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Editorial

Special Issue: Management Applications of the AHP in South East Asia

Guest Editors:
Rafikul Islam
Wan Rohaida Wan Husain

Welcome to Volume 48, No. 2 of the Malaysian Management Review! This special issue has been devoted to **Management Applications of the Analytic Hierarchy Process (AHP) in South East Asia**. Following are brief outlines of the papers included in this issue. However the ideas presented are authors own interpretations and MMR is not necessarily a party to this.

This issue presents five papers dealing with the application of a cutting-edge decision making method, the Analytic Hierarchy Process (AHP), in five distinct areas. The AHP method has been applied in numerous fields in the past, including supply chain management, strategic management, finance, marketing, quality management, environmental management, and so on. The applications of the AHP method presented in this special issue are timely, and are expected to draw the attention and interest of industry players and practitioners to use of the method in helping to promote scientific decision making in the Malaysian corporate and public sectors. Following are brief outlines of the papers included in this issue.

Conflict resolution has drawn widespread attention from researchers worldwide. Effective resolution of conflicts requires the incorporation of human feelings, emotions, dignity and many other intangibles in the resolution process. The analytic hierarchy process is, perhaps, a conspicuous exception to decision-making models in use today in that it can objectively measure intangibles to help users make meaningful decisions. Not only in the area of conflict resolution, but in many other areas as well – such as, for example, the choice of a city or region for business expansion. Distinguished Professor Thomas L. Saaty of the University of Pittsburgh has been credited with developing the AHP. He shares in a paper in this issue how decision-making that incorporates the consideration and measurement of intangibles can yield benefits in various aspects of business and society, particularly in the area of conflict resolution.

Authors Margarita Sergeevna Peredaryenko and Rais Hussin Mohamed Ariff used the AHP method in an attempt to predict the winning candidate for the position of Chief Minister of Perak in Malaysia's 13th General Election held in 2013. Several criteria were considered in the prediction exercise, namely, charisma, humility, integrity, party, nation-building, people management, leadership and experience. A survey questionnaire structured using the AHP method was administered to a sample of respondents representative of the population at large, and responses were collected and analysed. Analysis of the responses predicted that Dato' Seri DiRaja Dr. Zambry Abd Kadir would be elected over his rival, Dato' Seri Ir' Mohammad Nizar Jamaluddin. It is interesting to note that the prediction closely matched the actual election result.

Machine operators play an important role in the manufacturing industry. Decisions regarding the optimal setup of production processes, and the allocation of operators to those processes, are usually made through experience and trial and error. Consequently, the decisions may not result in the most efficient use of labour, or the achievement of maximum productivity. Authors Ruzanita Mat Rani and Wan Rosmanira Ismail found the AHP/DEA model to be more effective than other decision-making models in helping management of a firm determine the optimum setup of production lines and allocation of operators. The authors claimed that for the operation under study, the model resulted in a decision that could reduce the production cycle and waiting time, as well as increase the number of parts produced and the average utilization of operators, leading to greater productivity and profit.

Apart from making profit, business entities nowadays are also expected to contribute to greater society, especially in achieving socio-economic objectives. Islamic banking aims at ensuring the equitable distribution of income and wealth in society and promoting social justice. Of late, Islamic banking has been a popular research area in the area of finance. The paper by Karmila Hanim Kamil et al. deals with prioritizing the multiple objectives of asset and liability management under the purview of Islamic banking. It is expected that the application of the AHP model to questions such as this will spur more use of the model in other areas of Islamic banking and finance.

Petronas is Malaysia's national oil and gas company. To remain resilient in the turbulent oil market and sustain its profitability, the company should be maximizing its production now, while prices are high. But oil production has been declining since 1996, so what is the company to do when routine optimization has failed to stop the decline? A comprehensive study of methods of extracting more oil from Field X is a must. Authors Slamet Riyadi and Rafikul Islam show how the AHP method can be applied effectively to the selection of an external technical service provider to carry out the study, based on several critical criteria.

We hope that readers will find the papers stimulating and useful. Please email us at mmr@mim.org.my if you have a paper you wish to have considered for inclusion in future issues, if you wish to provide any feedback on this issue, or for any other enquiries. As always, feedback on the papers is most welcome: kindly send your comments to the authors and forward a "c.c." to mmr@mim.org.my.

Operator Allocation Selection in Labour-Intensive Manufacturing Systems Using AHP/DEA, DEA Cross Efficiency and DEA Super Efficiency-CCR Models

by

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ABSTRACT

Operator allocation is one of the most important decisions that can influence productivity in a labour-intensive manufacturing system. In this paper, 10 operator allocation alternatives were identified with the assistance of computer simulations. To determine the best operator allocation method, the AHP/DEA, DEA Cross Efficiency and DEA Super Efficiency-CCR models were used, and the results obtained from three models were compared. Based on the comparison, the AHP/DEA model was determined to be the best operator allocation model, as it involved the smallest total number of operators and used only a single assembly line. The model also reduced the production cycle time and waiting time, while increasing the total number of parts produced and average operator utilization. The suggested model can be used by managers, consultants, researchers and academicians to help improve the productivity of manufacturing companies, thereby leading them to greater profits.

Keywords: operator allocation, AHP/DEA, DEA Cross Efficiency, DEA Super Efficiency-CCR

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