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The Use of Methods of Explainable Artificial Intelligence in Analyzing the Relevance of Banks' ESG Data: A Study of 52 European Banks*

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Abstract

In recent years, there has been a growing interest among banks in the possibility of using artificial intelligence (AI) to improve data collection and analysis. Specifically, the focus is on supporting the sustainability reporting process. Most of the studies described in the literature, show the potential of machine learning (UM) in the context of credit risk assessment. There is a lack of broader research on the use of UM in the ESG self-assessment process. The present study fills this gap. The research involved conducting an experiment using the XGBoost algorithm and the SHAP method. The subjects of the study were 52 European banks. ESG data covering the period 2018-2022 was obtained from the Refinitive database (now LSEG Data & Analytics). The research shows that the SHAP Method and XGBoost algorithm can be used to assess the importance of ESG indicators and identify those that significantly impact the ESG score of banks.

Keywords: ESG, explainable artificial intelligence, machine learning, ESG assessment, banks

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