

عنوان مقاله:

Providing a forecasting model and optimization of the cash balance of bank branches and ATMs with the approach of social responsibilities

محل انتشار:

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خلاصه مقاله:

Providing cash reserves and providing cash services is one of the main missions of banks, and optimal management of cash to meet the needs of customers while complying with social responsibilities is one of the important challenges in the banking industry. In order to provide a solution, in the current research, we have presented a two-objective mathematical model with a combined approach of cost minimization and action maximization to the social responsibilities of the sample branches of a commercial bank in cash logistics. In order to get better results, first, withdrawal and receipt of customers' cash were predicted using the SARIMAX statistical method and LSTM recurrent neural network, and by comparing the results, the LSTM method was chosen as the superior method with an acceptable level of accuracy. Then, by placing the predicted values in the optimization model, the optimal values of the inventory variables and the amount and time of cash movement of the branches were determined in the cash logistics, which resulted in a significant reduction of the bank's costs in providing cash services and accountability. Complete with the demand for cash from customers, the social responsibilities of the bank were optimized in the cash transfer mission.

کلمات کلیدی:

time series, Recurrent Neural Network, bank branches, cash balance optimization, social responsibilities

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