

Local Results (Cluster Priorities)

The priorities for elements in each cluster of the objectives hierarchy, as well as the priorities derived for the alternatives with respect to each covering objective, are referred to as "local" priorities.

The options available on the "Cluster Priorities" page depend on if the inconsistency ratio is hidden or shown.

Local Results when Inconsistency Ratio is hidden

If the Project Manager has specified that the inconsistency ratio for your judgments not be shown, you will see the priorities for the judgments elements you have just made on a screen that looks like:

You have completed prioritizing your Objectives with respect to "Goal: Optimize IT Portfolio To Improve Performance"  

Priority of Objectives with respect to "Goal: Optimize IT Portfolio To Improve Performance"

| No ▲ | Name | Participant results |
|------|-----------------------------------|--|
| 1 | Leverage Knowledge | 33.81%  |
| 2 | Improve Organizational Efficiency | 16.39%  |
| 3 | Maintain Serviceability | 7.17%  |
| 4 | Minimize Risks | 11.92%  |
| 5 | Financials | 30.71%  |

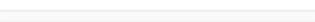
[Click here if you would like to redo a judgment for one pair of elements](#)

You can click on any heading to sort by that column.

If you think the priorities are not reasonable (i.e., are not intuitive), then click the

[Click here if you would like to redo a judgment for one pair of elements](#) button.

You can then (1) select a pair of elements: one element that you think may have too high a priority and the other element too low a priority.

| No ▲ | Name | Participant results |
|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | 1 Leverage Knowledge | 40.72%  |
| <input checked="" type="checkbox"/> | 2 Improve Organizational Efficiency | 14.83%  |
| <input type="checkbox"/> | 3 Maintain Serviceability | 4.60%  |
| <input type="checkbox"/> | 4 Minimize Risks | 11.37%  |
| <input type="checkbox"/> | 5 Financials | 28.49%  |

Inconsistency ratio: 0.08

Select a pair of elements (by clicking the checkbox on left) for which you think:
One has too high a priority, and the other has too low of a priority

[Cancel](#) [Re-Evaluate](#)

(2) After selecting the pair and clicking "Re-evaluate," you will be taken to the screen where you can enter or revise the judgment comparing these two elements.

After doing so and clicking Next, you will be taken back to the screen showing the revised cluster priorities.

Local Results when Inconsistency Ratio is shown

If the Project Manager has specified that the **inconsistency ratio** of your judgments is shown (See [Math of AHP](#) and [Inconsistency Ratio](#)), then the priorities of the elements - as well as the inconsistency ratio - will be displayed on a screen like the following:

You have completed prioritizing your Objectives with respect to "Goal: Optimize IT Portfolio To Improve Performance"  

Priority of Objectives with respect to "Goal: Optimize IT Portfolio To Improve Performance"

| No ▲ | Name | Participant results | |
|------|-----------------------------------|---------------------|------------------------------------|
| 1 | Leverage Knowledge | 33.81% | <div style="width: 33.81%;"></div> |
| 2 | Improve Organizational Efficiency | 16.39% | <div style="width: 16.39%;"></div> |
| 3 | Maintain Serviceability | 7.17% | <div style="width: 7.17%;"></div> |
| 4 | Minimize Risks | 11.92% | <div style="width: 11.92%;"></div> |
| 5 | Financials | 30.71% | <div style="width: 30.71%;"></div> |

Inconsistency ratio: 0.15

[Click here if these priorities or the inconsistency are not satisfactory](#)

As a very rough rule of thumb, the inconsistency ratio should be .10 or less. However, there are reasons for accepting results even if the inconsistency ratio is as high as .2 or .3. (See [Inconsistencies](#), or [Decision by Objectives](#) on [Professor Forman's Website](#) or at [Amazon](#).) It is more important that the priorities be reasonable to you than to have a low inconsistency ratio. You should NOT change judgments just because of inconsistencies. You *should* re-examine judgments because of high inconsistency and change only those judgments that you feel were incorrectly recorded or for which you have a change of opinion -- regardless of inconsistency.

If you feel that either the priorities are not satisfactory or would like to review the judgments to address a high inconsistency ratio, click the above button. Doing so will produce the following screen:

[Click here to review all your judgments](#)

[Click here if you think the inconsistency is too high](#)

If you think the priorities are not reasonable then:

[Click here if you would like to redo a judgment for one pair of elements](#)

[Cancel](#)

Clicking the "[Click here to review your judgments](#)" will take you through the first page of the evaluation for the given cluster.

Clicking the "Click here if you think the inconsistency is too high" button will result in a screen showing the judgment matrix (discussed below).

Clicking the "Click if you would like to redo a judgment for one pair of elements" will take you through the sequence explained at the top of this page.

Judgment Matrix

The judgment matrix will be displayed when you click the second button

[Click here if you think the inconsistency is too high](#)

You have completed prioritizing your Objectives with respect to "Goal: Optimize IT Portfolio To Improve Performance"  

Priority of Objectives with respect to "Goal: Optimize IT Portfolio To Improve Performance"

Judgment Table

If elements in the table are sorted from high to low priority, then judgments should generally be increasing in any row from left to right, and in any column from bottom to top. Although exceptions to this pattern are valid, they may indicate a judgment that should be examined for accuracy.

| Sort by priority | Leverage Knowledge | Improve Organizat... | Maintain Servicea... | Minimize Risks | Financials |
|------------------------------|--------------------|----------------------|----------------------|----------------|------------|
| Sort by original order | | | | | |
| Leverage Knowledge | | 5 | 2 | 2 | |
| Improve Organizational Ef... | | | 4 | 2 | 2 |
| Maintain Serviceability | | | | 3 | 4 |
| Minimize Risks | | | | | 4 |
| Financials | | | | | |

Legend:

- 1 Equal
- 2 Between
- 3 Moderate
- 4 Between
- 5 Strong
- 6 Between
- 7 Very Strong
- 8 Between
- 9 Extreme

Click a cell in the upper matrix to review or revise a judgment, including a missing judgments. To change several judgments at once, click "Make changes on this screen"

Red numbers indicate judgments for which the column element is more important than the row element.

Inconsistency ratio: 0.15

Rank
 Best Fit
 Make changes on this screen
 Review all judgments in cluster

The judgments shown in the cells of the matrix indicate how much more important or preferable the row element corresponding to a judgment cell is, rather than the column element corresponding to the judgment cell.

Red judgments mean that judgments for an element in the column are more important or preferable than an element in a row.

Blank cells in the upper diagonal of the matrix represent judgments that were not elicited or entered.

The radio button Review all judgments in cluster makes the intersecting cells clickable. Clicking on any one of the cells will redirect you to the step displaying the pairwise comparison for the row and column elements corresponding to that cell.

Make changes on the judgment matrix

If you wish to make or investigate possible changes to judgments in the matrix itself, click on the

Make changes on this screen button and enter or change the judgment.

The judgments are shown numerically in this matrix, regardless of whether they were made in the verbal or numerical/graphical modes.

You can type in judgments and then press enter to save.

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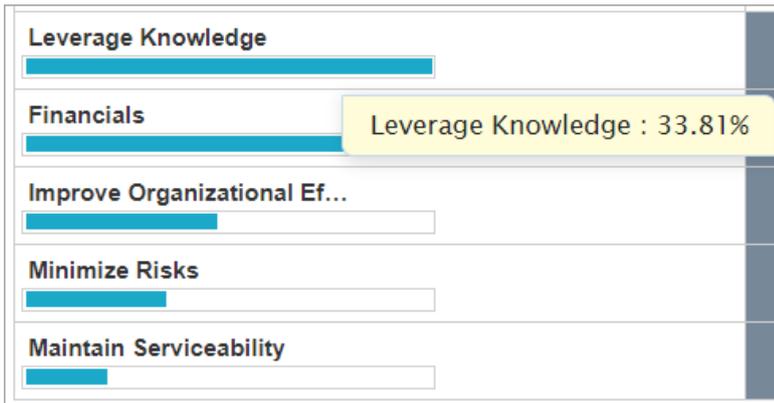
To invert judgments (change from black to red or red to black), press either the - or i keys. Inverting is saved automatically.

Red judgments mean that judgments for an element in the column are more important or preferable than an element in a row.

By default, the elements (objectives or alternatives) are sorted by original order in the model as shown above.

You can sort the elements by priority (descending) by clicking  .

You can easily notice that elements are sorted by priority by looking at the priority bars below the elements:



You can hover on the element cell to see its priority as shown above.

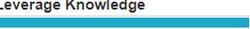
You can sort back the elements based on their original order by clicking  .

You can then click Sort by priority to see how the sorting changed after altering the judgments.

Conditions for consistent judgments when the matrix is sorted by priority.

If the judgments were perfectly consistent, they would be increasing (or more precisely non-decreasing) as you look at them:

- a) from left to right in each row, and
- b) from bottom-up in each column

|   | Leverage Knowledge | Financials | Improve Organiza... | Minimize Risks | Maintain Serviceability |
|--|--------------------|------------|--|--------------------------------|--------------------------------|
| Leverage Knowledge  | | |  5 | <input type="text" value="2"/> | <input type="text" value="2"/> |
| Financials  | | | <input type="text" value="2"/> | <input type="text" value="4"/> | <input type="text" value="4"/> |
| Improve Organizational Ef...  | | | | <input type="text" value="2"/> | <input type="text" value="4"/> |
| Minimize Risks  | | | | | <input type="text" value="3"/> |
| Maintain Serviceability  | | | | | |

Click a cell in the upper matrix to review or revise a judgment, including a missing judgments. To change several judgments at once, click "Make changes on this screen".
Inconsistency ratio: 0.15

In the above figure, which corresponds to a "reasonably" low inconsistency ratio of 0.15, the most inconsistent judgment is the 5 in the top row, which violates condition a) above. Changing this judgment to a 1 (less than the 2 to its right) will

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decrease the inconsistency to 0.04. However, changing judgments just to reduce the inconsistency is NOT A GOOD IDEA. Judgments should be changed only when the evaluator feels that the judgment itself was an error or is no longer warranted. If this judgment (Financials vs. Improve Organizational efficiency) was to be changed from a 5 to a 1, the ranks of the elements also change as shown below:

| <input type="button" value="Sort by priority"/> <input type="button" value="Sort by original order"/> | Financials | Improve Organizational Efficiency | Leverage Knowledge | Minimize Risks | Maintain Serviceability |
|--|------------|-----------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Financials | | <input type="text" value="2"/> | | <input type="text" value="4"/> | <input type="text" value="4"/> |
| Improve Organizational Efficiency | | | <input type="text" value="1"/> | <input type="text" value="2"/> | <input type="text" value="4"/> |
| Leverage Knowledge | | | | <input type="text" value="2"/> | <input type="text" value="2"/> |
| Minimize Risks | | | | | <input type="text" value="3"/> |
| Maintain Serviceability | | | | | |

Click a cell in the upper matrix to review or revise a judgment, including a missing judgments. To change several judgments at once, click "Make changes on this screen"

Inconsistency ratio: 0.04

If the evaluator doesn't believe that a judgment of 1 (equal) is appropriate, or that the change in ranks of the objectives/alternatives is correct, then pressing the button will abandon all changes and return to the original judgments.

Looking at the original matrix and without knowing what the participant's thinking is for these judgments, it is more likely that changing the 2 (Leverage Knowledge vs. Maintain Serviceability) to something higher, such as 8 ("very strong to extreme" if these were verbal judgments), would be more appropriate -- it violates both conditions a) and b) above.

| <input type="button" value="Sort by priority"/> <input type="button" value="Sort by original order"/> | Leverage Knowledge | Financials | Improve Organizational Efficiency | Minimize Risks | Maintain Serviceability |
|--|--------------------|------------|-----------------------------------|--------------------------------|--------------------------------|
| Leverage Knowledge | | | <input type="text" value="5"/> | <input type="text" value="2"/> | <input type="text" value="8"/> |
| Financials | | | <input type="text" value="2"/> | <input type="text" value="4"/> | <input type="text" value="4"/> |
| Improve Organizational Efficiency | | | | <input type="text" value="2"/> | <input type="text" value="4"/> |
| Minimize Risks | | | | | <input type="text" value="3"/> |
| Maintain Serviceability | | | | | |

Click a cell in the upper matrix to review or revise a judgment, including a missing judgments. To change several judgments at once, click "Make changes on this screen"

Inconsistency ratio: 0.08

Even though this inconsistency (.08) is more than that resulting from the first change considered (.04), it is more logical. But once more, we must say it is NOT A GOOD IDEA to change judgments just to lower the inconsistency ratio.

Click on the to return to the results screen.

Note: Comparion doesn't calculate inconsistency for a group of evaluators because the group geometric average reduces the consistency considerably, so the simulations that were done for individual sets of judgments do not apply for priorities computed from geometric averages.

Rank and Best Fit

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You can display the inconsistency rank and the best fit by checking Rank and Best Fit respectively.

This will show small numbers on each cell with judgments.

| Improve Organiza... | Minimize Risks | Maintain Servicea... |
|--------------------------------|--------------------------------|--------------------------------|
| 5 ¹ _{1.27} | 2 ⁷ _{3.53} | 2 ² _{9.53} |

The **Rank by Inconsistency** is the number at the upper right (blue), while the **best fit** is at the lower right (black or red (inverted)) of the actual judgment.

The **Rank by Inconsistency** is the order of inconsistency of that judgment with the other judgments. So, for example, the cell with a judgment of 5 (strong in the verbal mode) and a 1 in the upper right corner of the cell is the most inconsistent judgment; and the judgment of 2 with a 2 in the upper right of the cell is the second most inconsistent judgment.

The **best-fit** judgment is not necessarily the best judgment, but rather it is the judgment that fits best with all of the other judgments that were made.

Best Fit suggests what changes should be made to the judgments to reduce inconsistency from a mathematical perspective. It is not advisable to change judgments to the "best fit" values, but rather to use the "best fit" values to give you an idea of which judgments you might want to reconsider in order to reduce the inconsistency. As a decision-maker, you must determine if this is logical and what changes in judgment should be made versus what is recommended.
