Assumed Certainty: Multi-Attribute Decision Making (MADM)

Scenario: You are the Vice President of Franchise Services for the Happy Buns restaurant chain. You have been assigned the task of evaluating the best location for a new Happy Buns restaurant. The CFO has provided you with a template that includes 6 criteria (attributes) that you are required to use in your evaluation of 5 recommended locations. Following are the 6 criteria that you will use to evaluate this decision:

Traffic counts (avg. thousands/day)—the more traffic, the more customers, and the greater the potential sales.

Building lease and taxes (thousands $ per year)—the lower the building lease and taxes, the better.

Size of building (square feet in thousands)—a larger building is more preferable.

Parking spaces (max number of customers parking)—more customer parking is preferable.

Insurance costs (thousands $ per year)—lower insurance costs are preferable.

Ease of access (subjective evaluation from observation)—you will need to “code” the subjective data. Use Excellent = 4, Good = 3, Fair = 2, and Poor = 1.

Now that you have collected the data from various sources (your CFO and COO, local real estate listings, personal observation, etc.), you have all the data you need to complete an analysis for choosing the best location. Download the raw data for the 5 locations in this Word document: BUS520 SLP1V1.docx (attached)

**Assignment:**

Review the information and data regarding the different alternatives for a new restaurant location.

Then do the following in Excel:

Table 1: Develop an MADM table with the raw data.

Table 2: Convert the raw data to utilities (scaled on 0 to 1). Show the utility weights in a second table.

Table 3: Develop a third table with even weights (16.7%) for each variable.

Evaluate Table 3 for the best alternative.

Table 4: Complete a sensitivity analysis by assigning weights to each variable.

In a Word document, do the following:

Discuss the process used to put together Tables 1–4 above.

Provide the rationale you used for choosing for each of the weights you used in Table 4.

Give your recommendation of which location the company should choose (based on results of Table 4).

**Assignment Expectations**

Excel Analysis

Complete Excel analysis using MADM (all four tables noted above must be included).

Accurate Excel analysis (Excel file includes working formulas showing your calculations; all calculations and results must be accurate).

Written Report

This means that you should avoid use of tables and charts as “space fillers.”

Provide a brief introduction to/background of the problem.

Discuss the steps you used to compile the Excel analysis (i.e., the four tables).

Discuss the assumptions used to assign weights to each variable of your sensitivity analysis (Table 4). That is, provide the rationale for your choice of weights for each variable.

Provide a complete and meaningful recommendation related to the location that should be chosen as a new site.

References:

Ibrahim, M. (2009). Theory of bounded rationality. PM. Public Management, 91(5), 3-5. (Attached)

Spaeder, K. (n.d.). How to Find the Best Location, retrieved from http://www.entrepreneur.com/article/73784#

Holcomb, D. (n.d.) Module 1 - SLP: Multi-attribute decision making (MADM). PDF version (Attached)

For a general understanding of decision making and the process, watch this video:

[*http://permalink.fliqz.com/aspx/permalink.aspx?at=d55a346d20aa466d84ffd99b15f7d128&a=5fae3cf0f1624f39b0341263a6541ea0*](http://permalink.fliqz.com/aspx/permalink.aspx?at=d55a346d20aa466d84ffd99b15f7d128&a=5fae3cf0f1624f39b0341263a6541ea0)