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A mathematical model for annual transfers of officers in combined services: An application of assignment problem

Soysa W.R.G.[1] and Samarathunga, D.M.[1*]

[1]*Department of Mathematics, University of Ruhuna, Wellamadama, Matara, Sri Lanka.*

In this study, we develop a model for automating annual transfers of officers in combined services. Annual transfers are a yearly based process conducted by the Ministry of Public Administration, Home Affairs, Provincial Councils, and Local Government. Due to a large number of applications, annual transfers become a complex process, and therefore it is significant to have an automated process. We propose a model for automating annual transfers of officers in combined services as an application of the assignment problem. Our approach consists of two phases. In the first phase, we develop a model to find places for applicants based on their given preferences. Considering the factors such as the number of years of service and the number of years of service at the current working place, the applicants are assigned to offices maximizing their preferences. Since it is not possible to assign all the applicants based on given preferences alone, the applicants who do not get places based on preferences, the second phase, constructing an integer programming model, is devoted to finding places based on the minimum distance either from home or the current working place to the new place. The model is tested on a sample of the annual transfers of combined services obtained from the Ministry of Public Administration, Home Affairs, Provincial Councils, and Local Government. Two corresponding integer linear programming problems are solved using MATLAB solver and out of the 100 applicants tested, 81 applicants are assigned on a preference basis and the remaining ones are assigned on a distance basis. The proposed model can be adapted for all applicants for annual transfers and transfers in other categories.

Keywords: Assignment Problem, Combined Services, Annual Transfers

*Corresponding author: samaremath@gmail.com