

عنوان مقاله:

The Study of the Predictive Power of Meta-heuristic Algorithms to Provide a Model for Bankruptcy prediction

محل انتشار:

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خلاصه مقاله:

Progress in technology as well as extensive environmental changes have accelerated the economy. Intelligent models are examples of these developments predicting the corporate bankruptcy in the future. Investors and creditors are very interested in predicting the corporate bankruptcy, looking for reliable strategies to identify distressed and bankrupt companies. In the present research, companies active in Tehran Stock Exchange in a ۱۰-years period were investigated in terms of bankruptcy based on localized Kordestani-Tatli model based on Altman model, healthy and bankrupt companies were identified as, and those added to or excluded from the stock market during ۱۰ years were eliminated. The research data were collected and refined by means of secondary data extracted from financial statements and through the databases of the Exchange Organization as well as the Central Bank. The models employed to assess the data and predict bankruptcy included six metaheuristic algorithms including gravitational, gray wolf, genetic, imperialist competition, whale and differential evolution algorithm in combination with neural network; and the quality of the predictive models were compared in terms of accuracy and other assessment criteria. Financial ratios in three groups of profitability, liquidity, and capital structure were considered as the input variables of the models with good predictive power in determining bankruptcy. Hence, from the six algorithms investigated in terms of accuracy, the proposed model of the current research includes the three genetic, imperialist competition, and gray wolf algorithms in combination with artificial neural network method having ۸۶% correct prediction accuracy and being able to provide reliable results.

کلمات کلیدی:

Bankruptcy Prediction, Artificial Intelligence (AI), Meta-heuristic algorithms, Financial Ratios

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