

# **Developing an Innovative Blockchain-based Model to Contribute to the Implementation of the 2030 Agenda in Italy**

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## **Abstract**

One of the most crucial collective efforts in history for improving the lives of billions of people is Sustainable Development Goals (SDGs). The aim of the seventeen (SDGs) s included in the 2030 agenda represents the global action plan of the United Nations to eradicate poverty, protect the planet, and make certain prosperity for all. Although it has been five years since the adoption of the 2030 Agenda, the assessment of the implementation of the SDGs in Italy demonstrates that, overall, Italian cities have achieved 53% of the implementation of the SDGs from 100 percent full achievement. In many situations, the investigation verifies the gap between the country's north and south. Given that the use of the transformational power of blockchain to achieve the SDGs looks promising, the goal of this study is to explore how blockchain may improve the implementation of the 2030 Agenda in Italy. In this regard, we proposed an innovative Ethereum Blockchain platform for improved implementation of the SDGs. The framework of the platform includes three basic modules (data module, sustainability module, and governance module) derived from the novel ICT framework to implement the 2030 Agenda by Kostoska and Kocarev in 2019. Based on the layers of the Saunders research onion (Saunders et al., 2009), the type of researcher's view in this research is the interpretive view of phenomena. In this research, a qualitative approach and the strategy of the systematic literature review and thematic analysis have been adopted. For collecting and analyzing research data, the semi-structured interview method has been used. The statistical population of this research is in the stage of systematic literature review, studies from 2015 to 2020 in the field of blockchain and its applications according to the seven stages of a systematic review of Scaringella & Radziwon (2018), and in the field of content analysis, the statistical community consists of experts and university professors, and administrators who have a background of study or implementation in the field of understanding blockchain theories and models and their applications, especially in the field of sustainability. In the thematic analysis stage, relying on the purposeful snowball sampling method, finally, eight of the mentioned experts have been selected and interviewed. After studying the reviewed articles, first, all the applications of blockchain obtained in the articles have been extracted according to the three modules of data, governance, and sustainability by textual content analysis method and relying on the researcher's knowledge of the mentioned applications. In this research, the six-step method of Braun & Clarke (2006) has been used for the thematic analysis method, and after extracting the basic, organizer, and global themes from the interviews the thematic network has been drawn, and the results from the thematic analysis have been Integrated with the systematic literature review results. The final set of the blockchain use cases proposed in this research for the improved implementation of the three modules (data, sustainability, and governance) could be written in Solidity language on the Ethereum blockchain. and in accordance with the development challenges in the Italian cities to be customized and implemented through smart contracts. The originality of the dissertation consists of developing an innovative Ethereum blockchain platform to adopt the potential of blockchain technology to implement the 2030 Agenda considering existing discussions in governance science, sustainability science, and data science. Consequentially, due to its comprehensive and structured nature, superior to existing approaches. The dissertation findings offer insights to the policymakers and authorities at the regional and national levels on how to implement the 2030 Agenda through blockchain-based innovative solutions in Italy to reduce territorial inequalities between places in Italy. and provides support knowledge to define Italy's sustainable development strategy towards achieving the 2030 Agenda in Italy.

**Keywords:** The 2030 Agenda, Blockchain Technology, Sustainable Development Goals, Italy

