Editorial

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Scientific decision making in the functional areas of business firms in the emerging market may enable the firms to become more competitive. More often than not, the problems of decision making in the firms are complicated owing to the presence of multiple decision makers who may have conflicting objectives. Further, the decision making process may deal with a plethora of criteria of which a large number are qualitative or subjective in nature. People have often faced difficulties in incorporating the qualitative factors in the decision making process in a meaningful and acceptable way. A model that does not use the subjective factors (owing to the apparent difficulty in quantification) in the decision making process, may end up providing sub-optimal solutions.

Analytic hierarchy process (AHP) and analytic network process (ANP) are two methods developed by Professor Thomas L. Saaty that are widely applied to make decisions in many areas. Both methods are simple enough to apply and are successful in incorporating the so-called subjective factors in the decision making process. The present special issue of JGBA contains six papers that amply describe applications of the above

two methods in a number of areas of a business firm. This special issue contains papers in the following areas: personnel selection (first paper), measuring level of leanness in a company (second paper), selection of an advanced manufacturing technology (third paper), machine maintenance strategy selection (fourth paper), electrical and electronic waste disposal strategy (fifth paper), and automation of water treatment plant (sixth paper).

Personnel recruitment is a task that is common across all types of organisations. Traditionally, recruitment is made by looking into candidates' CVs and conducting a short interview. Generally speaking, this type of selection process has a number of limitations. The major one is the lack of synthesis of the candidates' performance on quantitative as well as qualitative criteria. It is the opinion of many HR experts that selection should be made on the basis of quantitative as well as qualitative criteria. Obviously, the metrics for qualitative measurement are different from quantitative ones. The method applied to the selection process should be able to combine the quantitative and qualitative measurements and AHP is such a method. The authors, Bahurmoz et al., have applied AHP to select 20 research officers for Saudi Arabian Ministry of Foreign Affairs (MOFA). The selection process is found to be simple and free from biases. Further, the selection of the candidates can be justifiable, if need arises. The Ministry accepted the selection outcomes with satisfaction.

Lean production system has popularised by Toyota wherein the major focus is to eliminate all kinds of waste at every level and segment of the manufacturing processes of a company. Seyedhosseini and Taleghani have made an attempt to develop a model to measure the level of leanness of auto-part manufacturing companies in Iran. In the course of doing so, the authors have applied the concept of balanced scorecard and developed a hierarchy that comprises three levels, namely leanness perspectives, leanness objectives, and leanness criteria. The researchers have determined the priority weights of the perspectives and objectives using the ANP as perspectives and objectives have inner-dependencies among themselves. Further, owing to the presence of vagueness in the evaluation process, fuzzy numbers are used to denote the evaluation scores. The model developed has been used in a case study to firstly measure the level of leanness of an auto-part manufacturing company in Iran. Secondly, based on the measurement scores with respect to the criteria, the various processes in the company have been identified where more effort can be engaged to minimise the wastes and scraps so that level of leanness can be improved.

A range of advanced manufacturing technologies (AMT) are available that can aid manufacturing companies to improve productivity. However, proper selection of AMT should be made as each manufacturing company has its own business goals that are to be pursued within limited resource and other types of organisational constraints. İç and Yurdakul have developed a two-stage model to guide the companies to select the most suitable AMT for them. The novelty of the model lies in its capability to incorporate a number of factors, namely strategic contributions, budget restrictions, dependencies requirements at the same time. Goal programming and the AHP are the two main ingredients of the new model.

Maintenance of machines is routine work in manufacturing companies. Absence of proper maintenance of machinery might have detrimental effects on the company's productivity. Several types of maintenance options are available and each of them suits to a particular type of industry. Hence there is a need to choose the right maintenance strategy (option) for a particular industry (company). The authors, Kirubakaran and

Ilangkumaran, have used ANP, grey relational analysis (GRA) and technique for order preference by similarity to ideal solution (TOPSIS) to develop an integrated methodology to choose the right maintenance strategy for pump in a paper manufacturing company in India. The method is robust and generic enough to be applied by other companies to select a desired maintenance strategy.

It is widely viewed that environmentally responsible strategies of companies can contribute to attain competitive advantage and superior financial performance. One of the corporate objectives of firms is to produce environmental friendly products, and particular emphasis has been placed to produce products that can be recycled. Used-up physical products generate solid wastes that also need to be managed properly. One particular type of solid waste is electrical and electronic wastes or e-wastes. E-waste can come from refrigerators, cell phones, computers, television sets, etc. The current generation rate of e-wastes is 20–25 million tons per year in the world. Naturally, proper planning and strategy are necessary to manage this huge amount. The authors De Felice et al. have used the analytic hierarchy process and threats-opportunities-weakness-strength (TOWS) matrix to develop a model to improve the environmental sustainability of electrical and electronic wastes. The model has been used to demonstrate its working through a case study.

The paper written by Macuada et al. pertains to whether or not to automate a water treatment plant in the metropolitan region of Chile. Though the automation process is a costly affair, but it can entail a number of positive outcomes for the company. However, an affirmative decision on the issue might affect multiple stakeholders of the company, namely general manager, deputy managers, heads of plants, supervisors, operators, and project engineers. Therefore, views should be sought from all the affected people. Furthermore, the decision involves a multitude of quantitative as well as qualitative criteria. Therefore, the complexity of the decision making problem needs to be resolved carefully as the water treatment plant caters for 6 million people living in the region. The authors have found AHP to be an appropriate method that can be used to develop a model to make a justifiable decision on the issue mentioned above. The AHP analysis has given the green light to go ahead with the automation process.

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. These are merely few of the numerous applications of AHP and ANP in the context of business firms. Surely, AHP and ANP deserve to be applied in a lot more areas.

Finally, we would like to thank the Editor-in-Chief of JGBA for accepting to dedicate this special issue for applications of AHP and ANP in emerging markets' business firms. We also thank the reviewers for their time spent to review the papers. The efforts of the staff of Inderscience 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.