
Editorial

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Biographical notes: Rafikul Islam received MS in Applied Mathematics from the University of Calcutta in 1988. Subsequently he obtained his PhD in Operations Research from Indian Institute of Technology, Kharagpur in 1996. Presently, he is working as a Professor at the Department of Business Administration, International Islamic University Malaysia. His papers have appeared in *European Journal of Operational Research*, *International Transactions in Operational Research*, *International Journal of Commerce and Management*, *International Journal of Business Information Systems*, *International Journal of Business and Systems Research*, *Socio-Economic Planning Sciences*, etc. His research areas include multiple criteria decision-making, operations and quality management.

Naail Mohammed Kamil received his BSc in Geological Engineering from the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana in June 2006, MBA (specialization in Islamic Banking and Finance) from the Graduate School of Management, International Islamic University Malaysia (IIUM) in March 2009 and PhD in Business Administration from IIUM in February 2012. He has published extensively in the areas of Organizational Behavior, Ethics, Spirituality and Social Responsibility from the conventional and Religious perspective, particularly the Islamic perspective. His research and teaching interest include operations research, decision science, organizational behavior, business ethics and human resource management from the conventional and Islamic perspectives. He currently serves as a Senior Lecturer at SEGi University in Kuala Lumpur, Malaysia.

The area of decision making has attracted widespread attention from the researchers – past as well as present. In the present day prevailing competitive environment, making sound and viable decisions in organisations is becoming increasingly difficult. This is more so when the decisions involve multiple criteria of which some are conflicting in nature. Further, some of these criteria may also be

subjective in nature. To make a 'good' decision, the subjective criteria need to be quantified and incorporated in the decision making framework. This is where the Analytic Hierarchy Process (AHP) is enormously successful. In fact, one of the core strengths of AHP is its ability to deal with subjective criteria in a meaningful and acceptable way.

The AHP and its generalisation analytic network process (ANP) have been applied in numerous real world situations. The present special issue of *JIBED* is devoted to applications of AHP and ANP in international business and entrepreneurship development. The issue consists of five papers in the following areas: risk management (first paper), projects prioritisation (second paper), resource allocation (third paper), group decision making (fourth paper), and education (fifth paper).

The paper written by Rabihah deals with risk analysis. The author has applied AHP to prioritise a list of risk management actions. A set of six criteria have been considered for the prioritisation exercise of which the three most important criteria are (1) minimise probability of bankruptcy, (2) maximise share value growth, and (3) minimise earnings volatility. The author has used log-least squares method to derive the priorities from the pairwise comparisons matrices, and has given the details of the steps adopted in the analysis. Finally, the author has outlined on how the analysis can be extended by including various players and ensuing scenarios in the AHP hierarchy. The paper concludes with a list of strengths and weaknesses of AHP in risk analysis.

Amponsah has made an attempt to prioritise a list of five road transport projects by using the AHP. The author has used six major criteria named PESTEL (political, economic, social, technological, environmental, and legal). Each of these 'big picture' criteria has been divided into a number of sub-criteria but those are not used in the ranking of the projects. The application is simple, straight-forward and to the point. The methodology considered the financial as well as non-financial factors. To observe the stability of the ranking of the projects sensitivity analysis could have been done, but the exercise is left for further extension of the application by other researchers.

Vanzanella et al. have applied AHP in budget allocation in a large public university hospital in Italy. The authors have provided a step by step procedure of the method applied. The factors that influence budget allocation are put into category and sub-category and the hierarchy consists of four levels. The main categories are: personnel, structures, and technologies. Each of these categories has been divided into three sub-categories. A novel AHP questionnaire was designed to collect the data from selected personnel of the hospital. The authors comment that the AHP application has fulfilled the needs of the hospital management in at least five areas, namely (1) facilitating horizontal and vertical communication, (2) flexible and transparent prioritisation, (3) consensus decision, (4) involving people who have limited mathematics skills, and (5) using a scientific approach which is a requirement in the hospital.

Azadfallah and Azizi's paper deals with alleviating the difficulty in making a large number of pairwise comparisons using AHP, particularly in a group decision making setting. The authors have shown how the matrix decomposition method can be used to derive the priorities; the authors have also shown that the priorities derived using the matrix decomposition method are very close to the normally used eigenvector method, and hence they conclude that the priorities derived from the matrix decomposition method is equally reliable. But the authors did not provide the theoretical justification of using the decomposition method in deriving priorities. A supplier selection example is used to present the new method.

The purpose of the paper written by Anis and Islam was to provide a review of applications of AHP in education sector, particularly in institutions of higher learning (HLIs). The papers reviewed by the authors have been classified according to country of origin, publication year and specific area of education where the AHP has been applied. The authors have also provided an account of review of AHP that has been integrated with other methods and applied in the education sector. Some of the areas in education where AHP has been applied and reviewed here include faculty evaluation, measuring quality of education in HLIs, selection of university majors, university strategic planning, university procurement and bidding, and university ranking.

We hope that the readers will find all the above papers useful and interesting. The opinions expressed in the papers are authors'. However, any feedback on the papers will be gratefully received. Finally, we would like to thank the Editor-in-Chief of *JIBED* for accepting the request to dedicate this special issue for applications of AHP and ANP in international business and entrepreneurship development. We also thank the reviewers for their time spent to review the papers. The efforts of the staff of Inderscience Publishers in publishing the papers are also duly acknowledged. Last but not least, we thank the authors for their valuable contributions reported in this special issue.