

# BIG DATA & ALGORITHMIC FINANCE



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Iván Pastor Sanz, Ph.D., serves as a Professor at the International University of La Rioja and as a Senior Analyst in the Internal Validation Department at BNP Paribas, Madrid.

He earned his Doctorate in Finance, Cum Laude, from the University of Valladolid, specializing in neural networks and artificial intelligence applications in finance, complemented by a Master's degree in Business Intelligence and Big Data from EOI, Madrid.

His research, which has been featured in prominent journals such as Expert System with Applications, Social Indicators, and Contemporary Economics, focuses on SME resilience, credit risk, solvency, systemic risk, and sustainability. In addition to his research and professional roles, Dr. Sanz is actively involved in teaching, both in business schools and at the International University of La Rioja.

## THE IMPACT OF CLIMATE RISKS ON THE PROBABILITY OF BANKRUPTCY: EVIDENCE FROM AGRICULTURE FIRMS IN SOUTHERN EUROPE

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Production in agricultural firms can be severely affected by the frequency and duration of extreme climate events, which can cause losses due to their impact on business-related natural capital. Physical climate effects are material dependencies for agricultural businesses that may severely affect performance and compromise survival. This study analyzes the effects of adverse climatic conditions in the area of the firm's headquarters, such as extreme maximum temperatures, heavy precipitation, and fires. Using logit regressions and the gradient-boosting ensemble method, agricultural firms' bankruptcy is found to be conditioned by these extreme weather events, indicating that the physical effects of climate change on firms' resources are already material for the agricultural sector's resilience and survival, although credit risk management still receives little attention.

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