Mapping SDG Adoption in Global Mining: Trends, Regions, and Sub-Industry Gaps

Evgenia Anagnostopoulou
Postdoctoral Researcher, University of Macedonia, Thessaloniki, Greece

Abstract:

This study examines the adoption of the Sustainable Development Goals (SDGs) within the global mining industry across seven sub-industries: Aluminum, Copper, Diversified Metals & Mining, Gold, Precious Metals & Minerals, Silver, and Steel, spanning the period from 2019 to 2024. We assess changes over time, analyze heterogeneity by region and sub-industry, and explore associations with firm characteristics. Our methodology includes non-parametric group comparisons with Holm-adjusted post hoc contrasts, chi-square tests with Cramér's V, two-way factor models, and paired Wilcoxon tests for companies observed in both 2019 and 2024. Overall adoption rates were highest for SDG 8, SDG 13, and SDG 3. Notable time trends emerged: paired results for matched firms demonstrated substantial increases from 2019 to 2024 for SDG 13, SDG 8, SDG 12, and SDG 3. Regional differences were significant yet modest in magnitude, with Europe consistently outperforming North America, while Latin America exhibited comparatively stronger environmental outcomes. Differences among sub-industries were present but relatively small; firms in the Aluminum and Gold sectors reported higher adoption rates than those in Steel and Diversified Metals & Mining across several SDGs. Firm size showed a positive correlation with SDG adoption, while profitability demonstrated weaker, yet positive associations. These findings suggest a rapid integration of SDG practices in the mining sector since 2019, with Europe leading in performance and larger firms benefiting from scale effects. The results underscore the importance of targeting policy and investor engagement in lagging regions and sub-industries to address existing disparities.

Keywords:

Mining and Metals Industry, Sustainable Development Goals, Time Trends, Regional Heterogeneity.