Sustainable Financial Risk Intelligence with SDG-Aligned Knowledge Graph

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Abstract.

The Sustainable Development Goals, established by the United Nations, play a vital role in the economy by helping create fair opportunities, reduce inequalities, promote the responsible use of resources, and support economic growth that benefits everyone while also protecting the planet. With increasing global interest in sustainable development, Albania, like most UN member countries, has adopted the sustainable development approach. This paper aims to comprehensively identify how macroeconomic factors impact the SDGs of 'No Poverty,' 'Decent Work and Economic Growth,' and 'Industry, Innovation, and Infrastructure. 'The knowledge graph we designed meaningfully exploits data from INSTAT and the World Bank while indicating underlying connections between Albania's Sustainable Development Goals and financial risks. The knowledge graph actively maps to other SDG knowledge graphs using SKOS to create a broader, more affiliated network that enhances the understanding of sustainable development goals through improved semantic connections. In this research, we identify financial risks with the most significant SDG impact in Albania. At the end of the paper, a case study offers a policy framework mapping and an institutional responsibility analysis, considering also the correlation assessment between economic indicators from the INSTAT institution's data. The analysis aims to provide applicable insights that can inform future strategies aligned with the Sustainable Development Goals and contribute to a more sustainable and resilient future for the country.

Keywords: knowledge graphs, financial risks, Sustainable Development Goals (SDGs), semantic interoperability