

## Multi-criteria decision making for group decision support system

### Abstract:

Group Decision Support System (GDSS) is suitable if used in decision-related meeting as a medium for them to share ideas, extract and analyze the information, and making decision. However, making decision is more complex where multiple criteria, conflict, and judgment need to be considered, which referred to as Multi-Criteria Decision Making (MCDM). Therefore, a suitable technique is preferred to solve the multi-criteria problem in GDSS. Many authors have developed fuzzy AHP method in order to solve MCDM problem because of its ability to extend the strength of Analytical Hierarchy Process (AHP) with fuzzy set theory which able to consider vagueness and both quality and quantity factors. In spite of its strength and ability to solve MCDM problem, fuzzy AHP still contains mathematical calculations which is considered quite complicated for some people, and lack of voting opportunity for the decision makers. Thus, another method in MCDM is introduced here, which is the Social Choice (SC) method along with its ability to give opportunity of voting for the decision makers. In this study, the author will append the SC method in the last steps of fuzzy AHP decision making process in order to let the decision makers to directly involve in the most important part of decision making.