Asian Institute of Technology
School of Engineering and Technology
Department of ICT

AT84.02: Business Intelligence and Analytics January 2023

ASSIGNMENT 2

Multi Criteria Decision Making

Due: 31 March 2023

In everyday life, people may make a decision based on gut feeling or intuition. However, for major decisions, involving high investment or long-term effect, such decisions should be made in a careful evaluation process.

Multi Criteria Decision Making (MCDM) is a sub-discipline of operation research handled with multiple conflicting criteria toward decision making process and direction. MCDM has many approaches such as analytical hierarchy process (AHP), the weighted sum and weighted product methods (WSM/WPM), the Technique for the Order of Preference by Similarity to the Ideal Solution (TOPSIS), and the Preference Ranking Organization Method for Enrichment Evaluation (PROMETHEE), among others.

Task: The assignment is to build a small system (with a decision model) for ONE selected (out of 3) scenario. For each scenario, assume that there are 4 choices to select. For example, for scenario 2, it means that there are 4 vendors to choose from.

Scenario1: Selecting the best location for a new convenience store.
Scenario2: Selecting the best vendor for outsourcing IT services.
Scenario3: Evaluating different software tools for project management.

1. You can select one of listed scenarios and use any open-source MCDM software of your choice. You should start with the identification of appropriate criteria and sub-criteria for making a decision and you can make necessary assumptions as needed.

2, You need to identify 4 choices and test your system to select the most suitable one. You need to submit a report to describe this system and how the system concludes the evaluation.

Objectives

This assignment aims to help you:

1. Understand decision making process from multiple criteria
2. Generate the creativity essential possible criteria
3. Analysis of possible criteria for specific scenario
4. Evaluate the system through sensitivity analysis

Note:

1. You can make any assumptions, as needed.
2. Please name your assignment as BIA_Assignment2_YourName and submit it as a PDF file in Google Classroom