of the technological dimension is considered a significant shortcoming under current conditions [78]. Integrating technologies such as blockchain, artificial intelligence, and machine learning into audit processes can make significant contributions in terms of data integrity, processing speed, and reliability [80]. Technologies such as artificial intelligence, blockchain, big data analytics, and digital reporting platforms improve data accuracy, transparency, traceability, and decision-making quality in sustainability management. In addition,

digital sustainability assurance systems contribute to enhancing transparency and accountability in corporate sustainability reporting processes [80,81].

As digital technologies continue to reshape business operations, technological innovation has become an important driver of sustainable manufacturing by enabling organizations to implement more efficient and responsible production practices. These technological advances provide a variety of solutions that support sustainability throughout production processes [82,83]. Nevertheless, realizing their full potential requires sustainability principles to be embedded across the entire value chain, involving all stakeholders and every stage of a product's life cycle [3]. Adopting a systemic approach and a holistic vision with the application of 4.0 technologies to the entire production process is necessary to ensure a sustainable restructuring of products, business models and logistics supply chains [82,83].

From a sustainability assurance perspective, technological sustainability enhances the capability of organizations to implement, monitor, and continuously improve sustainability performance through digital innovation and advanced information systems [79]. Technological innovation also strengthens firms' internal innovation capabilities and entrepreneurial orientation, thereby facilitating sustainable organizational development and supporting long-term organizational adaptability [29,79]. Moreover, technological capabilities strengthen sustainability assurance processes and support evidence-based strategic decisions for long-term corporate sustainability [2]. From the perspective of Dynamic Capabilities Theory, technological capability enables firms to continuously adapt sustainability strategies under changing environmental conditions [79].

2.3. Previous AHP-Based Sustainability Assessment Studies

Although sustainability has been widely studied, relatively few studies have applied the AHP approach to sustainability issues in the fields of accounting and finance there [23,84]. Ünal [27] analyzed the insurance sector using the global fuzzy AHP–Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS) method and found that economic dimensions are decisive in sustainability performance.

More recently, Yazo-Cabuya et al. [85] combined the Decision-Making Trial and Evaluation Laboratory (DEMATEL) and AHP methods to prioritize organizational sustainability risks, demonstrating the usefulness of Multi-Criteria Decision-Making (MCDM) techniques for identifying critical sustainability factors under complex organizational conditions.

Mal et al. [28] comparatively examined corporate sustainability performance using the AHP method and showed that managers' focus on innovation, environmental policies, and shareholder responsibility strengthens sustainability. Reig-Mullor et al. [29] developed a new Neutrosophic AHP-TOPSIS-based approach to evaluate ESG corporate performance and offered an alternative solution to the problem of the traditional AHP method not adequately reflecting uncertainties.

Oral and Geçdoğan [30] analyzed the sustainability performance of banks traded on the Istanbul Stock Exchange using AHP and TOPSIS methods, revealing that banks place particular emphasis on economic, social, and environmental dimensions. In addition, there are studies analyzing sustainability performance in different sectors using AHP and derivative methods [26,84,86]. Di Vaio et al. [84] prioritized sustainability criteria in the food sector using the AHP method and found that the “people and society” criterion was of the highest importance. Özispa and Arabelen [87] determined the sustainability strategies of ports in three port cities in Türkiye based on expert opinions using the AHP method and defined priority strategies in environmental, economic, and social dimensions. Szabo et al. [26] developed a comprehensive model for prioritizing sustainable development strategic goals by combining the Priority Estimation Tool (PriEsT) and AHP

methods. Sofyalıoğlu and Sürücü [86] measured corporate sustainability performance in the white goods sector using the AHP-TOPSIS method, considering environmental, economic, and social dimensions.

Collectively, previous AHP-based studies demonstrate that the AHP method is an effective tool for measuring and prioritizing sustainability dimensions across different sectors [88,89]. Nevertheless, the majority of existing studies continue to rely on the traditional environmental–social–economic framework, while governance, ethics, organizational culture, behavioral factors, legal structures, and technological capabilities remain comparatively underrepresented [2,8].

Recent sustainability governance research increasingly emphasizes the importance of internal organizational capabilities together with external institutional pressures in achieving long-term sustainability outcomes [13,15,19]. However, the reviewed literature indicates that no previous AHP-based study has integrated these dimensions into a comprehensive internal–external sustainability hierarchy evaluated by licensed sustainability auditors. Accordingly, the present study extends previous AHP applications by proposing a multidimensional sustainability framework that combines governance, ethics, psychology, culture, environmental, social, economic, legal, and technological dimensions within a unified prioritization model.

3. Methodology

Based on the conceptual framework developed in the previous section, this study applies the AHP to prioritize the internal and external sustainability dimensions from the perspective of licensed sustainability auditors in Türkiye. Building upon the limitations identified in previous sustainability studies, this research expands the traditional sustainability framework by incorporating additional internal and external dimensions. Accordingly, the internal dimensions of sustainability are behavioral, cultural, ethical and governance, while the external dimensions are environmental, social, economic, legal and technological.

In this context, the AHP method was used to determine the relative priorities of the sustainability dimensions identified through the relevant literature. The methodological steps are presented in the following subsections.

Pairwise comparison data were collected from licensed sustainability auditors in Türkiye through a structured questionnaire. A total of 15 experts participated in the study, and all evaluations were conducted using Saaty's 1–9 scale [88].

3.1. Data Collection and Expert Profile

The data used in this study were collected through a structured pairwise comparison questionnaire designed in accordance with the AHP framework. The questionnaire was developed based on an extensive literature review and refined to reflect the internal (behavioral, cultural, ethical, governance) and external (environmental, social, economic, legal, technological) sustainability dimensions defined in this study.

The research population consisted of licensed sustainability auditors in Türkiye. These professionals were chosen based on their competence in sustainability assessment, regulatory compliance, and corporate reporting methods. Sustainability auditors shall be active independent auditors enrolled in the Official Register of Independent Auditors in accordance with regulations of the Public Oversight, Accounting and Auditing Standards Authority (KGG). Besides, they also have to meet the other qualification requirements for the authorization of sustainability auditors, e.g., passing the sustainability auditing examination and successfully completing the compulsory practical professional training [25]. Hence, the participants had the professional qualifications, knowledge of the regulations,

and practical experience to offer trustworthy and practice-based judgments for the AHP pairwise comparison process.

A total of 15 licensed sustainability auditors participated in the study. The participants were selected using a purposive sampling technique based on their professional certification and active involvement in sustainability-related auditing and reporting processes.

The respondents' professional experience ranged from 1 to 20 years, ensuring that the collected judgments reflect both practical field knowledge and institutional knowledge of sustainability assessment. All participants were informed about the purpose of the study and completed the questionnaire voluntarily.

Data collection was conducted between February and May 2025 using a hybrid data collection approach combining online and face-to-face surveys. Before analysis, all completed questionnaires were checked for completeness and logical consistency. No questionnaires were excluded during the data screening process, and all 15 expert responses were retained for the subsequent AHP analysis. Accordingly, the initial sample size and the final analytical sample were identical ($n = 15$).

The final dataset, consisting of pairwise comparison judgments from all 15 licensed sustainability auditors, served as the input for the AHP analysis. Individual judgments were aggregated using the geometric mean (Aggregation of Individual Judgments, AIJ) to obtain group-level consensus weights. Consistent with previous group AHP studies, no participant was excluded solely based on individual CR values because the final priority matrix was constructed using the geometric mean aggregation of all expert judgments. Table 1 presents the demographic characteristics of the licensed sustainability auditors participating in the study.

Table 1. Demographic Characteristics of Sustainability Auditors ($n = 15$).

Variable	Category	Frequency (<i>n</i>)	Percentage (%)
Profession	Licensed Sustainability Auditor and Independent Auditor	15	100.0
Gender	Female	7	46.7
	Male	8	53.3
Education Level	Bachelor's Degree	10	66.7
	Graduate Degree (Master's/PhD)	5	33.3
Age	25–30	2	13.3
	31–35	3	20.0
	36–40	6	40.0
	41–45	2	13.3
	46–50	2	13.3
	51 and above	0	0.0
Professional Experience	1–5 years	2	13.3
	6–10 years	3	20.0
	11–15 years	6	40.0
	16–20 years	4	26.7
	21–25 years	0	0.0
	26 years and above	0	0.0

As shown in Table 1, all 15 respondents (100%) were licensed sustainability auditors who were also authorized independent auditors. Of the participants, 53.3% ($n = 8$) were male and 46.7% ($n = 7$) were female. Regarding educational attainment, 66.7% ($n = 10$) held a bachelor's degree, while 33.3% ($n = 5$) had graduate-level education. The largest age

group was 36–40 years (40.0%, $n = 6$), followed by 31–35 years (20.0%, $n = 3$). Participants aged 25–30, 41–45, and 46–50 each represented 13.3% ($n = 2$) of the sample. In terms of professional experience, most respondents had 11–15 years of experience (40.0%, $n = 6$), followed by 16–20 years (26.7%, $n = 4$), 6–10 years (20.0%, $n = 3$), and 1–5 years (13.3%, $n = 2$). The demographic profile indicates that the sample consisted of experienced sustainability auditors with diverse age groups and educational backgrounds, providing a robust basis for the AHP analysis.

3.2. Analytic Hierarchy Process (AHP)

In this study, the AHP, one of the most widely used MCDM methods, was employed. The AHP method was developed to solve MCDM problems and helps decision makers identify the most appropriate alternative by addressing the problems in a hierarchical order and comparing multiple factors and sub-factors with each other through pairwise comparisons [89–91]. In this method, which relies on expert opinion for rating on the criteria determined within the scope of the research, the technique developed by Saaty [88] is used to determine the importance levels and ultimately produce a priority ranking of the decision alternatives. In this technique, while ranking among the criteria for solving a problem, each criterion is evaluated separately. Criteria are ranked by pairwise comparison according to the importance of expert opinions by creating a pairwise comparison matrix. One of the main advantages of AHP than other MCDM techniques is that it can be applied effectively in complex decision-making problems that include both subjective and objective judgments [89]. The AHP method consists of four main steps, and these steps are as follows;

Step 1: Defining the Decision-Making Problem: In the AHP, the hierarchical structure is created by first defining the problem and the objective and then determining the necessary criteria and sub-criteria (Figure 1). The hierarchy developed in this study consists of the overall goal, the main sustainability dimensions (criteria), and the sub-dimensions representing each criterion.

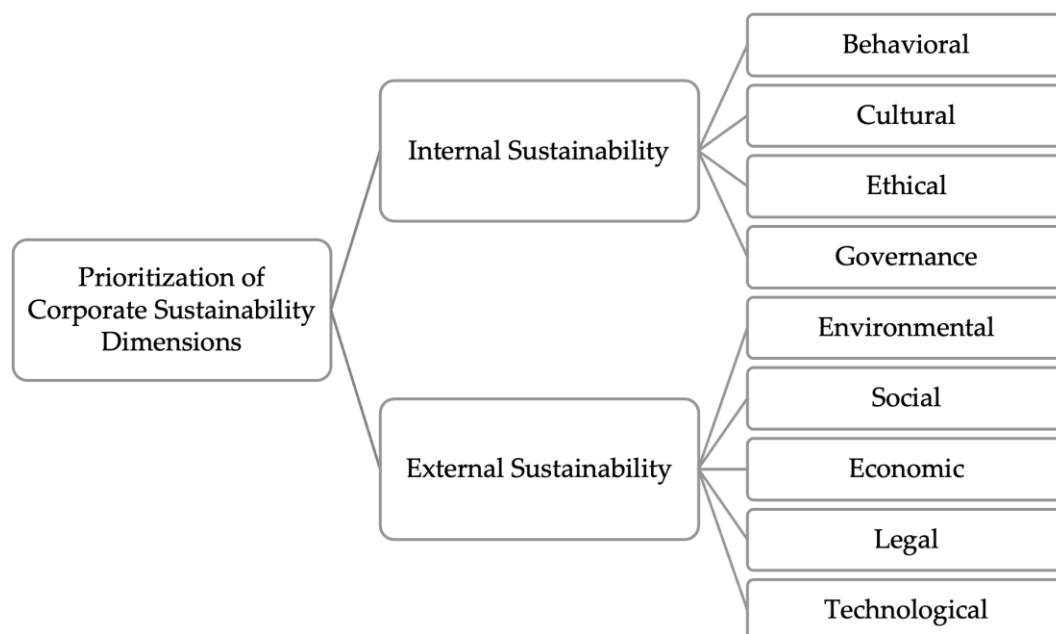


Figure 1. Research-specific AHP hierarchy for prioritizing corporate sustainability dimensions from an internal–external perspective. Source: created by the authors.

Step 2: Creating the Pairwise Comparison Matrix: In this step, each decision criterion is systematically compared with the others to establish its relative priority within the decision framework. The comparisons are performed using Saaty's 1–9 fundamental scale [88], which enables experts to express the strength of preference between pairs of criteria. The corresponding evaluation scale is summarized in Table 2.

Since the pairwise comparison judgments were obtained from multiple experts, the individual comparison matrices were aggregated using the Aggregation of Individual Judgments (AIJ) approach. The geometric mean method was applied to combine individual judgments and obtain a single group comparison matrix [92]. The aggregation formula is presented below:

$$a_{ij} = \left(\prod_{k=1}^m a_{ij}^{(k)} \right)^{1/m} \quad (1)$$

where a_{ij} represents the aggregated comparison value between criteria i and j , $a_{ij}^{(k)}$ represents the judgment of the k -th expert, and m denotes the number of experts.

Following the aggregation process, the priority weights of the criteria were calculated using Saaty's principal eigenvector method [90]. The normalized eigenvector corresponding to the maximum eigenvalue (λ_{max}) was considered the priority vector of each criterion.

Table 2. Importance Levels Used in Comparisons.

Importance	Definition	Description
1	Equal importance	Two criteria contribute equally to the objective.
3	Moderate importance	One criterion is moderately more important than the other.
5	Strong importance	One criterion is strongly more important than the other.
7	Very strong importance	One criterion is very strongly more important than the other.
9	Extreme importance	One criterion has an extreme degree of importance over the other.
2, 4, 6, 8	Intermediate values	Intermediate judgments between two adjacent levels.

Source: Saaty [90].

Step 3: Calculation of Criteria Weights: After constructing the aggregated pairwise comparison matrix, the relative weights of the criteria were estimated using Saaty's principal eigenvector method [90]. In this approach, the priority vector (W) is obtained from the normalized principal right eigenvector corresponding to the maximum eigenvalue (λ_{max}) of the pairwise comparison matrix. The resulting priority weights represent the relative importance of the criteria. All calculations were performed using Python version 3.14 with the NumPy and SciPy libraries.

Step 4: Calculation of Consistencies: In the AHP methodology, consistency refers to the logical coherence of pairwise comparison judgments. For example, if criterion A is considered more important than criterion B, and criterion B is more important than criterion C, then criterion A should also be more important than criterion C. To evaluate the consistency of the aggregated pairwise comparison matrices, the maximum eigenvalue (λ_{max}), the Consistency Index (CI), and the Consistency Ratio (CR) were calculated [90]. The CI was computed using the following equation:

$$CI = \frac{\lambda_{max} - n}{n - 1} \quad (2)$$

where $\lambda_{\max}$ denotes the maximum eigenvalue of the pairwise comparison matrix and n is the number of criteria.

The Consistency Ratio (CR) was then calculated as follows:

$$CR = \frac{CI}{RI} \quad (3)$$

where RI is the Random Index proposed by Saaty for matrices of different dimensions. The Random Index (RI) values proposed by Saaty for different matrix dimensions are presented in Table 3.

Table 3. Random Index (RI) Values.

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.48	1.56	1.57	1.59

In this study, RI values corresponding to matrices of size $n = 2$, $n = 4$, and $n = 5$ were used to assess the consistency of the aggregated pairwise comparison matrices. According to Saaty [90], a Consistency Ratio of less than 0.10 indicates an acceptable level of consistency in the pairwise comparison judgments.

Although several individual pairwise comparison matrices produced Consistency Ratio (CR) values above the recommended threshold of 0.10, all expert judgments were retained because the study adopted the - AII approach. Following the recommendations of Saaty [90] and Forman and Peniwati [92], the individual pairwise comparison matrices were aggregated using the geometric mean to construct a single consensus matrix. Consequently, consistency was evaluated only for the aggregated group comparison matrices rather than for the individual judgments.

All AHP calculations, including the aggregation of expert judgments, eigenvalue estimation, priority weight calculation, and consistency analysis, were performed in Python using the NumPy and SciPy libraries.

4. Results

4.1. AHP Results

The aim of this study is to identify and prioritize sustainability dimensions (criteria). Accordingly, the framework of the research is presented in Figure 2.

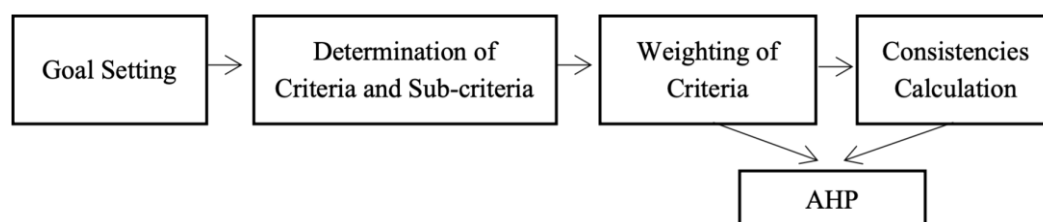


Figure 2. Research Framework. Source: created by authors.

- Determination of Purpose:** In this section, the purpose of the study should be determined first. The objective of this study is to prioritize the internal and external dimensions of sustainability.
- Determination of Criteria:** The decision-making group of this study consists of licensed sustainability auditors operating in Türkiye. These professionals were selected using purposive expert sampling because they possess specialized knowledge and practical experience in sustainability reporting, ESG disclosure, corporate governance, internal control systems, regulatory compliance, and sustainability assurance [93,94]. Compared with individual organizational stakeholders, licensed

sustainability auditors evaluate sustainability practices across different organizations and sectors, providing a broader and more independent assessment perspective [17,18]. This multidisciplinary perspective enables them to evaluate sustainability in a comprehensive and comparatively objective manner [16]. Since sustainability assurance has only recently been institutionalized in Türkiye under the supervision of the KGK [25], the number of officially authorized sustainability auditors remains limited. Therefore, purposive sampling was considered the most appropriate approach for identifying highly qualified experts capable of evaluating the relative importance of internal and external sustainability dimensions [95,96]. Unlike managers, shareholders, customers, or other organizational stakeholders, licensed sustainability auditors evaluate sustainability from an independent assurance perspective rather than from operational or financial interests. While managers often prioritize operational efficiency and strategic performance, shareholders tend to emphasize financial value creation and risk management, and customers generally focus on product quality, transparency, and social responsibility. In contrast, licensed sustainability auditors simultaneously assess governance structures, ESG reporting quality, internal control systems, regulatory compliance, and sustainability assurance across organizations operating in different industries. Consequently, although the fundamental sustainability dimensions remain conceptually similar across stakeholder groups, their perceived relative importance may differ depending on stakeholder roles and responsibilities. Accordingly, the findings of this study should be interpreted as reflecting the prioritization of sustainability dimensions from the perspective of licensed sustainability auditors rather than representing the preferences of all organizational stakeholder groups. The main and sub-criteria of sustainability were identified through a review of the relevant literature and expert opinions and are presented in Table 4.

- (c) **Weighting of Criteria:** At this stage, a questionnaire was developed and administered to the decision makers to obtain pairwise comparisons of the criteria and sub-criteria. The decision makers were asked to indicate the relative importance of each sustainability dimension by performing pairwise comparisons using Saaty's 1–9 scale [88]. The relative weights of the criteria and sub-criteria were calculated based on the aggregated expert judgments. Table 5 presents the aggregated AHP results, showing the relative weights assigned to the internal and external sustainability dimensions.

Table 4. Research Criteria and Sub-Criteria.

<i>Criteria</i>	<i>Sub Criteria</i>	<i>Description</i>
<i>Internal</i>	<i>Behavioral</i>	This dimension encompasses the attitudes, habits, and observable behaviors of individuals, communities, and organizations that promote sustainable practices. It reflects the extent to which sustainability principles are translated into everyday actions and organizational behavior.
	<i>Cultural</i>	The cultural dimension of sustainability emphasizes the preservation and transmission of cultural values, traditions, and heritage across generations. It seeks to ensure that future generations are able not only to appreciate and understand their cultural legacy but also to sustain, adapt, and further develop it in response to changing social conditions. In this sense, cultural sustainability strengthens the continuity of the values that connect the past, present, and future.
	<i>Ethical</i>	This dimension makes it possible to evaluate the moral relations between humans and nature in temporal terms. In this respect, the principle of sustainable ethics will ensure justice, rights and responsibilities not only within generations but also between generations.

External	Governance	This dimension prioritizes and decides on actions to be taken on the direct and indirect impacts of sustainability, considering sustainable policies, strategies and legal responsibilities.
	Environmental	This dimension is important for the preservation of the natural order and the self-renewal of resources.
	Social	This dimension means building healthy communities for the future, based on people's needs. A socially sustainable society is one that ensures social well-being today and in the future with sufficient resilience to potential social problems.
	Economic	This dimension refers to the efficient and balanced management of available economic resources.
	Legal	This dimension refers to laws, regulations, international agreements and legal arrangements established to ensure environmental, economic and social sustainability. This dimension provides the legal framework to ensure that individuals, companies and governments act in accordance with the principles of sustainable development.
	Technological	This dimension defines sustainable technology as modern technologies that take care of natural resources and promote economic and social development.

Table 5. Pairwise Comparison Matrix and Priority Weights of Main Sustainability Dimensions.

Criteria	Internal Dimensions	External Dimensions	Priority Weight	Rank
Internal Dimensions	1.000	0.409	0.2903	2
External Dimensions	2.445	1.000	0.7097	1

Consistency Ratio (CR) = 0.000.

Table 5 presents the aggregated pairwise comparison matrix and the priority weights of the two main sustainability dimensions derived from the judgments of licensed sustainability auditors. The consistency ratio of the aggregated matrix was calculated as CR = 0.000, indicating perfect consistency among the aggregated expert judgment's and confirming the reliability of the prioritization results.

The findings reveal that external sustainability dimensions received a substantially higher priority weight (70.97%) than internal sustainability dimensions (29.03%). This result indicates that sustainability auditors perceive corporate sustainability primarily as a process shaped by external environmental conditions, regulatory requirements, technological developments, market dynamics, and stakeholder expectations rather than being shaped solely by internal organizational characteristics.

The dominance of the external dimension can be explained by the rapidly evolving sustainability reporting environment. In recent years, organizations have been exposed to increasing pressure arising from mandatory sustainability reporting standards, ESG disclosure requirements, independent assurance practices, climate-related regulations, and stakeholder expectations. Consequently, licensed sustainability auditors—whose professional responsibilities focus on evaluating organizations' compliance with these external requirements—naturally assign greater importance to dimensions originating from the external institutional environment.

Nevertheless, the relatively lower weight assigned to the internal dimension should not be interpreted as indicating that internal organizational factors are unimportant. Rather, it suggests that auditors perceive internal sustainability capabilities as mechanisms that enable organizations to respond effectively to external sustainability pressures. Governance structures, ethical values, organizational culture, and behavioral factors continue to play a critical supporting role by facilitating compliance, accountability, and the successful implementation of sustainability strategies. Therefore, the findings imply that external sustainability pressures function as the primary drivers of corporate sustainability,

whereas internal organizational capabilities serve as enabling mechanisms through which organizations adapt to these external expectations.

Overall, the results demonstrate that sustainability is viewed as a multidimensional phenomenon in which external institutional forces exert greater influence on organizational sustainability priorities than internal organizational characteristics. This finding supports the perspective that contemporary corporate sustainability is increasingly driven by regulatory developments, market expectations, technological transformation, and societal demands, highlighting the growing importance of the external sustainability environment in shaping organizational decision-making. Table 6 presents the aggregated pairwise comparison matrix and the local priority weights of the internal sustainability dimensions.

Table 6. Pairwise Comparison Matrix and Local Priority Weights of Internal Sustainability Dimensions.

Criteria	Behavioral	Cultural	Ethical	Governance	Local Weight	Rank
Behavioral	1.000	0.695	0.337	0.563	0.1332	4
Cultural	1.438	1.000	0.253	0.419	0.1386	3
Ethical	2.971	3.959	1.000	1.336	0.4361	1
Governance	1.777	2.389	0.748	1.000	0.2922	2

Consistency Ratio (CR) = 0.022.

As shown in Table 6, The consistency ratio of the aggregated matrix was calculated as CR = 0.022, which is well below the acceptable threshold of 0.10 proposed by Saaty. This result confirms that the collective judgments of the licensed sustainability auditors are highly consistent and that the obtained priority weights are reliable for evaluating the relative importance of the internal sustainability dimensions.

Among the four internal sustainability dimensions, ethical dimension received the highest local priority weight (43.61%), followed by governance (29.22%), cultural 13.86%), and behavioral (13.32%). These findings indicate that the experts believe the two main internal drivers of corporate sustainability are ethics and governance. The combination of these two factors explains 72.83% of the overall weight assigned to the internal sustainability category, which means that sustainability is mostly seen as a function of ethical duty and good governance and not as a consequence of human or cultural qualities.

The governance dimension, which ranked second, also received a substantial priority weight, highlighting the strategic importance of governance mechanisms in implementing sustainability practices. Effective governance offers the frameworks inside an organization to include sustainability into strategic decision making, identify responsibilities, monitor sustainability performance and ensure compliance with regulatory requirements. Governance for sustainability auditors is the institutional process via which sustainability objectives are converted into organizational policy and operational procedures. Thus, the substantial weighting given to ethics and governance indicates the increasing importance of accountability-oriented management systems in current sustainable practices.

The prevalence of the ethical dimension indicates licensed sustainability auditors perceive ethical values as the basic foundation of sustainable organizational practices. Ethical values including transparency, integrity, accountability, fairness and responsibility are important to ensure credibility of the sustainability reporting and to strengthen stakeholder confidence. As sustainability assurance goes beyond the verification of quantitative performance indicators to assess the reliability and veracity corporate sustainability disclosures, the ethical commitment seems to be the cornerstone of the long-term corporate sustainability. So, organizations with strong ethical foundations are considered more

capable of producing reliable sustainability information and maintaining stakeholder legitimacy.

In contrast, cultural and behavioral sustainability dimensions received considerably lower priority weights. This finding does not imply that these dimensions are unimportant; rather, it suggests that experts perceive them as supportive organizational capabilities whose influence on sustainability is generally indirect. Organizational culture contributes to the institutionalization of sustainability by fostering shared values, collaboration, and long-term commitment, while behavioral sustainability dimension reflects individual awareness, motivation, and pro-sustainability attitudes. However, unlike ethics and governance, these dimensions do not directly determine organizational accountability or regulatory compliance, which may explain their comparatively lower importance in the judgments of licensed sustainability auditors.

Overall, the results indicate that internal sustainability is primarily interpreted through an institutional and governance-oriented perspective. Rather than emphasizing individual behavioral characteristics or organizational culture alone, sustainability auditors assign greater importance to ethical responsibility and governance quality, reflecting the increasing significance of transparency, accountability, and effective oversight in contemporary sustainability assurance and corporate governance practices. Table 7 presents the aggregated pairwise comparison matrix and the local priority weights of the external sustainability dimensions.

Table 7. Pairwise Comparison Matrix and Local Priority Weights of External Sustainability Dimensions.

Criteria	Environmental	Social	Economic	Legal	Technological	Local Weight	Rank
Environmental	1.000	1.464	1.797	2.978	1.327	0.3088	1
Social	0.683	1.000	1.206	0.999	0.819	0.1778	3
Economic	0.556	0.829	1.000	1.516	0.834	0.1722	4
Legal	0.336	1.001	0.660	1.000	0.908	0.1416	5
Technological	0.754	1.220	1.199	1.102	1.000	0.1996	2

Consistency Ratio (CR) = 0.015.

As shown in Table 7, the aggregated comparison matrix yielded a Consistency Ratio (CR) of 0.015, which is considerably lower than the acceptable threshold of 0.10. This finding indicates a high level of agreement among the licensed sustainability auditors and confirms the reliability of the pairwise comparison judgments used to determine the relative importance of the external sustainability dimensions.

Among the five external sustainability dimensions, environmental sustainability received the highest local priority weight (30.88%), followed by technological sustainability (19.96%), social sustainability (17.78%), economic sustainability (17.22%), and legal sustainability (14.16%). The results suggest that environmental concerns are still the key external driver of corporate sustainability from the perspective of licensed sustainability auditors.

The significance of the environmental dimension is a reflection of the growing importance of climate change, resource depletion, biodiversity loss, greenhouse gas emissions, and environmental risk management on the sustainability agenda. Recent regulatory developments and international sustainability reporting frameworks have put environmental performance at the heart of corporate accountability. For this reason, sustainability auditors appear to treat environmental responsibility as the most important external requirement for organizational sustainability performance and long-term corporate resilience.

The technological dimension, which ranked second, also received a relatively high-priority weight. This conclusion implies that auditors consider the technology innovation as an important driver for sustainability implementation. Digital technologies, such as artificial intelligence, blockchain, big data analytics and digital reporting systems, can enhance the transparency, traceability and dependability of sustainability information and also improve organizational decision-making and assurance procedures. The high ranking of technology also signals that sustainability is increasingly driven by digital transformation and innovation, rather than being confined to traditional environmental management approaches alone.

The social and economic dimensions received very similar priority weights, accounting for 17.78% and 17.22%, respectively. Their close ranking suggests that experts perceive these dimensions as complementary components of corporate sustainability. Social sustainability supports stakeholder participation, employee wellbeing, social fairness and community development, while economic sustainability offers the financial stability and resource efficiency needed to sustain long-term sustainability projects. The relatively balanced weights assigned to these dimensions indicate that sustainable organizational performance depends on simultaneously creating social value and maintaining economic viability.

The legal dimension ranked fifth, with a local priority weight of 14.16%. Although it received the lowest weight among the external dimensions, this finding should not be interpreted as implying limited importance. Rather, legal sustainability may be understood as a core institutional framework that governs organizational behavior by establishing required norms, regulatory compliance requirements, and accountability mechanisms. Because legal compliance is generally regarded as a minimum obligation rather than a strategic source of competitive advantage, sustainability auditors may have assigned comparatively lower importance to this dimension when prioritizing sustainability dimensions.

Overall, the findings suggest that external sustainability is mainly influenced by environmental challenges and technological transformation while social, economic and legal dimensions collectively create the institutional and operational conditions for the sustainable organizational development. The findings suggest that licensed sustainability auditors perceive organizations as operating within an increasingly complex external environment in which ecological pressures, technological innovation, stakeholder expectations, and regulatory frameworks jointly shape sustainability priorities and strategic decision-making. The global priority weights of all sustainability dimensions are shown in Table 8. They are generated by combining the weights of the main dimensions with the local priority weights of the respective sub-dimensions.

Table 8. Dimension Global Priority Weights of Sustainability Dimensions.

Rank	Sustainability Dimension	Main Dimension	Main Weight	Local Weight	Global Weight
1	Environmental	External	0.7097	0.3088	0.2191
2	Technological	External	0.7097	0.1996	0.1417
3	Ethical	Internal	0.2903	0.4361	0.1266
4	Social	External	0.7097	0.1778	0.1262
5	Economic	External	0.7097	0.1722	0.1222
6	Legal	External	0.7097	0.1416	0.1005
7	Governance	Internal	0.2903	0.2922	0.0848
8	Cultural	Internal	0.2903	0.1386	0.0402
9	Behavioral	Internal	0.2903	0.1332	0.0387

As indicated in Table 8, this global prioritization provides a comprehensive evaluation of the relative importance of each sustainability dimension in achieving the overall objective of corporate sustainability.

The results indicate that environmental sustainability ranked first with a global priority weight of 21.91%, making it the most influential sustainability dimension from the perspective of licensed sustainability auditors. This finding suggests that environmental issues, including climate change, efficient resource utilization, biodiversity conservation, pollution control, and environmental risk management, continue to represent the primary external drivers of sustainable organizational development. The prominence of the environmental dimension reflects the increasing importance of global environmental challenges and the growing emphasis placed on environmental performance within contemporary sustainability reporting and assurance frameworks.

The second highest-ranked dimension was technological sustainability (14.17%), highlighting the strategic role of technological innovation in supporting corporate sustainability. The relatively high priority attributed to this dimension indicates that auditors recognize the role of digital transformation, artificial intelligence, blockchain technologies, data analytics, and advanced reporting systems as important ways to improve transparency, accountability and efficiency of sustainability management. This finding further suggests that technological capability is increasingly perceived as a prerequisite for reliable sustainability reporting and evidence-based decision-making.

Among the internal sustainability dimensions, ethical sustainability ranked third with a global priority weight of 12.66%, making it the highest ranked internal dimension. The conclusion shows that ethical responsibility is the essential internal mechanism underpinning sustainable organizational practices, nevertheless, external sustainability dimensions are accorded more overall value. Ethical principles such as integrity, fairness, transparency, and accountability appear to provide the normative foundation upon which credible sustainability reporting and assurance processes are built.

The social (12.62%) and economic (12.22%) dimensions occupied the fourth and fifth positions, respectively, with very similar global priority weights. Their close ranking indicates that sustainability auditors perceive social well-being and economic viability as complementary rather than competing objectives. While social sustainability strengthens stakeholder relationships, employee welfare, and social legitimacy, economic sustainability provides the financial resources and long-term resilience required to sustain organizational sustainability initiatives.

The legal dimension ranked sixth with a global priority weight of 10.05%, followed by governance (8.48%), cultural sustainability (4.02%), and behavioral sustainability (3.87%). Although governance emerged as the second most important internal sustainability dimension in the local analysis, its global weight decreased because the internal sustainability category itself received a lower overall priority than the external category. Similarly, cultural and behavioral sustainability occupied the final positions, suggesting that experts perceive these dimensions primarily as supportive organizational capabilities rather than direct determinants of corporate sustainability performance.

Overall, the global ranking demonstrates that licensed sustainability auditors evaluate corporate sustainability through a balanced interaction between external institutional conditions and internal organizational capabilities. However, the predominance of environmental and technological dimensions, together with the strong position of ethical sustainability, indicates that contemporary corporate sustainability is increasingly driven by environmental pressures, technological transformation, and ethical accountability. These findings suggest that organizations seeking to strengthen their sustainability performance should not only improve their environmental and technological capabilities but also

reinforce ethical principles and governance mechanisms that support transparent, accountable, and credible sustainability practices.

- (d) Calculation of Consistencies: Consistency ratios for the main and sub-criteria were calculated and the consistency ratios for the main criteria are presented in Appendix A.

The consistency of individual and aggregated judgements was analyzed in order to further evaluate the dependability of the AHP results. The individual pairwise comparison matrices of the 15 licensed sustainability auditors were aggregated by the AIJ methodology based on the geometric mean method, and group comparison matrices were generated.

The individual consistency analysis showed that 10 out of 15 participants (66.7%) achieved an acceptable consistency level ($CR < 0.10$) for the internal sustainability dimensions, while 13 out of 15 participants (86.7%) achieved acceptable consistency levels for the external sustainability dimensions. Although some individual comparison matrices exceeded the recommended CR threshold of 0.10, no participant was excluded from the analysis in order to preserve the collective expert judgment and obtain a comprehensive group evaluation.

The consistency ratios of the aggregated group matrices were then recalculated. The results showed that the internal sustainability dimensions had a consistency ratio of $CR = 0.022$, while the external sustainability dimensions had a consistency ratio of $CR = 0.015$. Both values were below the acceptable threshold of 0.10 proposed by Saaty, confirming the consistency and reliability of the aggregated expert judgments used in the prioritization process.

4.2. Sensitivity Analysis

An additional sensitivity analysis was conducted to evaluate the robustness of the AIJ-based group decision model. Sensitivity analysis is the last step in AHP decision-making process. This is used to examine if controlled variations of decision judgements can affect the stability of the resulting priority rankings. Stable rankings indicate a robust decision model, whereas substantial changes suggest sensitivity to the underlying judgements [91]. In addition, local stability analysis has been recognized as an effective approach for assessing the robustness of AHP results under variations in pairwise comparison judgments [97], while the Geometric Consistency Index (GCI) provides further theoretical support for evaluating the reliability of aggregated judgments [98]. To facilitate reproducibility, the Python scripts used for AIJ aggregation, consistency analysis, and sensitivity analysis, together with the sensitivity analysis results and the accompanying report, are provided in the Supplementary Materials (Supplementary File S1).

The AIJ approach aggregates individual pairwise comparison matrices using a geometric mean and does not necessitate the elimination of participants simply due to their individual consistency ratios. For this reason, participants P1 and P8 were retained in the primary analysis, despite their relatively high individual consistency ratios.

However, a scenario-based sensitivity analysis was done to analyze the potential influence of these participants on the group decision model. Four scenarios were evaluated: (i) the original dataset including all participants, (ii) the exclusion of Participant P1, (iii) the exclusion of Participant P8, and (iv) simultaneous exclusion of Participants P1 and P8. For each scenario, new group pairwise comparison matrices were generated using the geometric mean aggregation procedure. Subsequently, the weights of the priorities, global rankings, and consistency ratios (CRs) were recalculated and compared with the original AIJ results. The comparison presented in Table 9 demonstrates that the global priority weights remained highly stable across all four scenarios.

Table 9. Comparison of Global Priority Weights Under Different Sensitivity Scenarios.

Rank	Dimension	Original	Re-move_P1	Re-move_P8	Re-move_P1_P8	$\Delta\%$ Re-move_P1	$\Delta\%$ Re-move_P8	$\Delta\%$ Re-move_P1_P8
1	Environmental	0.219150	0.224248	0.236398	0.244038	2.33	7.87	11.36
2	Technological	0.141657	0.149995	0.138756	0.148048	5.89	−2.05	4.51
3	Ethical	0.126592	0.144432	0.125154	0.127471	14.09	−1.14	0.69
4	Social	0.126204	0.122052	0.111576	0.114053	−3.29	−11.59	−9.63
5	Economic	0.122184	0.115755	0.110952	0.111199	−5.26	−9.19	−8.99
6	Legal	0.100524	0.104409	0.101397	0.106462	3.87	0.87	5.91
7	Governance	0.084807	0.069616	0.096357	0.079047	−17.91	13.62	−6.79
8	Cultural	0.040223	0.034953	0.040126	0.035821	−13.1	−0.24	−10.94
9	Behavioral	0.038660	0.034541	0.039285	0.033861	−10.65	1.62	−12.41

As shown in Table 9, although minor numerical differences were observed following the exclusion of Participants P1 and/or P8, the overall priority structure was largely preserved. Environmental Sustainability consistently remained the highest ranked criterion, followed by Technological Sustainability, whereas only minor changes were observed among the middle-ranked criteria.

The largest percentage variation in global priority weights was 17.91% (Governance under the Remove_P1 scenario), while the maximum ranking change observed across all scenarios was only two positions. Furthermore, all recalculated group consistency ratios remained well below the commonly accepted threshold of $CR < 0.10$, indicating that the aggregated judgment matrices maintained satisfactory consistency throughout the sensitivity analysis. Table 10 presents the Consistency Ratios (CRs) of the AIJ model under different sensitivity scenarios.

Table 10. Consistency Ratios of the AIJ Model under Different Sensitivity Scenarios.

Scenario	Main CR	Internal CR	External CR
Original	0.0000	0.0223	0.0154
Remove_P1	0.0000	0.0177	0.0241
Remove_P8	0.0000	0.0134	0.0205
Remove_P1_P8	0.0000	0.0096	0.0308

Table 10 shows that all recalculated consistency ratios remained well below the commonly accepted threshold of $CR < 0.10$ across all sensitivity scenarios. Although slight variations were observed following the exclusion of Participants P1 and/or P8, none of the group decision matrices approached the inconsistency threshold. These findings further confirm the robustness and internal consistency of the AIJ-based group decision model.

Overall, the results indicate that excluding Participants P1 and/or P8 had only a limited influence on the final priority weights and did not substantially alter the overall ranking structure. These findings demonstrate that the AIJ-based AHP model is robust with respect to the inclusion or exclusion of participants exhibiting relatively high individual consistency ratios, thereby providing additional evidence for the reliability and stability of the reported prioritization results. The stability of the ranking structure across all scenarios supports the methodological decision to retain all participants in the original AIJ analysis despite the relatively high individual consistency ratios of Participants P1 and P8.

5. Discussion

This study contributes to the corporate sustainability literature by extending previous AHP-based sustainability assessment approaches beyond the traditional environmental–social–economic framework. Previous studies applying AHP and related MCDM techniques have generally focused on prioritizing sustainability performance through economic, environmental, and social dimensions. For example, Ünal [27] found that economic dimensions were decisive in evaluating sustainability performance in the insurance sector, while Oral and Geçdoğan [30] demonstrated that economic, social, and environmental dimensions were the dominant sustainability factors in the banking sector. Similarly, Özispa and Arabelen [87] identified environmental, economic, and social strategies as the key priorities in port sustainability assessment.

Although these studies demonstrate the effectiveness of AHP in prioritizing sustainability dimensions, they largely maintain the conventional sustainability perspective based on the triple bottom line approach proposed by Elkington [4]. The present study expands this perspective by incorporating internal organizational capabilities (ethical, governance, cultural, and behavioral dimensions) together with external sustainability conditions (environmental, social, economic, legal, and technological dimensions). This broader framework provides a more comprehensive understanding of sustainability by recognizing that sustainability performance is shaped not only by external outcomes but also by internal institutional capabilities.

The findings indicate that external sustainability dimensions received a higher overall priority (70.97%) compared with internal sustainability dimensions (29.03%). This result contrasts with earlier research that focused on economic or performance-oriented sustainability criteria. For instance, Ünal [27] identified economic sustainability as the dominant dimension in the insurance sector, whereas Mal et al. [28] highlighted innovation capability, environmental policies, and shareholder responsibility as major determinants of corporate sustainability performance. The difference may be explained by the professional perspective of the decision makers included in this study. Licensed sustainability auditors see organizations mainly from sustainability reporting, assurance, compliance and accountability viewpoints, unlike managers or investors. As a result, their assessments may be more influenced by external institutional pressures, regulatory changes and sustainability reporting requirements.

The dominance of the external sustainability dimension is also consistent with recent developments in sustainability governance and reporting. Growing regulatory pressure, mandated sustainability reporting and international sustainability frameworks have converted sustainability from a voluntary organizational endeavor to an institutional expectation. Recent studies highlight the increasing role of institutional pressure and external stakeholders' expectations on sustainability performance. Kim et al. [13] demonstrated that institutional factors play an important role in shaping ESG performance, while Iguchi et al. [14] highlighted the importance of external environmental conditions and international sustainability pressures on corporate strategies. Therefore, the high priority assigned to external dimensions in this study reflects the changing sustainability landscape in which organizations operate.

Among the internal sustainability dimensions, ethical sustainability achieved the highest local priority weight (43.61%), followed by governance (29.22%). This finding highlights the importance of ethical responsibility and governance mechanisms as fundamental organizational capabilities supporting sustainability implementation. Previous research has emphasized that governance structures support sustainable development by establishing institutional arrangements, coordination mechanisms, and accountability frameworks [99–101]. Governance approaches also highlight the importance of adaptive capacity, stakeholder participation, and multi-level decision-making processes in

addressing sustainability challenges [102–104]. Moreover, international organizations have recognized governance as an important factor to increase the efficacy of the institutions and sustainable development practices [105,106]. Similarly, Prencipe [2] argues that corporate sustainability requires accountability mechanisms that move beyond regulatory compliance toward legitimacy and responsible governance. The present findings extend this perspective by showing that, from the viewpoint of sustainability auditors, ethical responsibility represents the primary internal foundation of credible sustainability practices.

The importance assigned to ethics is also consistent with previous research emphasizing the relationship between business ethics and sustainable development. Krishna et al. [48] and Crane et al. [50] argue that ethical principles such as fairness, responsibility, and transparency are central elements of sustainable business practices. Dyllick and Muff [1] further suggest that genuine sustainability requires organizations to move beyond compliance-oriented approaches and develop deeper ethical commitments. The high position of ethical sustainability in this study, therefore, implies that auditors believe that the credibility of sustainability is closely associated with organizational integrity and responsible decision-making.

Governance ranked as the second most important internal dimension, supporting previous findings regarding the central role of governance in sustainability implementation. Meuleman [102], UNDP [106] and Lockwood et al. [104] argue that effective governance provides the coordination, accountability, involvement and monitoring mechanisms required for sustainable development. Moreover, recent empirical research indicates that corporate governance procedures have a favorable impact on sustainability performance [24]. The results of this study support these ideas by showing that governance is an internal enabling mechanism via which sustainability objectives may be transformed into organizational policies and assurance processes.

In contrast, behavioral and cultural dimensions received relatively lower priority weights among internal sustainability dimensions. This result does not imply that these dimensions lack importance; rather, auditors may perceive their influence as indirect and long-term. Previous studies have shown that cultural sustainability contributes to sustainability transitions by shaping values, identities, and collective behaviors [11,39,40,42,44,107], while psychological factors influence sustainable behavior through awareness, motivation, and individual engagement [31,33,36]. However, these aspects are more difficult to be measured in auditing and assurance processes compared to governance and ethics, which might explain the less prioritization by the experts.

Regarding external sustainability dimensions, environmental sustainability ranked first (30.88%), followed by technological sustainability (19.96%). This finding differs from some previous AHP studies that identified economic sustainability as the dominant factor. While Ünal [27] emphasized the importance of economic sustainability, the present findings indicate that sustainability auditors increasingly perceive environmental risks and technological transformation as central sustainability drivers. This difference may reflect the increasing influence of climate change concerns, environmental regulations, and sustainability reporting standards.

The strong position of environmental sustainability is consistent with the growing emphasis on climate-related risks and environmental accountability. Previous research has identified environmental sustainability as a fundamental component of long-term sustainable development [55,66], while international initiatives such as the Paris Agreement have strengthened the role of environmental responsibility in corporate decision-making [75]. Therefore, the first position of environmental sustainability in the present study reflects the increasing institutionalization of environmental expectations.

Technological sustainability ranked second among external dimensions, indicating that auditors recognize technology as an important facilitator of sustainability transformation. This finding supports George et al. [108], who emphasized that digital innovations contribute to sustainability by improving transparency, monitoring capabilities, and climate-related solutions. Similarly, Mal et al. [28] highlighted innovation capability as an important determinant of corporate sustainability performance. Thus, technological capability appears increasingly important not only as an operational resource but also as a mechanism supporting sustainability reporting and assurance.

The relatively lower ranking of the legal dimension may be explained by its perception as a mandatory requirement rather than a strategic sustainability advantage. González [70] argues that legal frameworks provide the necessary institutional foundation for sustainability by establishing minimum standards and compliance requirements. However, sustainability auditors may consider legal compliance as a prerequisite condition rather than a differentiating sustainability capability, which explains its lower priority compared with environmental and technological dimensions.

Overall, this study demonstrates that sustainability auditors perceive corporate sustainability as a multidimensional phenomenon shaped by both external institutional pressures and internal organizational capabilities. Compared with previous AHP-based studies that primarily evaluated sustainability through environmental, social, and economic criteria [27–30,86,87], the proposed framework provides a broader perspective by integrating governance, ethics, culture, psychology, legal structures, and technological capabilities. The findings suggest that contemporary sustainability management requires not only improved sustainability outcomes but also strong ethical foundations, governance systems, technological capabilities, and accountability mechanisms.

Managerial and Governance Implications

The findings provide several implications for managers, policymakers, and sustainability assurance professionals. First, organizations need to recognize the growing impact of environmental, technical and institutional challenges from outside on sustainability plans. Thus, sustainability management must not just be limited to internal initiatives but also be responsive to changing legislative frameworks, stakeholder expectations and technological changes.

Second, while external dimensions dominate the prioritization outcomes, organizations should develop internal ethical and governance structures to assure credible sustainable implementation. Ethical values, transparent governance structures, and effective internal control mechanisms are critical in translating external sustainability expectations into demonstrable organizational results.

Third, sustainability reporting and assurance processes should consider the increasing importance of technological capabilities. Investments in digital reporting systems, data management infrastructure, and analytical tools may improve the reliability and transparency of sustainability information. For sustainability auditors, technological integration may enhance the effectiveness of assurance procedures and contribute to higher-quality sustainability disclosures.

Overall, this study demonstrates that licensed sustainability auditors perceive corporate sustainability as a multidimensional system primarily driven by external environmental and technological factors, while ethical responsibility and governance provide the internal foundation necessary for credible sustainability practices. These findings contribute to the sustainability literature by indicating that sustainability priorities may differ depending on stakeholder perspectives and professional roles, highlighting the importance of considering auditor perceptions in sustainability evaluation frameworks.

6. Conclusions

This study examined the multidimensional nature of corporate sustainability by extending the conventional sustainability perspective through an internal–external framework and prioritizing sustainability dimensions from the perspective of licensed sustainability auditors. By applying the AHP, this study provides empirical evidence regarding how licensed sustainability auditors evaluate the relative importance of sustainability dimensions. The findings demonstrate that external sustainability dimensions receive substantially higher priority (70.97%) than internal sustainability dimensions (29.03%), indicating that contemporary corporate sustainability is perceived as being strongly influenced by environmental challenges, technological transformation, regulatory developments, stakeholder expectations, and institutional pressures.

The global priority results reveal that environmental sustainability represents the most important sustainability dimension, followed by technological sustainability and ethical sustainability. The relationship between local and global priorities provides additional insight into the AHP results. Within the internal sustainability category, ethical sustainability ranked first with a local weight of 43.61%, followed by governance (29.22%), cultural (13.86%), and behavioral sustainability (13.32%). However, because the internal sustainability category received a relatively lower overall weight (29.03%), ethical sustainability ranked third globally with a weight of 12.66%, while governance, cultural, and behavioral sustainability were ranked seventh (8.48%), eighth (4.02%), and ninth (3.87%), respectively. Within the external sustainability category, environmental sustainability achieved the highest local priority (30.88%), followed by technological (19.96%), social (17.78%), economic (17.22%), and legal sustainability (14.16%). Combined with the substantially higher weight assigned to the external sustainability category (70.97%), these local priorities resulted in environmental sustainability ranking first globally (21.91%), followed by technological (14.17%), social (12.62%), economic (12.22%), and legal sustainability (10.05%). These findings demonstrate that the overall AHP ranking is determined not only by the local importance of each sustainability dimension but also by the relative weight assigned to its parent sustainability category. These results highlight the increasing importance of climate-related risks, environmental responsibility, digital transformation, and reliable sustainability information systems in shaping corporate sustainability strategies. At the same time, the strong position of ethical sustainability demonstrates that internal organizational values remain essential for ensuring transparency, accountability, and credibility in sustainability practices. Although internal dimensions received a lower overall weight, ethical responsibility and governance continue to function as important organizational mechanisms that enable firms to respond effectively to external sustainability pressures.

This study adds to the corporate sustainability literature by showing how sustainability goals may differ across stakeholder views and professional roles by merging internal organizational capabilities with external institutional forces. While previous sustainability frameworks generally emphasize balanced relations between the environmental, social, and economic dimensions, this study demonstrates that sustainability auditors assess sustainability through a wider assurance-oriented perspective where external environmental and technological pressures interact with internal ethical and governance capabilities.

The findings also have practical consequences for organizations, policymakers, and sustainability assurance professionals. For organizations seeking to improve their sustainability performance, it is not enough to focus on internal sustainability practices, but also to enhance their ability to adapt to external sustainability expectations, such as environmental regulation, technological developments, and stakeholder demands. Additionally, there is still a need to improve ethical standards, governance frameworks, internal

controls, and sustainability reporting capabilities to ensure reliable and verifiable sustainability outcomes.

Although this study was conducted within the Turkish institutional context, the proposed internal–external sustainability framework provides a structured approach that may be adapted to different organizational and regulatory environments. Future research may examine whether sustainability priorities differ across countries, industries, and stakeholder groups by comparing auditor perspectives with those of managers, investors, regulators, and other sustainability-related actors.

Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the analysis is based on the judgments of a limited number of licensed sustainability auditors in Türkiye. Although expert-based sampling is appropriate for AHP studies requiring specialized knowledge, the findings may reflect the specific regulatory, institutional, and professional characteristics of the Turkish sustainability assurance environment. Since sustainability assurance has only recently been institutionalized in Türkiye, perceptions of sustainability priorities may differ from those observed in countries with more mature sustainability reporting and assurance systems.

Second, the AHP methodology is based on subjective assessment of experts. Although consistency ratios confirmed acceptable levels of consistency among judgments, individual professional experiences, knowledge backgrounds, and interpretations of sustainability concepts may influence the prioritization results. Such subjectivity represents an inherent characteristic of expert-based MCDM approaches and should be considered when interpreting the findings.

Third, this study focuses on the relative prioritization of sustainability dimensions rather than measuring their direct impact on organizational sustainability performance. Thus, the results are descriptive of the perceived importance from the standpoint of sustainability auditors and not of the objective performance outcomes. Future research could integrate the proposed framework with quantitative sustainability performance indicators, ESG scores, sustainability assurance outcomes, or firm-level financial and operational measures.

Finally, the generalizability of the findings should be considered with caution because this study examines only one professional stakeholder group within a single national context. Future research could extend this framework by incorporating different stakeholder perspectives, conducting cross-country comparisons, and applying alternative or hybrid MCDM methods. Longitudinal research could also provide further insights into how sustainability priorities evolve in response to changing regulatory frameworks, technological developments, and global sustainability challenges.

More specifically, because this study is based exclusively on the evaluations of licensed sustainability auditors operating in Türkiye, the findings primarily reflect the Turkish institutional and regulatory environment, where sustainability assurance has only recently become institutionalized. Consequently, the prioritization of sustainability dimensions identified in this study may differ in countries with more mature sustainability assurance systems or substantially different governance and regulatory environments. Therefore, the findings should be generalized with caution. Future research could apply and compare the proposed internal–external framework across different countries, sectors, institutional environments, and stakeholder groups to further examine its external validity and generalizability. In addition, methodological extensions using alternative or hybrid MCDM techniques, as well as longitudinal designs, may further strengthen the robustness of the proposed framework.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su18157763/s1>, Supplementary File S1: Python scripts for AIJ aggregation, consistency analysis, and sensitivity analysis, together with the sensitivity analysis results (Excel file) and the accompanying sensitivity analysis report (PDF).

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Data Availability Statement: The data used in this study are based on expert judgments collected through structured pairwise comparison questionnaires administered to licensed sustainability auditors. Due to the confidential nature of the expert evaluations and ethical considerations related to professional anonymity, the raw data are not publicly available. Aggregated data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Abbreviations

The following abbreviations are used in this manuscript:

AHP	Analytic Hierarchy Process
AIJ	Aggregation of Individual Judgments
CI	Consistency Index
CR	Consistency Ratio
CSRD	Corporate Sustainability Reporting Directive
DCT	Dynamic Capabilities Theory
DEMATEL	Decision-Making Trial and Evaluation Laboratory
ESG	Environmental, Social, and Governance
EU	European Union
GCI	Geometric Consistency Index
KGK	Public Oversight, Accounting and Auditing Standards Authority (Türkiye)
MCDM	Multi-Criteria Decision-Making
PriEsT	Priority Estimation Tool
RBV	Resource-Based View
RI	Random Index
TOPSIS	Technique for Order Preference by Similarity to an Ideal Solution
UNESCO	The United Nations Educational, Scientific and Cultural Organization

Appendix A

Table A1. Consistency Ratios for Main Criteria.

<i>Participant NO</i>	<i>Main Criteria CR (%)</i>	<i>Internal Dimensions Sub-Criteria CR (%)</i>	<i>External Dimensions Sub-Criteria CR (%)</i>
1st Participant	0.00%	23.59%	28.01%
2nd Participant	0.00%	3.86%	4.39%
3rd Participant	0.00%	7.37%	9.87%
4th Participant	0.00%	15.71%	5.92%
5th Participant	0.00%	2.22%	4.54%
6th Participant	0.00%	5.09%	9.53%
7th Participant	0.00%	7.02%	2.50%
8th Participant	0.00%	21.46%	26.16%
9th Participant	0.00%	4.60%	9.69%
10th Participant	0.00%	6.91%	6.94%
11th Participant	0.00%	14.78%	6.41%
12th Participant	0.00%	6.12%	5.00%
13th Participant	0.00%	13.91%	4.41%
14th Participant	0.00%	6.43%	6.27%
15th Participant	0.00%	5.17%	9.94%
CR < 10% Rate	100% (15/15)	66.7% (10/15)	86.7% (13/15)

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