

عنوان مقاله:

A new efficient particle swarm optimization algorithm for money laundering detection in insurance company

محل انتشار:

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خلاصه مقاله:

Money laundering is a complex and dynamic process, which conceals the sources of money. Insurance companies are faced with the challenge of money laundering. It encounters insurance companies to legal, operational and reputational risks. Previous studies in insurance investigate the fraud in insurance, whereas money laundering as a crucial phenomenon in insurance is neglected; therefore, we explore for the first time the money laundering in insurance and proposed an efficient statistical method to detect it. In this paper, we propose a useful strategy namely stratified sampling, which distributed all samples to different strata subject to minimizing the variance of overall amount of money laundered due to money laundering activities. To solve this objective function we develop an efficient particle swarm optimization (PSO) which is combined with the neighborhood search (NS) algorithm. Then for an numerical example, we run this metaheuristic algorithm and compare the results respect to objective value and CPU time with genetic algorithm and traditional PSO approach. These comparisons imply that PSO algorithm, which is combined with NS, performs better than other methods for this problem; also, results show that the near optimum number of strata is 600. In other word, we divide the insured into 600 groups and survey these samples instead of survey all insured

کلمات کلیدی:

money laundering, insurance industry, stratified sampling, genetic algorithm, particle swarm optimization algorithm, hybrid particle swarm optimization/neighborhood search

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