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Improving Detection of Illegitimate Scores and Assessment in Most Advantageous Tenders

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Abstract : The Most Advantageous Tender (MAT) has been criticized for its susceptibility to dictatorial situations and for its processing of same score, same rank issues. This study applies the four criteria from Arrow's Impossibility Theorem to construct a mechanism for revealing illegitimate scores in scoring methods. While commonly be used to improve on problems resulting from extreme scores, ranking methods hide significant defects, adversely affecting selection fairness. To address these shortcomings, this study relies mainly on the overall evaluated score method, using standardized scores plus normal cumulative distribution function conversion to calculate the evaluation of vender preference. This allows for free score evaluations, which reduces the influence of dictatorial behavior and avoiding same score, same rank issues. Large-scale simulations confirm that this method outperforms currently used methods using the Impossibility Theorem.

Keywords : Arrow’s impossibility theorem, cumulative normal distribution function, most advantageous tender, scoring method
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