

score similarly, that none fall below a score of five, but that the biggest differences occur on the lower right axis – impact on current religious use of the site.

Sensitivity analysis

In Figure 1, columns W2 and W3 are used as ‘what if’ weightings that can be quickly changed to see how the decision changes. Selecting the weights of column W2 will show what happens if the criterion ‘Low impact on religious use of the site’ is given a maximum weighting (nine points). It was found that the decision did not change, it remained on option 3. For the weights of column W3, the weighting for religious use (criteria #3) was lowered until the decision changed. It was found that down to a weight of 5.8, the decision was unchanged, but at a weight of 5.7 or less the decision shifted to option 1. It can be very helpful to building consensus if one can demonstrate that a decision is not sensitive to the range of opinions on a particular weighting or score. In this example, weighting of the religious use criteria can range from 5.8 to 9 without the decision changing.

Software tools

A matrix that does the arithmetic behind the scenes can easily be built with rudimentary knowledge of formulas in any spreadsheet software. One can find free decision matrix templates online that use Excel™. Features of the spreadsheet created by the author for the SCD 2008 course, Figure 1, include quick toggling between three different sets of weights, and conditional formatting to highlight the option with the best scores on each criterion (green cells, Figure 1).

This article does not survey specific decision-making gadgets and software one can find online – they come and go too quickly. Free tools tend to keep your data online, tools that stand alone on your computer tend to be expensive. That said, there are some online tools that facilitate the process of weighting criteria by using ‘pairwise comparisons’ and sliders that make selection of scores more visual.

When the goal emerges after the criteria

As Henderson and Waller (2016) stress, one should clarify one’s goal before setting up any decision-making process. In risk management, for example, it might be “to minimize expected loss of asset value as measured 100 years in the future”. For many decisions however, definition of a goal before defining criteria is not so simple. The classic example given in texts on decision-making is that of someone selecting a car (or now a smart-phone). The criteria are often contradictory – initial cost, fuel efficiency, prestige, sportiness, cargo capacity. The most common expression of the goal for such decisions is simply ‘the best all-around option’ whether car or conservation treatment. The key to understanding whether the selected criteria will constitute the correct goal is to understand *for whom*