Decision Making Analysis: An Introduction

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Based on *Smart Choices: A Practical Guide to Making Better Decisions*, by Hammond, Keeney, Raifa. A good summary of which is <u>here</u>.

- 1. Problem Statement
 - a. Identify/Frame/Define and Refine the Problem/Issue
 - b. Must avoid being: unfocused, solution driven, assumption driven, ambiguous or contain ill-defined terms. Avoid using "and"
- 2. Rationale and Stakeholders
 - a. In some cases the rationale for making a decision may be absolutely clear
 - b. Stakeholders need to be considered and, in some instances, consulted in developing and assessing alternatives.
- 3. Objectives/Priorities
 - a. Specify objectives
 - b. Rank them according to importance. Eliminate unimportant objectives.
 - i. Extremely, Very, Important
 - c. Develop scales to assess how each alternative meets each objective.
 - i. Raw numbers, percentages, High likely to Highly Unlikely (HL, L, UL, HU), Levels of support based on surveys, etc
 - d. Identify data sources for measuring.
 - i. Statistics, perception, literature review, expert opinion
 - e. A table is the best way to capture this.

Rank	Objective	Relative Importance	Data Source	Scale	Alternative #1	Alternative #N

4. Alternatives

- a. Usually based on review of literature
- 5. Processing and Evaluating Alternatives
 - a. Complete the table by analyzing each alternative according to the scale
 - b. One method: Eliminate neutralized objectives across alternatives. Use the "Franklin" method.
- 6. Expense Table
 - a. Expenses are sometimes brought into the objective section, but for many analyses, the costs are calculated separately.
 - b. Costs should include equipment, human capital, opportunity costs, third-party services.