Explanation and Ranking of Auditor Behavioral Indicators Based on Environmental Responsibility

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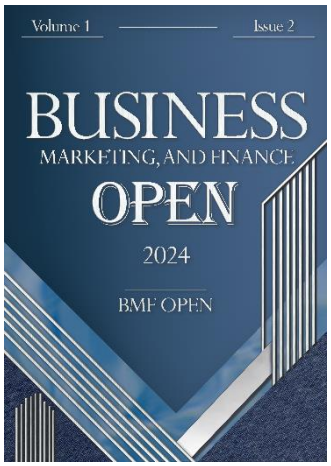

Citation: Arab, L., Sotudeh, R., Haghparast, A., & Hirad, A. (2024). Explanation and Ranking of Auditor Behavioral Indicators Based on Environmental Responsibility. Business, Marketing, and Finance Open, 1(2), 25-40.

Received: 20 December 2023
Revised: 24 January 2024
Accepted: 02 February 2024
Published: 01 March 2024

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Abstract: Companies and organizations must be accountable for the environmental impacts of their activities toward future generations. Given the widespread effects of human activities on the environment, including climate change, air and water pollution, and the destruction of ecosystems, companies and organizations bear a significant responsibility for the future of the planet. The objective of this study is to explain and rank the behavioral indicators of auditors based on environmental responsibility. The research method is mixed (qualitative and quantitative) and was conducted in the year 2024. In the qualitative part, interviews were conducted with 15 experts, and theoretical saturation was achieved using grounded theory. In the quantitative part, the Friedman test was used to rank the indicators. Additionally, to validate the indicators, a researcher-designed questionnaire was distributed among 384 university professors and professionals in the field, including faculty members, financial managers, and auditors from the Iranian Court of Audit, using SPSS software. This study identifies 11 components and 39 indicators. The components are as follows: Professional ethics (four indicators), stakeholder consideration (three indicators), environmental standards (three indicators), sustainable development (four indicators), environmental culture (three indicators), evaluation and monitoring (four indicators), sustainability reporting (three indicators), professional competence (five indicators), individual attitudes and values (four indicators), individual responsibility (two indicators), and education and learning (four indicators). Auditors play a key role in identifying the strengths and weaknesses of companies and organizations by assessing their environmental performance. Through thorough examination and transparent reporting, auditors provide a powerful tool for increasing public and stakeholder trust in organizations. This process not only promotes transparency but also helps organizations improve their performance and achieve sustainable environmental goals. This type of assessment, conducted by trained professionals, encompasses various dimensions of environmental impact and provides solutions for improving performance.

Keywords: Behavioral indicators, social responsibility, auditors, environment.

1. Introduction

The foundation of many auditors' performances can be traced to their behavior and values. Therefore, attention to professional behavior and its consequences is one of the fundamental research topics in organizational fields [1]. With the increased public awareness of environmental issues and the harmful effects of human activities on the environment, the concept of environmental responsibility has emerged as a significant principle in the business world. Environmental responsibility refers to the commitment of organizations to reduce the negative impacts of their activities on the environment and to promote sustainability. In this context, auditors, as independent overseers of organizational performance, play a key role in enhancing environmental accountability. Auditors can contribute to improving organizational environmental performance and promoting sustainability by assessing environmental performance, reporting on it, and providing necessary recommendations. Auditors have various responsibilities related to environmental issues, including assessing environmental risks, examining environmental management systems, evaluating the environmental impact of organizational activities, and reporting on the organization's environmental performance. To perform these tasks effectively, auditors need the necessary knowledge and skills in the environmental field. Moreover, factors such as auditors' values, attitudes, and motivations can influence their behavior regarding environmental issues. In auditing behavior, accountability is a fundamental concept that refers to the responsibility and credibility of auditors. Various scholars have explored the concepts of responsibility and accountability in the public sector [2-5]. Accountability in auditing means that auditors are responsible for justifying their actions and decisions transparently and understandably. This includes providing explanations and justifications to clients, company managers, shareholders, and other relevant stakeholders. Furthermore, accountability in auditing behavior is of significant importance for maintaining public trust in auditors and enhancing the quality of audits and their reports. Financial reporting assurance is also used as a tool to increase accountability [6]. Identifying the components influencing auditor judgment is a fundamental requirement for achieving ideal audit judgment quality. The contribution of this study, in addition to expanding the literature on auditing judgment, is to provide evidence of how auditor judgment is affected by the presentation of information and to identify the behavior of components like professional skepticism and experience as mitigating factors. This research also aims to change auditors' perspectives on factors that may seem of little importance [7].

Social position is a form of an individual's status in the social structure that determines the available resources to them. Among the most prominent social identities in contemporary societies, occupational identity serves as an important basis for self-concept, self-esteem, and personal motivation [8]. By responding to questions, providing accurate and transparent explanations, and communicating important information, auditors can gain the trust and confidence of stakeholders. In recent years, there has been a strong tendency to use behavioral theories in accounting research. Such studies undoubtedly enrich the field of accounting, transforming it from a dry and highly technical discipline into something more dynamic. Interesting studies have been conducted in the field of accounting and its environmental influences globally, all of which emphasize the interaction and interplay between accounting and its environment [9]. These studies reveal that the development and evolution of accounting are influenced by various environmental factors, with culture being one of the most important of these factors [10].

Professional skepticism is one of the key aspects of audit quality. Therefore, the role of professional skepticism in an accountability-based behavioral model of auditors is an important issue that requires attention. Professional skepticism refers to having doubt and ambiguity about the information, actions, and decisions auditors encounter during their work. These doubts may arise due to ambiguity in financial information, conflicts of interest, or uncertainty regarding auditing methods and processes. In the behavioral model of auditors, professional skepticism indicates the existence of serious issues that may influence auditors' decisions and reports. Auditors must pay attention to these doubts and use appropriate approaches to resolve them. Judgment in auditing is of great importance and is considered the most crucial factor in auditors' conclusions. Therefore, identifying the factors affecting auditor judgment and decision-making is critical [11]. If an auditor has doubts about the accuracy or completeness of financial information, they must take necessary actions to conduct a more thorough investigation and resolve these doubts. Professional skepticism in auditing can facilitate the improvement of auditors' performance by prompting auditors to be more meticulous in performing audits and providing more accurate and reliable reports. Additionally, approaches to resolving skepticism can help increase public trust in auditors and their reports. When information is presented to auditors in different formats or frameworks, it can influence their judgment, and professional skepticism plays a role in mitigating the impact of how information is presented on judgment quality. Furthermore, auditors with moderate experience show more advantages in reducing the effect of information presentation format on judgment quality compared to those with low or high experience [7]. Overall, professional skepticism in auditors' behavioral models should be seen as an opportunity to improve audit quality and increase public trust in auditors. Auditors should carefully examine and resolve issues they are skeptical about. Various motivators and barriers to exercising professional skepticism exist in the auditing process [12]. Auditors must fulfill their responsibilities and take necessary actions if they detect any deficiencies or fraud in financial reports, informing the relevant authorities. In summary, the behavioral model of auditors based on accountability includes ethics, independence, precision, transparency, and responsibility. Auditors must adhere to these principles in performing their duties and responsibilities to maintain public trust in financial reports. Due to the nature of auditing work, auditors encounter different forms of information presentation. These presentation formats, given the inherent limited rationality of individuals, have the potential to influence auditors' judgment [7]. The accountability-based behavioral model of auditors means that auditors are committed to specific standards in their duties and responsibilities, ensuring the provision of clear and reliable reports to guarantee the accuracy and integrity of corporate financial reports. Auditors must observe ethics and professional conduct in all auditing activities and avoid conflicts of interest. They should maintain their independence in conducting audits and avoid any discrimination or distortion in their reports. Auditors should exercise necessary care and precision in auditing and ensure access to complete and accurate information. They must present their reports transparently and understandably for managers and other stakeholders to ensure that accurate and complete financial information is provided. The theoretical framework of accounting based on accountability emphasizes the need for accountability within the accounting system [13, 14]. From an Islamic perspective, the origin of accountability lies in belief in the afterlife. Since accounting is sometimes referred to as the "language of accountability," the focus of this thought

theory is on structuration theory [14]. The Islamic model, with a focus on agency in structuration theory and an emphasis on ethical values in the formation of social systems, brings the language of accountability in the accounting system to its completion and dynamism [13]. In the field of public sector auditing and accounting, accountability has been recognized as one of the key and fundamental concepts. The behavioral model of auditors from the Iranian Court of Audit based on environmental responsibility means that auditors in this institution are required to provide clear, accurate, and reliable reports to managers and other stakeholders regarding concepts of sustainable development, social responsibility, and environmental responsibility of companies. This model increases public trust in financial reports and audit evaluations, ensuring improved organizational performance. This research aims to examine and explain the behavioral model of auditors from the Iranian Court of Audit based on environmental responsibility. Furthermore, by providing conclusions and suggestions to improve and strengthen the behavioral model of auditors from the Iranian Court of Audit based on environmental responsibility, this study will contribute to enhancing the performance of these auditors and increasing public trust in their audit reports. This research seeks to answer the question: How are the behavioral indicators of auditors from the Iranian Court of Audit, based on environmental responsibility, ranked?

2. Methodology

The present research, in terms of its objective, is applied and was conducted during the year 2024. The research method is a mixed-methods approach, incorporating both qualitative and quantitative techniques. In the first phase, the grounded theory methodology, which is the primary research method, was employed to identify and rank the behavioral indicators of auditors based on environmental responsibility from the perspective of experts. Grounded theory is a research approach that emphasizes the importance of data collection and analysis. The qualitative statistical population for the study consisted of auditors, financial managers, and university faculty members. The sample selection was based on the following criteria:

1. The individual should have a specialization in auditing or management,
2. The individual should have more than five years of professional experience,
3. The individual should be actively employed in the profession, and
4. The individual should have conducted research in the areas of auditing, environmental responsibility, or social responsibility.

In this study, a purposive (selective) sampling approach was used, with 15 individuals selected from the Iranian Court of Audit auditors, financial managers, and university faculty members. Through expert interviews and theoretical saturation using grounded theory, the components and indicators of the behavioral model of auditors based on environmental responsibility were identified. In the second phase, the ranking of the indicators was performed quantitatively using the Friedman test. In the third phase, which was also quantitative, to assess the validity of the extracted indicators, the developed indicators were distributed in the form of a researcher-made questionnaire among the sample population. The statistical population for this phase was defined by experts' and faculty members' consultations and consisted of university faculty, financial managers, and auditors from the

Iranian Court of Audit. Due to the indefinite nature of the statistical population and lack of exact access to the number of members and its wide extent, the sample was determined through random (convenience) sampling. The number of samples was calculated as approximately 384 using the Morgan table. The researcher-made questionnaire used a five-point Likert scale with the following options: "Very Desirable" (value 5), "Desirable" (value 4), "Average" (value 3), "Undesirable" (value 2), and "Very Undesirable" (value 1). The questionnaire was distributed in person, electronically, and within virtual specialized groups among the sample population. To assess the content validity of the questionnaire, feedback was obtained from professors, professional experts, and university faculty members. To assess the reliability of the questionnaire items, Cronbach's alpha coefficient was used, and the normality of the data was checked using the Kolmogorov-Smirnov test. To answer the third research question, a t-test and the SPSS software were utilized.

3. Findings

The results from the analysis of the demographic data indicate that the majority of respondents (80%) reported their gender as male, while the smallest percentage (20%) reported their gender as female. In terms of education, the largest percentage (60%) of respondents reported holding a master's degree, while the smallest percentage (40%) held a doctoral degree. Regarding their field of study, the largest percentage (53%) of respondents reported studying accounting, while the smallest percentage (7%) reported studying other fields (such as public management). Regarding occupation, the largest percentage (47%) reported their job as an auditor, while the smallest percentage (13%) reported being in financial management. In terms of work experience, the largest percentage (53%) had 10 to 15 years of work experience, while the smallest percentage (20%) reported having more than 15 years of experience.

To collect data, the grounded theory approach was used, employing semi-structured interviews for the qualitative section. For the analysis of qualitative data, open, axial, and selective coding methods were utilized. In this study, through expert interviews and the application of open and axial coding, the components and indicators of the auditors' behavioral model based on environmental responsibility were identified and summarized.

Below is an example illustrating how open coding was applied with one of the interviewees:

"In recent years, public awareness regarding environmental issues has significantly increased. This has led investors, consumers, and regulators to pay greater attention to the environmental impact of business activities. Auditors, as overseers of financial reports, cannot remain indifferent to these growing concerns. Stakeholder pressure, including shareholders, customers, and the general public, for greater transparency regarding the environmental performance of companies is a key factor that has prompted auditors to respond. Furthermore, auditors, as ethical professionals, are bound to fulfill their social and ethical obligations.

Environmental protection is a collective responsibility, and auditors can play their part in this global effort by carefully examining and scrutinizing the environmental reports of companies. In fact, many reputable auditing firms worldwide have implemented models in their audits to contribute to environmental stewardship. This process requires continuous training of auditors and updating their knowledge and skills in environmental matters.

Auditors can play an influential role in promoting environmental responsibility among businesses by conducting thorough audits and providing transparent reports on environmental performance. These actions will encourage companies to improve their environmental performance and ultimately take meaningful steps toward environmental conservation. Auditors, as essential pillars of society, play a significant role in maintaining economic health and financial transparency. Alongside this professional responsibility, auditors, as members of society, also bear social responsibility. One important aspect of this social responsibility is attention to environmental issues and adherence to environmental ethics. Education and promotion of environmental concepts within the workplace and organizational settings of auditors is an important step in fulfilling this social role. Given the increasing importance of sustainable development, understanding and implementing environmental concepts within the organizational environment will have a significant impact on society."

In data-driven theorization, open coding is an analytical process in which concepts are identified and expanded based on their characteristics and dimensions. Interviews conducted with experts, along with relevant academic literature, were used to extract and conceptualize components and indicators, which were then labeled with codes.

The foundation of axial coding classification is derived from reviewing previous studies, gaining sufficient knowledge and mastery of the subject, and achieving insight to identify commonalities among the indicators around a specific theme. In this stage, the commonalities of the identified concepts were categorized, leading to the formation of components and indicators. In this section, the researcher engages in categorization. In relation to the explanation of auditors' behavioral indicators based on environmental responsibility, 11 components and 39 indicators were identified.

Finally, to illustrate the relationships between the components and indicators obtained, selective coding was performed. This is shown in Table 1.

Table 1. Components and Indicators of the Behavioral Model of Auditors Based on Environmental Responsibility

Components	Indicators
Professional Competence	Environmental awareness and knowledge
	Identification of environmental issues
	Evaluation of environmental issues
	Reporting on environmental issues
	Learning technical skills related to sustainable development
Attitudes and Personal Values	Cultivation of environmental values and skills
	Development and reinforcement of environmental attitudes
	Strengthening positive attitudes towards environmental concepts and sustainable development
	Attention to environmental concepts and sustainable development, and updating personal knowledge
Individual Responsibility	Personal commitment to adhering to environmental issues
	Attention to environmental issues and sustainable development
Education and Learning	Enhancing environmental skills
	Participation in workshops and in-service training on environmental standards
	Up-to-date environmental knowledge
	Continuous learning and attention to environmental challenges
Professional Ethics	Adherence to inter-period rights

	Transparency of environmental reports
	Adherence to justice and ethical responsibility in environmental reporting
	Adherence to ethical principles regarding environmental issues
Stakeholder Consideration	Providing reliable environmental information to stakeholders
	Providing relevant information for decision-making regarding environmental issues to stakeholders
	Attention to the informational needs of all stakeholders concerning environmental issues
Environmental Standards	Attention to environmental standards
	Attention to sustainability standards
	Attention to international sustainability reporting standards
Sustainable Development	Attention to sustainability concepts in companies regarding environmental issues
	Attention to air pollution caused by company activities
	Attention to sustainable energy
	Attention to sustainable development standards
Environmental Culture	Environmental awareness
	Education and promotion of sustainability and environmental concepts
	Strengthening both mental and practical environmental attitudes
Evaluation and Monitoring	Evaluation of environmental issues
	Evaluation of risk management regarding environmental issues
	Monitoring the sustainable and environmental performance of companies
	Evaluation and monitoring of companies' achievement of sustainability goals
Sustainability Reporting	Attention to financial environmental indicators in reporting
	Attention to non-financial environmental indicators in reporting
	Disclosure of environmental risk management and sustainability reporting

Based on the findings, the rankings of the indicators for each component reveal distinct priorities among the surveyed professionals as follows:

Table 2. Ranking of Indicators for All Components

Component	Indicators	Average/Test Statistic	Rank
Professional Competence	Environmental Awareness and Knowledge	4.43	1
	Environmental Issues Identification	4.13	3
	Environmental Issues Evaluation	4.02	4
	Environmental Reporting	4.25	2
	Learning Technical Skills Related to Sustainable Development	3.95	5
Attitudes and Personal Values	Cultivation of Environmental Values and Skills	3.86	3
	Cultivation and Strengthening of Environmental Attitudes	3.75	4
	Strengthening Positive Attitudes Towards Environmental Concepts and Sustainable Development	4.13	2
	Attention to Environmental Concepts and Sustainable Development and Updating Personal Information	4.35	1
Individual Responsibility	Personal Commitment to Environmental Issues	4.68	1
	Attention to Environmental Issues and Sustainable Development	4.38	2
Education and Learning	Enhancement of Environmental Skills	4.06	3

	Participation in Workshops and In-Service Training on Environmental Standards	4.37	1
	Up-to-Date Environmental Knowledge	3.98	4
	Continuous Learning and Attention to Environmental Challenges	4.25	2
Professional Ethics	Adherence to Inter-Period Rights	4.02	4
	Transparency of Environmental Reports	4.13	3
	Adherence to Justice and Ethical Responsibility in Environmental Reporting	4.32	1
	Adherence to Ethical Principles in Environmental Issues	4.23	2
Stakeholder Consideration	Providing Reliable Environmental Information to Stakeholders	4.35	2
	Providing Relevant Information for Decision-Making Regarding Environmental Issues to Stakeholders	4.56	1
	Attention to the Information Needs of All Stakeholders Regarding Environmental Issues	3.89	3
Environmental Standards	Attention to Environmental Standards	4.16	2
	Attention to Sustainability Standards	4.68	1
	Attention to International Sustainability Reporting Standards	3.68	3
Sustainable Development	Attention to Sustainability Concepts in Companies Regarding Environmental Issues	4.37	1
	Attention to Air Pollution Caused by Company Activities	4.02	3
	Attention to Sustainable Energy	3.92	4
	Attention to Sustainable Development Standards	4.13	2
Environmental Culture	Environmental Awareness	4.13	3
	Education and Promotion of Sustainability and Environmental Concepts	4.32	2
	Strengthening Environmental Beliefs and Mental and Practical Attitudes	4.48	1
Evaluation and Monitoring	Evaluation of Environmental Issues	4.14	3
	Evaluation of Risk Management Regarding Environmental Issues	4.07	4
	Monitoring the Sustainable and Environmental Performance of Companies	4.48	1
	Evaluation and Monitoring of the Achievement of Companies' Sustainability Goals	4.25	2
Sustainability Reporting	Attention to Environmental Financial Indicators in Reporting	4.14	1
	Attention to Non-Financial Environmental Indicators in Reporting	3.75	2
	Disclosure of Environmental Risk Management and Sustainability Reporting	3.54	3

Professional Competence: In this component, the indicators were ranked based on their relevance to auditors' environmental responsibility. The highest-ranking indicator was "Environmental Awareness and Knowledge" (1st), reflecting the critical importance of having a solid foundation in environmental issues. This was followed by "Environmental Reporting" (2nd), highlighting the significance of clear and accurate reporting of environmental matters. "Environmental Issue Identification" (3rd) and "Environmental Issue Evaluation" (4th) ranked next, emphasizing the need for auditors to identify and evaluate environmental risks and impacts. Finally, "Learning Technical Skills Related to Sustainable Development" (5th) was ranked last, indicating that while important, continuous professional development in sustainability may be a secondary concern in comparison to immediate reporting and awareness needs.

Attitudes and Personal Values: For this component, the top-ranked indicator was "Attention to Environmental Concepts and Sustainable Development and Updating Personal Information" (1st), which underscores the importance of keeping personal knowledge current in relation to environmental issues and sustainability. This was followed by "Strengthening Positive Attitudes Toward Environmental and Sustainable Development Concepts" (2nd), emphasizing the need to foster a favorable perspective toward sustainability. "Developing Environmental Values and Skills" (3rd) was ranked third, highlighting the necessity of cultivating an environmentally conscious mindset and skill set. The lowest ranking, "Developing and Strengthening Environmental Attitudes" (4th), suggests that while cultivating a positive attitude is vital, it is slightly less emphasized than updating personal knowledge and enhancing existing attitudes.

Individual Responsibility: Within the Individual Responsibility component, the most prioritized indicator was "Personal Commitment to Environmental Issues" (1st), reflecting the importance of auditors taking individual responsibility for environmental matters. "Attention to Environmental Issues and Sustainable Development" (2nd) followed, indicating that there is also a strong focus on being mindful of sustainability in one's professional practice. This component highlights a strong sense of personal accountability for environmental stewardship and the importance of integrating environmental awareness into daily work responsibilities.

Education and Learning: The highest-ranked indicator in this component was "Participation in Workshops and In-Service Training on Environmental Standards" (1st), suggesting a significant emphasis on ongoing education and training regarding environmental practices. The second ranking, "Continuous Learning and Attention to Environmental Challenges" (2nd), highlights the value placed on ongoing professional development and staying informed about emerging environmental issues. "Enhancing Environmental Skills" (3rd) was ranked next, indicating that practical skills for managing environmental concerns are critical. The lowest-ranked indicator, "Updating Environmental Knowledge" (4th), shows that while important, staying current with the latest knowledge in environmental science is seen as slightly less urgent compared to hands-on learning and practical training.

Professional Ethics: In this component, the most critical indicator was "Adherence to Justice and Ethical Responsibility in Environmental Reporting" (1st), emphasizing the importance of fairness and ethical conduct when reporting environmental data. "Adhering to Ethical Principles in Environmental Issues" (2nd) was ranked second, which also underscores the ethical obligation of auditors in relation to environmental matters. "Transparency in Environmental Reports" (3rd) ranked third, reflecting the need for clear and open communication. "Respecting Inter-Period Rights" (4th), though important, was ranked lowest, indicating that while auditors are expected to respect legal rights and ethical guidelines, this was seen as a less pressing issue compared to broader ethical standards in environmental reporting.

Stakeholder Consideration: The highest-ranking indicator in this component was "Providing Relevant Information for Decision-Making Regarding Environmental Issues to Stakeholders" (1st), emphasizing the importance of transparency and clear communication with stakeholders about environmental matters. "Providing Reliable Information About Environmental Issues to Stakeholders" (2nd) followed, further underlining the need for trust and reliability in environmental reporting. The third indicator, "Considering the Information Needs of All

Stakeholders Regarding Environmental Issues" (3rd), indicates that while comprehensive stakeholder engagement is important, it is slightly less emphasized than the direct provision of relevant and reliable information.

Environmental Standards: The Environmental Standards component saw the highest priority placed on "Attention to Sustainability Standards" (1st), reflecting the critical importance of adhering to established sustainability frameworks. "Attention to Environmental Standards" (2nd) was ranked second, indicating the necessity of complying with general environmental standards. "Attention to International Sustainability Reporting Standards" (3rd) ranked last, suggesting that while international standards are crucial, they were seen as secondary to adherence to general sustainability and environmental standards.

Sustainable Development: In this component, the most highly ranked indicator was "Attention to Sustainability Concepts in Companies Regarding Environmental Issues" (1st), highlighting the importance of incorporating sustainability into corporate practices. "Attention to Sustainable Development Standards" (2nd) followed closely, showing the significance of aligning with specific sustainability frameworks. "Attention to Air and Water Pollution Caused by Company Activities" (3rd) ranked next, illustrating the importance of addressing specific environmental impacts. The lowest-ranking indicator, "Attention to Renewable Energy Sources" (4th), while still important, was ranked lower, suggesting that it was considered somewhat less urgent than broader sustainability concepts and standards.

Environmental Culture: In the Environmental Culture component, the highest-ranking indicator was "Strengthening Environmental Beliefs and Mental and Practical Environmental Attitudes" (1st), reflecting the need for a cultural shift towards deeper environmental awareness and action. "Education and Promotion of Sustainability and Environmental Concepts" (2nd) was ranked second, emphasizing the importance of promoting environmental education. "Environmental Awareness" (3rd) ranked last, indicating that while awareness is critical, fostering a deep-rooted environmental culture through beliefs and practical attitudes was prioritized.

Evaluation and Monitoring: The top priority in this component was "Monitoring the Sustainable and Environmental Performance of Companies" (1st), suggesting that effective oversight of environmental and sustainability efforts is crucial. "Evaluating and Monitoring the Achievement of Sustainability Goals of Companies" (2nd) was ranked second, emphasizing the need to track progress toward sustainability objectives. "Environmental Issue Evaluation" (3rd) and "Evaluating Risk Management Regarding Environmental Issues" (4th) were ranked third and fourth, respectively, with the former reflecting the need to assess environmental risks, and the latter pointing to the importance of understanding and managing such risks, though they were seen as slightly less critical than broader performance monitoring and sustainability goal tracking.

Sustainability Reporting: In this final component, the highest-ranked indicator was "Attention to Environmental Financial Indicators in Reporting" (1st), reflecting the importance of integrating financial and environmental aspects in corporate reports. "Attention to Non-Financial Environmental Indicators in Reporting" (2nd) followed, emphasizing the need to report on non-financial aspects of environmental performance. "Disclosure of Environmental Risk Management and Sustainability Reporting" (3rd) ranked last, suggesting that while

reporting on risk management and sustainability is essential, it was slightly less prioritized than the integration of financial and non-financial environmental indicators.

The validity of the questionnaire was confirmed through interviews with professors and experts in the field. In this study, Cronbach's alpha coefficient was used to assess the reliability of the questionnaire. Cronbach's alpha is employed to measure the internal consistency of the items in a study, and it is primarily used for questionnaires where the items or questions are designed on a Likert scale and the responses are multiple-choice. A Cronbach's alpha value higher than 70% is considered acceptable for conducting research. The results of the Cronbach's alpha test were 81%, indicating the reliability of the questionnaire, as shown in Table 3. Additionally, the data distribution was found to be normal, as the significance level was greater than 5%.

Table 3. Results of the Reliability and Normality Tests of the Research Questions

No.	Research Questions	Cronbach's Alpha	Significance Level
1	Professional Ethics	0.78	0.501
2	Stakeholder Consideration	0.76	0.253
3	Environmental Standards	0.83	0.249
4	Sustainable Development	0.79	0.086
5	Environmental Culture	0.88	0.239
6	Evaluation and Monitoring	0.88	0.458
7	Sustainability Reporting	0.79	0.247
8	Professional Competence	0.88	0.224
9	Attitudes and Personal Values	0.75	0.585
10	Individual Responsibility	0.76	0.357
11	Education and Learning	0.79	0.314
Total		0.81	

Table 4 presents the descriptive statistics for the research questionnaire questions. The information shows that the study participants have generally approved all research questions, as the mean value for all questions was greater than 3, and all significance levels were less than 0.05. Therefore, the indicators and behavioral components of auditors based on environmental responsibility are deemed valid.

Table 4. Descriptive Statistics for the Research Questions

Research Questions	N	Mean	Standard Deviation	Standard Error of Mean	t-statistic	Difference from Mean	Degrees of Freedom	Significance Level
Professional Ethics	384	4.28	0.453	0.0342	11.45	1.28	383	0.000
Stakeholder Consideration	384	4.19	0.632	0.0370	12.36	1.19	383	0.000
Environmental Standards	384	4.63	0.587	0.0365	13.26	1.63	383	0.000
Sustainable Development	384	4.21	0.616	0.0392	13.18	1.21	383	0.000

Environmental Culture	384	4.67	0.545	0.0362	12.16	1.67	383	0.000
Evaluation and Monitoring	384	4.36	0.548	0.0367	12.63	1.36	383	0.000
Sustainability Reporting	384	4.75	0.583	0.0398	11.68	1.75	383	0.000
Professional Competence	384	4.35	0.530	0.0347	15.59	1.35	383	0.000
Attitudes and Personal Values	384	4.16	0.606	0.0363	11.48	1.16	383	0.000
Individual Responsibility	384	4.03	0.504	0.0358	12.47	1.03	383	0.000
Education and Learning	384	4.48	0.571	0.0344	12.48	1.48	383	0.000

4. Discussion and Conclusion

Auditors play a fundamental role in promoting environmental responsibility, and it is essential for them to acquire the knowledge and skills required to identify and report environmental issues. Promoting environmental values and effective collaboration with stakeholders can significantly improve the environmental performance of organizations and contribute to achieving sustainable development. Developing specialized training programs for auditors on environmental issues is crucial to enhance their knowledge and awareness in this area. The aim of the present study was to define and rank the behavioral indicators of auditors based on environmental responsibility. According to the research findings, 11 components and 39 indicators were identified.

Auditors, as key figures in overseeing economic activities, play a critical role in promoting environmental responsibility. They must be aware of environmental issues, related laws, and standards. This awareness includes understanding the impacts of economic activities on the environment and the ability to identify environmental risks. Research by Yan, Fang, Sha, Yusuf, Parvin, and Rossiolo emphasizes the role of auditors. Cultivating a positive attitude and environmental values among auditors is crucial. This includes acknowledging the importance of environmental protection and understanding that economic development must align with environmental responsibility. Auditors should acquire the skills necessary for identifying, assessing, and reporting environmental issues. These skills include knowledge of environmental accounting and reporting, environmental risk analysis, and an understanding of related ethical principles. Auditors should demonstrate a model of environmental responsibility in their behavior and performance. This involves adhering to ethical principles, ensuring transparency in reporting, addressing stakeholders' concerns, and promoting sustainable practices within organizations. Auditors must show a deep commitment to environmental protection, and this commitment should be reflected in their decision-making processes and actions, including assuming responsibility for the environmental impacts of economic activities. Auditors should collaborate and interact with various stakeholders, including the government, the community, non-governmental organizations, and other professionals. This collaboration can help improve the environmental performance of organizations and achieve sustainable development. Auditors should continuously enhance their knowledge and skills in environmental matters. This

includes participating in training courses, familiarizing themselves with the latest environmental accounting standards, and understanding new environmental challenges. By adhering to these dimensions, auditors can play an effective role in promoting environmental responsibility, helping to protect the environment, and significantly contributing to sustainable community development.

Zarei and colleagues (2021) presented a comprehensive model for accountability in accounting from an Islamic perspective, focusing on the constructivist theory within the realm of social theories. The results showed that the effects of six domains—accountability approach, accountability levels, accountability dimensions, accountable entities, accountability principles, and strengthening accountability—were significant for the accountability of the accounting system. Karimabadi and colleagues (2024) designed a grounded theory model for the professional behavior of independent auditors based on a critical perspective from the experts in the field. Through coding the environmental factors (economic and competitive indicators), organizational factors (corporate governance, organizational culture, and ethical leadership), individual values (religious and ethical values indicators), social factors (social responsibility), and individual factors (auditor integrity, professional competence, confidentiality, and impartiality) were identified. Professional behavior of independent auditors in accounting is not an automatic phenomenon; it requires the formation of certain conditions and strategies that lead to tangible outcomes and guide the individual in making correct decisions [1]. Malekipour Gharbi and colleagues (2023) proposed a process model for social and ethical responsibilities in auditing firms. Kamyabi and colleagues (2023) studied the effect of the presentation format of information on auditors' judgment quality, considering professional skepticism and experience to reduce the impact of information presentation format on auditors' judgment quality. Their findings indicate that auditors are influenced by the presentation format. Moreover, subscales of knowledge seeking, judgment interruption, and inquiring mindset in professional skepticism reduce the effect of information presentation format on auditors' judgment quality. Finally, experience has a curvilinear effect on judgment standard deviation [7]. Namazi and Momtazian (2022) identified and prioritized factors affecting auditors' professional judgment and decision-making using content analysis and fuzzy screening techniques. The results of hypothesis testing indicate that environmental, task-related, and behavioral constructs of auditors have the most significant impact on auditors' professional judgment and decision-making in Iran. Moreover, the factors of auditor fees, auditor accountability, financial and competitive conditions in the auditing profession, auditor independence, and efforts to satisfy the client are the most important and influential factors affecting auditors' professional judgment and decision-making in Iran [11]. This research can serve as a valuable starting point for considering key factors that affect professional judgment and decision-making among auditors and its results can be utilized by Iranian accounting bodies to establish laws and guidelines concerning professional judgment.

Auditors, by evaluating the environmental performance of companies and organizations, play a key role in identifying their strengths and weaknesses. Through careful examination and transparent reporting, auditors provide a powerful tool for enhancing public and stakeholder trust in organizations. This process not only promotes transparency but also helps organizations improve their performance and achieve sustainable environmental goals. This type of evaluation, conducted by trained professionals, covers various aspects of

environmental impact and provides solutions for improving performance. Moreover, auditors, as one of the main components in assessing the performance of organizations, play a vital role in promoting environmental responsibility. Individual factors of auditors, including environmental awareness, positive attitudes, personal commitment, and analytical skills, have a significant impact on enhancing organizational sustainability. These factors enable auditors to identify environmental risks and improve organizational performance in the direction of sustainable development. Continuous training and adherence to professional ethics are among the aspects emphasized by this research. However, there are limitations, one of which is the insufficient environmental awareness of some auditors. To overcome these challenges, it is suggested that future research focus on assessing the practical impacts of individual, organizational, and social components of auditors and developing innovative solutions in the field of environmental auditing. This could greatly contribute to improving organizational sustainability and achieving environmental goals.

The practical recommendations of the research are as follows:

1. Organize specialized training courses and practical workshops on environmental accounting, reporting standards, and environmental laws and regulations.
2. Establish continuous professional development programs to update auditors' knowledge and skills in environmental matters.
3. Encourage auditors to obtain specialized certifications in environmental auditing and provide necessary training for better understanding of environmental issues and related auditing methods.
4. Develop national and international environmental auditing standards in collaboration with professional bodies.
5. Update and expand environmental auditing standards to assist auditors in systematically evaluating companies' environmental performance.
6. Create environmental evaluation checklists for auditors to use in the auditing process.
7. Encourage companies to prepare environmental reports and include the results of environmental audits in these reports.
8. Provide clear and understandable reports by auditors, including audit findings, strengths and weaknesses of the company in the environmental field, and offer practical recommendations for improvement.
9. Promote a culture of environmental responsibility in organizations through seminars, workshops, and awareness campaigns.
10. Encourage auditors to propose innovative solutions for improving companies' environmental performance and reward leading efforts in this area.
11. Regularly evaluate auditors' performance in environmental responsibility and provide constructive feedback.
12. Develop evaluation systems to measure the impact of auditors' activities on improving companies' environmental performance.

13. Increase oversight of auditors' performance in the field of environmental responsibility and establish effective accountability mechanisms.
14. Develop disciplinary mechanisms to address potential violations in environmental reporting.
15. Provide financial and non-financial incentives for auditors actively working in the environmental field.
16. Establish a performance evaluation system that recognizes and appreciates auditors' environmental activities.
17. Promote cross-sector collaboration between the accounting profession and environmental organizations.
18. Engage regularly with key stakeholders such as investors, clients, and the community to understand their needs and expectations.
19. Involve auditors in the formulation of environmental laws and regulations and consider stakeholders' opinions in this process.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

Acknowledgments

Authors thank all participants who participate in this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

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