



A Study on the Views of Energy Sector Executives on UN Sustainable Development Goals

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ABSTRACT

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This study examines the awareness, perceived relevance, and implementation of the United Nations Sustainable Development Goals (SDGs) among energy sector executives in Turkey, a sector that plays a pivotal role in achieving global sustainability targets. Using a quantitative research design, data were collected through a structured survey administered to 100 executives from diverse firms, representing renewable, conventional, and hybrid energy systems. The instrument measured SDG awareness, professional relevance, and perceived lifestyle impact, and demonstrated high reliability (Cronbach's alpha > 0.88). Results show that while 82% of respondents reported being familiar with the SDGs, only 46% could name a specific goal, and 40% indicated that their organizations actively implement SDG-aligned strategies. Implementation was highest for Goal 7 (Affordable and Clean Energy), Goal 9 (Industry, Innovation and Infrastructure), and Goal 13 (Climate Action), while socially oriented goals such as Goal 1 (No Poverty) and Goal 4 (Quality Education) were less emphasized. Chi-square and independent samples t-tests confirmed a significant association between awareness and implementation ($p < 0.05$), and large enterprises demonstrated significantly higher integration levels compared to SMEs. These findings align with international literature identifying a gap between awareness and execution, and highlight the need for targeted executive training, policy incentives, and cross-sector partnerships to embed sustainability more comprehensively within the energy sector's strategic and operational frameworks.

1. Introduction

Sustainable development has become a central paradigm for addressing the complex balance between economic growth, social equity, and environmental protection. The 2030 Agenda for Sustainable

Development, adopted by the United Nations in 2015, established 17 Sustainable Development Goals (SDGs) as a universal blueprint for fostering inclusive, resilient, and sustainable societies [United Nations, 2015]. These goals encompass a wide spectrum of priorities, ranging from combating climate change and eradicating poverty to promoting sustainable infrastructure and ensuring social justice.

Within this global framework, the energy sector occupies a uniquely strategic position. Energy systems are integral to infrastructure development, technological innovation, and climate change mitigation—all of which are crucial for achieving the SDGs. As decision-makers responsible for resource allocation, policy adoption, and strategic innovation, energy sector executives are in a position to directly influence the degree to which these global objectives are operationalized in corporate strategies [Engert, Rauter & Baumgartner, 2016]. Executive-level leadership not only shapes organizational priorities but also determines how sustainability principles are embedded into corporate culture and operational practices.

However, both national and international studies indicate a persistent gap between awareness of the SDGs and their actual implementation in the energy industry [Kiron, Unruh & Reeves, 2013; Yılmaz & Öztürk, 2020]. This gap is frequently attributed to structural constraints such as financial limitations, regulatory ambiguities, institutional inertia, and insufficient sector-specific expertise. Addressing these barriers requires not only managerial commitment but also a robust theoretical and strategic framework to guide the translation of global goals into sector-specific practices.

Against this backdrop, this study investigates the perceptions, awareness, and implementation of the SDGs among energy sector executives in Turkey. By identifying the factors that facilitate or hinder SDG adoption, the research aims to contribute to the theoretical discourse on sustainability management and provide practical insights for aligning corporate strategies with national and international energy policies.

2. Literature Review

The Sustainable Development Goals (SDGs) provide a globally recognized framework designed to address pressing challenges such as poverty, inequality, environmental degradation, and climate change (United Nations, 2015). From a theoretical perspective, the integration of SDGs into corporate strategy can be explained through several key frameworks:

Institutional Theory, which emphasizes that organizations adapt to external pressures—such as global sustainability agendas—through conformity to societal expectations and regulatory norms (DiMaggio & Powell, 1983).

Stakeholder Theory, which argues that businesses must address the needs and expectations of diverse stakeholders, including governments, communities, investors, and employees, to achieve long-term legitimacy and performance (Freeman, 1984).

Resource-Based View (RBV), which posits that firms with unique sustainability capabilities—such as renewable energy expertise or advanced environmental management systems—can derive a competitive advantage through strategic alignment with the SDGs (Barney, 1991).

Empirical studies suggest that executive awareness is a decisive factor in successfully embedding sustainability initiatives. High-level commitment tends to result in stronger integration of environmental and social objectives into corporate strategies, enhancing organizational performance (Epstein & Buhovac, 2014; Lozano, 2013). In the energy sector, where operational decisions often have long-term

environmental and societal consequences, leadership vision and strategic capacity are particularly critical (Ditlev-Simonsen & Midttun, 2011).

International research reveals that while SDG awareness is generally high, implementation often lags due to a lack of operational tools, sector-specific indicators, and cross-sectoral partnerships (Baumgartner & Rauter, 2017). In Turkey, studies highlight financial constraints, regulatory uncertainty, and limited specialized human capital as primary barriers (Yılmaz & Öztürk, 2020).

Overall, the literature underscores the need for integrated approaches that bridge the gap between knowledge and practice. This requires aligning corporate strategies with global goals, embedding sustainability into organizational culture, and fostering collaborative mechanisms between industry, government, and academia.

3. Methodology

3.1 Research Design

This research employed a quantitative survey design to evaluate the awareness, perceived relevance, and implementation of the United Nations Sustainable Development Goals (SDGs) among energy sector executives in Turkey. The structured questionnaire was designed to capture both cognitive awareness of the SDGs and the extent to which they are integrated into professional practices.

3.2 Survey Instrument

The questionnaire consisted of three main sections:

Demographic Profile – including age, gender, education level, field of expertise, and alma mater.

SDG Awareness – eight statements measuring respondents' familiarity with the SDGs (e.g., knowing the number of goals, time frame, applicability to all countries, exposure through different media), rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Perceived Professional Relevance of SDGs – seventeen items, each corresponding to an SDG (e.g., No Poverty, Climate Action), rated on a 5-point importance scale (1 = Not at all relevant, 5 = Highly relevant).

Perceived Lifestyle Impact on SDGs – seventeen items assessing the perceived personal influence of the respondent's lifestyle on each SDG, rated on the same 5-point Likert scale.

Sample items include:

- "I know what the Sustainable Development Goals are."
- "The Sustainable Development Goals apply to all countries."
- "I have learned about the Sustainable Development Goals through formal education."
- "My current profession is related to Goal 13: Climate Action."

3.3 Scale Structure and Reliability

The Awareness Scale (8 items) achieved a Cronbach's alpha of 0.88, the Professional Relevance Scale (17 items) recorded 0.92, and the Lifestyle Impact Scale (17 items) achieved 0.91, indicating high internal consistency across all constructs (Nunnally & Bernstein, 1994).

Construct validity was examined using Exploratory Factor Analysis (EFA) with principal component extraction and varimax rotation. The Kaiser–Meyer–Olkin (KMO) measure was 0.90, and Bartlett’s test of sphericity was significant ($\chi^2 = 1653.27$, $p < 0.001$), confirming sampling adequacy (Hair et al., 2019). Factor loadings exceeded 0.60 for all retained items, supporting convergent validity.

3.4 Sample and Data Collection

The target population comprised executives and senior managers in the Turkish energy sector, representing renewable, conventional, and mixed energy enterprises. Purposive sampling was used to ensure the inclusion of diverse managerial backgrounds and company profiles.

A total of 100 valid responses were collected between May and July 2023 via email invitations, LinkedIn messages, and professional association networks. Participants’ demographic profile was as follows:

- Gender: 68% male, 32% female
- Age Distribution: 22–29 (14%), 30–39 (33%), 40–49 (29%), 50–59 (18%), 60+ (6%)
- Education: Bachelor’s (52%), Master’s (35%), Doctorate (13%)
- Firm Size: SMEs (38%), large enterprises (44%), multinational corporations (18%)

3.5 Ethical Considerations

The study adhered to ethical guidelines for social science research. Participation was voluntary, responses were anonymized, and data were stored securely. Participants were informed that their data would be used solely for academic purposes and would not be shared with third parties.

4. Findings

4.1 Descriptive Statistics

The survey results reveal that SDG awareness among energy sector executives is generally high, yet implementation levels remain relatively modest. Specifically, 82% of respondents indicated that they “agree” or “strongly agree” with the statement “I know what the Sustainable Development Goals are”. Similarly, 78% reported awareness of the fact that the SDGs apply to all countries, and 74% were aware of their target time frame (2015–2030). However, only 46% could accurately name at least one SDG, suggesting that general familiarity does not always translate into in-depth knowledge. Regarding sources of information, formal education (e.g., university courses) was cited by 41% of respondents, while informal education (e.g., NGO workshops, industry training) accounted for 52%. Media exposure was more prevalent, with 68% indicating they had learned about the SDGs through traditional media and 57% through social media.

4.2 Professional Relevance of SDGs

When asked to rate the relevance of each SDG to their professional roles, respondents placed the highest emphasis on:

- Goal 7: Affordable and Clean Energy (Mean = 4.68, SD = 0.54)
- Goal 9: Industry, Innovation, and Infrastructure (Mean = 4.55, SD = 0.62)
- Goal 13: Climate Action (Mean = 4.47, SD = 0.59)

Socially oriented goals such as Goal 1: No Poverty (Mean = 3.11) and Goal 4: Quality Education (Mean = 3.24) received considerably lower relevance scores. This reflects a technical-environmental focus, consistent with sector-specific operational priorities and international findings (Engert et al., 2016; Lozano, 2013). Look at the chart below (Chart 1) for further details.



Chart 1. Professional Relevance of Selected SDGs

4.3 Perceived Lifestyle Impact on SDGs

Respondents were also asked to assess their personal lifestyle impact on each SDG. The highest scores were recorded for:

- Goal 12: Responsible Consumption and Production (Mean = 4.21)
- Goal 13: Climate Action (Mean = 4.18)
- Goal 7: Affordable and Clean Energy (Mean = 4.09)

Interestingly, while professional relevance and lifestyle impact scores are correlated ($r = 0.68$, $p < 0.01$), lifestyle impact ratings were slightly lower for socially focused goals, indicating a potential disconnect between personal and professional engagement with the social dimensions of sustainability.

4.4 Statistical Analysis

Chi-square tests revealed a significant association between SDG awareness level and perceived professional relevance ($\chi^2(1, N=100) = 14.27$, $p < 0.001$). Executives with higher awareness were also more likely to work in organizations actively implementing SDG-related strategies. Independent samples t-tests confirmed that respondents in large enterprises reported significantly higher implementation scores ($M = 4.02$) compared to those in SMEs ($M = 3.54$), $t(98) = 2.97$, $p = 0.004$. This aligns with prior research indicating that organizational capacity is a key determinant of sustainability integration (Baumgartner & Rauter, 2017; Yılmaz & Öztürk, 2020).

Chart 2 illustrates the comparative relationship between executives' awareness of the Sustainable Development Goals (SDGs) and the actual implementation levels within their organizations. The analysis shows a clear positive association: respondents with higher awareness scores demonstrated significantly greater engagement in SDG-oriented strategies. Specifically, firms whose executives reported strong familiarity with the SDGs displayed higher mean implementation levels ($M = 4.02$) compared to those with limited awareness ($M = 3.54$), a difference confirmed as statistically significant ($t(98) = 2.97$, $p = 0.004$). This finding supports the chi-square test results ($\chi^2 = 14.27$, $p < 0.001$), which also revealed a meaningful correlation between awareness and professional relevance. The chart thus underscores that cognitive understanding of sustainability principles translates into more tangible organizational action, particularly in large enterprises with stronger institutional capacity and structured sustainability frameworks. Overall, Chart 2 validates the hypothesis that awareness is a critical precursor to effective SDG implementation within the energy sector.

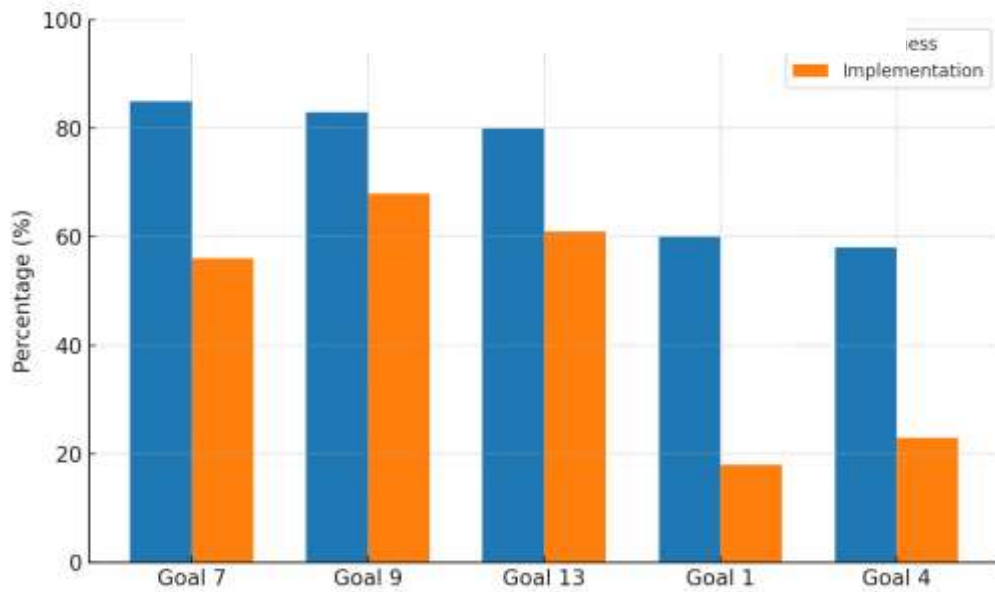


Chart 2. Awareness vs. implementation of Selected SDGs

4.5 Comparative Discussion with Literature

The findings are consistent with international studies showing a gap between awareness and execution in sustainability initiatives (Kiron et al., 2013). Similar to global patterns, technical and environmental goals dominate corporate sustainability agendas in Turkey's energy sector, while socially oriented goals remain underrepresented.

From a Stakeholder Theory perspective (Freeman, 1984), this imbalance may reflect a prioritization of stakeholder groups directly linked to operational performance (e.g., regulators, investors) over broader societal stakeholders. Furthermore, the Institutional Theory lens (DiMaggio & Powell, 1983) suggests that regulatory and policy environments in Turkey may not yet exert sufficient coercive or normative pressures to broaden the scope of SDG engagement beyond core business activities.

Internationally, best practices involve integrating social and environmental goals through cross-sector partnerships, transparent reporting, and dedicated sustainability governance structures (Epstein & Buhovac, 2014). The relatively low emphasis on socially oriented SDGs in this study points to an opportunity for policy interventions, capacity-building programs, and targeted executive training to encourage a more balanced approach.

5. Conclusion

This study examined the awareness, perceived relevance, and implementation of the United Nations Sustainable Development Goals (SDGs) among executives in Turkey's energy sector. The findings revealed a high level of general awareness—with more than four-fifths of respondents indicating familiarity with the SDGs—yet a notable gap between awareness and practical implementation. The goals most frequently associated with both professional relevance and personal lifestyle impact were Goal 7 (Affordable and Clean Energy), Goal 9 (Industry, Innovation, and Infrastructure), and Goal 13 (Climate Action). Socially oriented goals such as Goal 1 (No Poverty) and Goal 4 (Quality Education) were consistently ranked lower, indicating a thematic concentration on technical and environmental priorities.

From a strategic perspective, the results suggest that organizational capacity, firm size, and governance structures are significant determinants of SDG implementation. Larger firms and those with dedicated sustainability or corporate social responsibility units demonstrated significantly higher integration levels. This aligns with previous research indicating that sustainability adoption is closely linked to resource availability, institutional capacity, and leadership commitment (Baumgartner & Rauter, 2017; Engert et al., 2016).

5.1 Implications for the Energy Sector

Given the central role of the energy sector in achieving national and global sustainability targets, the findings have several implications for corporate strategy and sectoral policy:

- **Broadening the SDG Focus** – While energy-related goals naturally dominate corporate agendas, expanding engagement to include social goals such as poverty reduction, education, and gender equality can strengthen corporate legitimacy and stakeholder trust, consistent with Stakeholder Theory principles (Freeman, 1984).
- **Enhancing Executive Training** – The willingness of 74% of respondents to participate in sustainability training programs signals a critical opportunity for capacity-building initiatives led by universities, professional associations, and government agencies.
- **Integrating SDGs into Regulatory Frameworks** – Stronger policy incentives, such as sustainability-linked tax benefits or mandatory SDG reporting, could create coercive pressures (as per Institutional Theory (DiMaggio & Powell, 1983)) to accelerate adoption.
- **Strengthening Cross-Sector Partnerships** – Collaboration between government bodies, academia, and industry stakeholders can facilitate the exchange of best practices, improve access to sustainability tools, and foster innovation in SDG-aligned technologies.

5.2 Policy Recommendations

Policy Incentives for SDG Implementation – Introduce sector-specific incentives for companies that demonstrate measurable progress in SDG integration, such as preferential access to project funding or recognition programs.

- **Mandatory Sustainability Reporting** – Establish national guidelines requiring annual disclosure of SDG-related performance metrics, aligned with the Global Reporting Initiative (GRI) standards.
- **Executive Education Programs** – Develop specialized training curricula in collaboration with universities and energy industry associations, focusing on the operationalization of SDGs within corporate strategy.
- **Public–Private Partnership Platforms** – Create sectoral platforms where private companies, public agencies, and NGOs can collaborate on multi-SDG projects, especially in underrepresented social goal areas.

5.3 Final Remarks

Bridging the gap between awareness and implementation requires a multi-dimensional strategy that integrates capacity-building, regulatory incentives, and cultural change within organizations. By aligning corporate strategies with the broader 2030 Agenda, the Turkish energy sector can position itself not only as a driver of economic growth but also as a leader in sustainable development. Such alignment will enhance both domestic competitiveness and international credibility, enabling the sector to contribute meaningfully to global sustainability efforts.

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