

MAUT (Multi-Attribute Utility Theory)

WHAT IT IS & HOW IT WORKS



MAUT (Multi-Attribute Utility Theory) is a decision-making method that helps you choose the best option when you have multiple alternatives and multiple factors to consider.



WHAT IS MAUT?

MAUT breaks a decision into several criteria (attributes) that matter to you, assigns importance (weights) to each criterion, rates how well each option performs on each criterion, and combines everything into a single utility score to identify the best choice.



HOW IT WORKS (IN SIMPLE TERMS)

You decide what matters, rate your options, apply the importance of each factor, and calculate a total score. The option with the highest total utility score could be your best choice.

Note: This is one of many ways to assess your options.

THE 5-STEP MAUT PROCESS

1



DEFINE YOUR DECISION

State your decision question and list your alternatives (options) clearly.

2



IDENTIFY CRITERIA & WEIGHTS

List the factors (criteria) that matter and assign a weight (%) to each. Total weight = 100%.

3



RATE EACH OPTION

Rate how well each option performs on each criterion using a consistent scale (e.g., 1–10).

4



CALCULATE WEIGHTED SCORES

Multiply each rating by the criterion's weight to get the weighted score for each option and sum the results.

5



MAKE YOUR DECISION

Compare the total utility scores. The option with the highest score is your best choice based on your priorities.

THE MAUT FORMULAS

1. WEIGHTED SCORE (PER CRITERION)

$$\text{Weighted Score} = \text{Rating} \times \text{Weight}$$

↑ ↑
How well the
option performs
(1–10 or other
scale) Importance of
the criterion
(as a decimal)

2. TOTAL UTILITY SCORE (PER OPTION)

$$\text{Total Utility Score} = \sum (\text{Weighted Scores})$$

↓
Sum of all weighted scores
across all criteria

REMEMBER



Use weights as
decimals
(e.g., 30% = 0.30)
in calculations.



QUICK TIPS

- Be specific with criteria that truly impact your decision.
- Ensure weights add up to 100%.
- Use a consistent rating scale for all options.
- Review results—does the top option make sense to you?

MAUT (Multi-Attribute Utility Theory) WORKSHEET

ACADEMIC DECISION-MAKING EXAMPLE

Note: Consult with your AEA advisor for a copy of the worksheet.

1 DEFINE YOUR DECISION

Decision Question: Which opportunity should I commit to for next semester?

Alternatives (Options):

Option 1	Option 2	Option 3
Undergraduate Research  Work with a faculty member on a research project.	Study Abroad  Semester program in another country to experience a new culture and learn.	Summer Internship  Work in a professional setting to gain real-world experience.

2 IDENTIFY YOUR DECISION CRITERIA

List the factors that are important to you and assign a weight to each.
(The total weight must equal 100%)

Decision Criteria	Weight (%)
1. Career / Graduate School Preparation	30%
2. Skill Development	25%
3. Personal Interest	20%
4. Financial Cost (higher = lower cost)	15%
5. Networking Opportunities	10%
TOTAL	100%

3 RATE EACH OPTION (1 = Poor, 10 = Excellent)

Rate each option for each criterion using a scale from 1–10.

Criteria	Weight (%)	Option 1 Undergraduate Research	Option 2 Study Abroad	Option 3 Summer Internship
1. Career / Graduate School Preparation	30%	10	7	9
2. Skill Development	25%	8	8	10
3. Personal Interest	20%	8	10	7
4. Financial Cost (higher = lower cost)	15%	9	4	8
5. Networking Opportunities	10%	7	8	9

4 CALCULATE WEIGHTED SCORES

Multiply each rating by the weight (as a decimal).
Weighted Score = Rating × Weight

Criteria	Weight (as decimal)	Option 1 Undergraduate Research		Option 2 Study Abroad		Option 3 Summer Internship	
		Calculation	Score	Calculation	Score	Calculation	Score
1. Career / Graduate School Preparation	0.30	10 × 0.30	3.00	7 × 0.30	2.10	9 × 0.30	2.70
2. Skill Development	0.25	8 × 0.25	2.00	8 × 0.25	2.00	10 × 0.25	2.50
3. Personal Interest	0.20	8 × 0.20	1.60	10 × 0.20	2.00	7 × 0.20	1.40
4. Financial Cost (higher = lower cost)	0.15	9 × 0.15	1.35	4 × 0.15	0.60	8 × 0.15	1.20
5. Networking Opportunities	0.10	7 × 0.10	0.70	8 × 0.10	0.80	9 × 0.10	0.90
TOTAL UTILITY SCORE	1.00	8.65		7.50		8.70 ★	

5 MAKE YOUR DECISION

Rank the options from highest to lowest total utility score.

Rank	Option	Total Utility Score
1	Summer Internship	8.70
2	Undergraduate Research	8.65
3	Study Abroad	7.50

The option with the **HIGHEST** total utility score is your best choice based on your priorities.

FORMULA REMINDER

Weighted Score
= Rating × Weight
(use weight as a decimal)

Total Utility Score
= Sum of All Weighted Scores

