AN INTERACTIVE PERSPECTIVE MODEL BASED ON AHP AND 0-1 IP FOR THE STAFF JOB ROTATION OF NURSES IN LARGE-SCALE HOSPITALS

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ABSTRACT. *Job rotation is an efficient approach to training staff nurses in diversified skills, enabling them to be more capable of taking care of their patients. This paper focuses on application research that emphasizes the development of a new systematic approach to accomplishing job rotation for staff nurses in a large-scale hospital system with branches located in different geographical areas. The proposed approach is based on the analytic hierarchy process (AHP) methodology and 0-1 integer programming (IP) for implementing job rotation with multiple factors and interactive perspectives. The AHP method is employed to assess and set the weights for each nurse candidate and job/department candidate. The 0-1 IP model applies these weights to find an optimal rotation plan. The results show that the proposed approach is able to help decision makers provide feasible and quality solutions for achieving job rotation in a hospital system.*
Keywords: Job rotation, Analytic hierarchy process, Integer programming, Multiple factors

1. **Background and Related Works.** To train a multi-skilled staff nurse, a set of adequate training plans is needed. Well-trained staff can better deal with the numerous and diverse medical services requested of them. Job rotation is an effective means of training staff in different skills [1]. Job rotation belongs to the category of work design which encourages employees to obtain more skills. In H.R. management, job rotation is included in the job description and is part of job training. Chen [2] pointed out that job rotation means that staff is assigned to new duties after mastering their present duties, in order to enhance their knowledge and ability. Gale [3] indicated that job rotation is one of the important techniques in succession-planning and development of managers at GE. Allerton [4], Hauptman and Hirji [5] stated that job rotation is one of the key techniques in reducing turnover and improving staff loyalty. Triggs and King [6] indicated that job rotation enhances work performance and promotes the skills and responsibility of the staff.