



PAIR-WISE COMPARISON

Purpose

The pair-wise comparison technique is used when you have multiple options to prioritize. It helps you to narrow the options according to a set of agreed-upon criteria. It may be used to prioritize or rank needs (that is, gaps in results) or possible solutions (that is, interventions or activities) to address those needs.

Needs Assessment Applications

A pair-wise comparison is a simple, yet effective, tool for facilitating group decisions that are based on the information collected during a needs assessment. This analysis technique is a worthwhile tool for prioritizing needs, determining the relationships among multiple causal factors, or recommending potential improvement activities. Whenever you have multiple options or alternatives to consider, you can quickly use a pair-wise comparison to advance group discussions toward a decision. (For a helpful sample template to serve as job aids, see page 190.)

Advantages and Disadvantages

Advantages

- A pair-wise comparison is easily done and can be completed quickly during a group discussion to progress toward a decision or recommendation.

- Criteria for comparing options can remain informal, thereby letting participants make judgments that are based on their experience and expertise.

Disadvantages

- Pair-wise comparisons do not provide the level of detail or sophistication of a multicriteria analysis (see page 171).
- Although criteria for making comparisons are discussed within the group, each participant may apply varying criteria (without public disclosure to other group members) when making comparisons.

Process Overview

1. Make sure that the analysis process begins (as is typical) with (a) two or more needs, (b) two or more alternative interventions, or (c) activities that were previously identified as potential solutions to a need. Although you can complete the analysis for the number of potential needs solutions that you have, the time and effort required to collect valid information for comparison typically necessitates that you limit the analysis to no more than five or six of the most likely contenders.
2. List the possible options in both the first column and the first row of the pair-wise comparison table (see table 3B.3). Working with those who will be making the decision or recommendation, discuss the performance criteria required of alternatives.

Examples of Criteria for Comparing Needs and Solutions

Example criteria for comparing **needs** could include the following:

- Number of people influenced by the continuation of the need
- Availability of partners to help address the need
- Anticipated costs to meet the need
- Increasing severity of the need over time
- Alignment of the needs with the institution's mission

Example criteria for comparing **solutions** could include the following:

- Total time required
- Cost of the activity over the first year
- Environmental impact

Table 3B.3 Sample of a Completed Pair-Wise Comparison Table

	Option A Playground equipment	Option B Benches	Option C Picnic tables	Option D Tree and flower planting	Option E Walking paths
Option A Playground equipment					
Option B Benches	B				
Option C Picnic tables	A	B			
Option D Tree and flower planting	D	D	D		
Option E Walking paths	E	B	E	D	

Note: This example presents some options preferred by community members for a new community park, which is part of a larger municipal project to build and improve green spaces in the city. In the example, the number of pair-wise “wins” is as follows: A (playground equipment) = 1, B (benches) = 3, C (picnic tables) = 0, D (tree and flower planting) = 4, E (walking paths) = 2. By using this example, you might concentrate your group discussions going forward more on building a park that emphasizes trees and flowers, benches, and walking paths. But you might also consider that you may not have had a representative number of young parents with children in your pair-wise session. This example gives one set of rankings at one point in time and is a good reminder that multiple sessions may be needed with different groups to get a representative picture of community preferences.

- Results expected after six months
 - Feasibility of implementation
3. Talk with others about the most important criteria (or attributes) to making the decision (time, cost, number of outputs, client satisfaction index, number of injuries, ability to accomplish desired outcomes, and so on). Typically, consider no more than two to three criteria for any decision.
 4. If you are in a group setting, write the agreed-upon criteria on a whiteboard or flip chart.
 5. Ask participants who will be making the decision or recommendation to keep each of the discussed criteria in mind as they compare each option using the pair-wise comparison table in table 3B.3. For example, is Option A or Option B the preferred option according to the discussed criteria? Then, is Option A or Option C the preferred option, and so forth. Continue until all options have been compared.

6. Have participants count the number of times each option appears in the table. The option that was selected the greatest number of times, in comparison with the alternatives, is the leading option.
7. Review the analysis carefully, noting that this technique does not directly facilitate the comparison of combinations (for example, Option A combined with Option C). Discuss with participants the results of the analysis so that you can make decisions or recommendations, with the analysis results being one of the primary inputs to the decision.

Websites

An example of pair-wise comparisons applied to voting can be found at <http://www.pbs.org/teachers/mathline/concepts/voting/activity3.shtm>.
 Examples worked through to illustrate the technique can be found at http://deseng.ryerson.ca/xiki/Learning/Main:Pairwise_comparison.

Sample of Job Aids

Pair-Wise Comparison Template

	Option A	Option B	Option C	Option D	Option E
Option A					
Option B					
Option C					
Option D					
Option E					