

## Sustainable Development Goals (SDGs): How Can Decision Engineers Contribute More?

Mohammad Barzoui<sup>1</sup> 

<sup>1</sup> Department of Psychology, Chaharmahal and Bakhtiari Department, Islamic Azad University, Shahrekord, Iran.

\* Corresponding author email address: barzoui@mailsc.com

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### ABSTRACT

The United Nations' Sustainable Development Goals (SDGs) provide a framework for addressing some of the world's most pressing challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice. Among the numerous professions engaged in advancing these goals, decision engineers hold a uniquely influential position. Their expertise in analyzing and optimizing complex systems is crucial for achieving the SDGs. Yet, there remains a significant potential for these professionals to contribute more profoundly. In conclusion, decision engineers possess the analytical prowess, strategic thinking, and creative problem-solving skills necessary to drive substantial progress towards the SDGs. By more deeply integrating sustainability into their professional practices, enhancing educational curricula, engaging in multidisciplinary research, and influencing policy and corporate governance, decision engineers can lead by example, demonstrating how technical expertise can intersect with global humanitarian goals to forge a sustainable future.

**Keywords:** Sustainable Development Goals, Decision Engineers, Engineers Contribution.

The United Nations' Sustainable Development Goals (SDGs) provide a framework for addressing some of the world's most pressing challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice (Nakad & Kövesi, 2022; Nilsson et al., 2018). Among the numerous professions engaged in advancing these goals, decision engineers hold a uniquely influential position. Their expertise in analyzing and optimizing complex systems is crucial for achieving the SDGs. Yet, there remains a significant potential for these professionals to contribute more profoundly.

Firstly, decision engineers can leverage their skills in systems thinking and multi-criteria decision analysis to incorporate SDG targets directly into the planning and development phases of projects. For instance, Almeida's (2019) study on Multi Actor Multi Criteria Analysis (MAMCA) illustrates how this tool can help localize SDG 11 by building indicators tailored to Brazilian municipalities. Similarly, decision engineers could develop bespoke indicators for various SDGs across different contexts, enhancing the relevance and effectiveness of their interventions (Almeida, 2019).

Moreover, as Martínez-Ferrero and García-Meca (2020) highlight, internal corporate governance strength is vital for achieving SDGs. Decision engineers within corporations can influence internal policies and strategies to align more closely with SDGs, ensuring that sustainability becomes a core component of organizational decision-making processes (Martínez-Ferrero & García-Meca, 2020). Avrampou et al. (2019) document how leading European banks have advanced SDGs by integrating sustainability into their operational and strategic decisions. Decision engineers can apply similar principles across industries to catalyze broader compliance with SDG standards (Avrampou et al., 2019).

Educational initiatives also play a critical role. Mueller et al. (2020) demonstrate using human-centered design to connect engineering concepts with SDGs, suggesting a methodological shift in engineering education towards sustainability. Similarly, Nakad and Kövesi (2022) emphasize the need for increasing sustainability awareness among engineering students, proposing that curricular adjustments can foster a new generation of engineers who are better equipped to tackle SDG-related challenges (Nakad & Kövesi, 2022). Decision engineers can contribute by developing educational tools and modules that integrate

SDG principles, preparing students to consider sustainability in every decision-making process.

Research is another area where decision engineers can make substantial contributions. Körfgen et al. (2018) mapped Austrian research contributions to the SDGs, showing significant intersections across disciplines (Körfgen et al., 2018). Decision engineers should be encouraged to conduct and publish research that specifically addresses how engineering solutions can meet SDG targets, thus contributing to a scholarly foundation that supports practical implementations of sustainability.

The complexity of SDGs requires a multidisciplinary approach. Engineers, policymakers, business leaders, and academics must collaborate to create holistic solutions that can achieve multiple goals simultaneously. For instance, Nilsson et al. (2018) discuss mapping interactions between different SDGs, providing a blueprint for understanding how improvements in one area may influence outcomes in another (Nilsson et al., 2018). Decision engineers are ideally placed to lead or facilitate these interdisciplinary teams, given their expertise in analyzing complex systems and optimizing various outputs.

Lastly, decision engineers can significantly influence policy development. By providing evidence-based recommendations and deploying advanced analytics, they can help policymakers understand the potential impacts of proposed laws or regulations on SDG achievement. Sarkar's (2023) exploration of the role of environmental, social, and governance frameworks in India illustrates how governance can align with global sustainability goals (Sarkar, 2023). Decision engineers can extend this alignment further by ensuring that policies are not only well-intentioned but also scientifically sound and practically viable.

In conclusion, decision engineers possess the analytical prowess, strategic thinking, and creative problem-solving skills necessary to drive substantial progress towards the SDGs. By more deeply integrating sustainability into their professional practices, enhancing educational curricula, engaging in multidisciplinary research, and influencing policy and corporate governance, decision engineers can lead by example, demonstrating how technical expertise can intersect with global humanitarian goals to forge a sustainable future.

#### Authors' Contributions

Not applicable.

#### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

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### Declaration of Interest

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