Measurement of Credit Rating Levels in the Face of Internal Control Requirements with a Comparative Approach Using Particle Swarm Optimization and Genetic Algorithms

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1. Round 1

1.1. Reviewer 1

Reviewer:

The introduction references several studies to establish the relevance of internal controls (e.g., "Gleason et al. 2017" and "Younas & Kassim 2019"). However, the connection between these references and the research question is not well articulated. I recommend expanding on how these studies specifically relate to the context of credit ratings and internal control requirements in the Tehran Stock Exchange.

The explanation of the parameters used for PSO and GA (e.g., "Particle Population Size nPop=707" and "Initial Population 1000 Chromosomes") is presented without much context. It would be helpful to include a brief rationale for the selection of these specific parameter values and how they were determined.

The parameters for PSO and GA are listed, but their influence on the convergence and optimization process is not thoroughly discussed. Consider providing a detailed explanation of how varying these parameters might impact the results, especially in terms of accuracy and computational efficiency.

The figures illustrating the credit rating results before and after the implementation of internal control requirements lack sufficient commentary in the text. It would be beneficial to discuss these figures in more detail, highlighting any trends or significant observations.

The presentation of statistical parameters using PSO and GA is informative, but the comparison between the two algorithms is superficial. A more in-depth analysis of why PSO might slightly outperform GA in some areas, or vice versa, would strengthen the discussion.

Response: Thank you for your comment. I will consider these comments.

1.2. Reviewer 2

Reviewer:

The statement, "Despite the importance of this issue, the impact of internal control requirements on credit ratings has not been given sufficient attention," could benefit from a more explicit identification of the research gap. Consider elaborating on what specific aspects of the impact of internal controls on credit ratings remain unexplored, which this study aims to address.

The description of the metaheuristic algorithms (Particle Swarm Optimization and Genetic Algorithms) is informative but lacks detail on why these specific algorithms were chosen over others. I suggest including a comparison with other potential algorithms and justifying why PSO and GA were the most suitable for this study.

The discussion mentions that there is no significant difference in accuracy between the algorithms and no difference in credit rating levels before and after the implementation of internal control requirements. However, this conclusion would be more robust if supported by a statistical test or confidence interval to quantify the observed differences or lack thereof.

The discussion could benefit from a more critical analysis of why internal control requirements did not significantly impact credit ratings. Consider exploring potential limitations in the implementation of these controls or other external factors that might have mitigated their effectiveness.

The recommendation that "policymakers review the current internal control requirements" is valid but lacks specificity. It would be helpful to propose specific areas where these controls could be strengthened or provide examples of best practices from other markets.

The comparison of this study's findings with previous literature (e.g., "Crabtree and Maher 2012") is concise, but could be expanded. It would be insightful to delve deeper into why this study's findings diverge from others and what this might suggest about the unique context of the Tehran Stock Exchange.

The suggestion to develop new standards for assessing internal controls is forward-looking. However, it would be beneficial to outline potential frameworks or methodologies that could be explored in future research to achieve this goal.

Response: Thank you for your comment. I will consider these comments.

2. Revised

Editor's decision after revisions: Accepted.
Editor in Chief's decision: Accepted.