

Evaluating Jury Questionnaires Using Microsoft Excel - Part 1

David M. Caditz, Ph.D.

January 24, 2023

Introduction

When it comes to jury questionnaires, trial lawyers commonly adopt what I call the “brute force” evaluation method, attacking the stack of questionnaires one at a time and assigning ratings one-by-one to potential jurors. The process is often rushed as courts seldom provide sufficient time for thorough evaluation. It is not uncommon for lawyers and their staff to spend the night before courtroom jury selection combing through jury questionnaires. The rushed evaluation process risks inaccurate and inconsistent rating assignments, meaning that similar jurors may not be assigned similar ratings.

Conceptually, the assignment of juror ratings is nothing other than dividing the venire into groups of similar jurors, according to their perceived favorability. Statisticians and social scientists have known for some time that there are advantages to “inverting” the evaluation process by *first* grouping the jurors according to their similarities and only then assigning ratings to the resulting groups. This is a much faster process because the groups can be formed in a matter of seconds by computer algorithm. The lawyer then need only rate a small number of groups according to their typical or representative characteristics. It also ensures that similar jurors receive similar ratings. This method is known as *cluster analysis*.

Specialized statistical, such as IBM’s SPSS program, can perform cluster analysis, but such software packages are designed for evaluating many hundreds or thousands of questionnaires, and seem like overkill for jury selection applications. On the other hand, most legal firms have familiarity with Microsoft Excel. This paper describes how to use Excel to perform a pseudo-cluster analysis of juror questionnaires and use the result to rate jurors. This method is accomplished in five steps:

1. Evaluate the questionnaire
2. Prepare your spreadsheet
3. Input response data

-
4. Sort the juror list
 5. Rate the sorted list of jurors

1 Evaluate the Questionnaire

Start by getting hold of a blank copy of the questionnaire. Courts often post blank copies online for jurors to download. Attorneys should already have blank copies of any supplemental questionnaires. Determine which questions you feel are relevant to your case and which questions you can disregard. Of the relevant questions, determine the response type. Response types can be closed ended, where the juror selects from among a fixed set of responses, or open ended, where the jurors can enter responses in their own words. Some questions will require both closed and open-ended responses. For example, a yes/no question may add an 'If yes, explain' followup. These can be treated as two separate questions - one closed ended and one open ended. Finally, make a judgment as to which questions are the most important for determining the value of a juror.

2 Prepare Your Spreadsheet

Create a new Excel spreadsheet with two worksheets. Name the first worksheet 'Questionnaire' and the second 'Response Lists'. On the Response List worksheet, create an Excel table for each closed end question. Each table will contain a list of possible responses. You can type the responses into a column on the worksheet, select them, and enter Ctrl-T to turn the list into a table. Using tables allows for easy updating if you decide later to change any items or add items to the list. Double click in the table title and give the table a descriptive name. Finally, add two more tables, one titled 'Open Ended' with the numbers 1 through 5 and one titled 'Juror Rating' with the numbers 1 through 10. Your Response List worksheet should look something like Figure 1.

Now, on the Questionnaire worksheet, create a columns for juror ID number, name and rating. Then create one column for each question. It is useful to order the columns in the order that the questions appear on the questionnaire. If desired, you can format the sheet as a table. The Questionnaire worksheet should look like the one in Figure 2.

The final step to prepare the spreadsheet is creating the response dropdown lists. Select all of the cells below Question 1. Then, from the menu ribbon, select **Data**. In **Data Tools** choose **Data Validation**. On the popup window, select **Allow: List**. Click the up arrow in the **Source** field then select the relevant answers that you created earlier on the Response List worksheet. In the example shown in Figure 2, this is a Yes/No question. Do this for all of the remaining questions. For open-ended questions, use the 1 through 5 response list. Finally, in the juror rating column, select the 1 through 10 response list. Your worksheet is now ready for data entry.

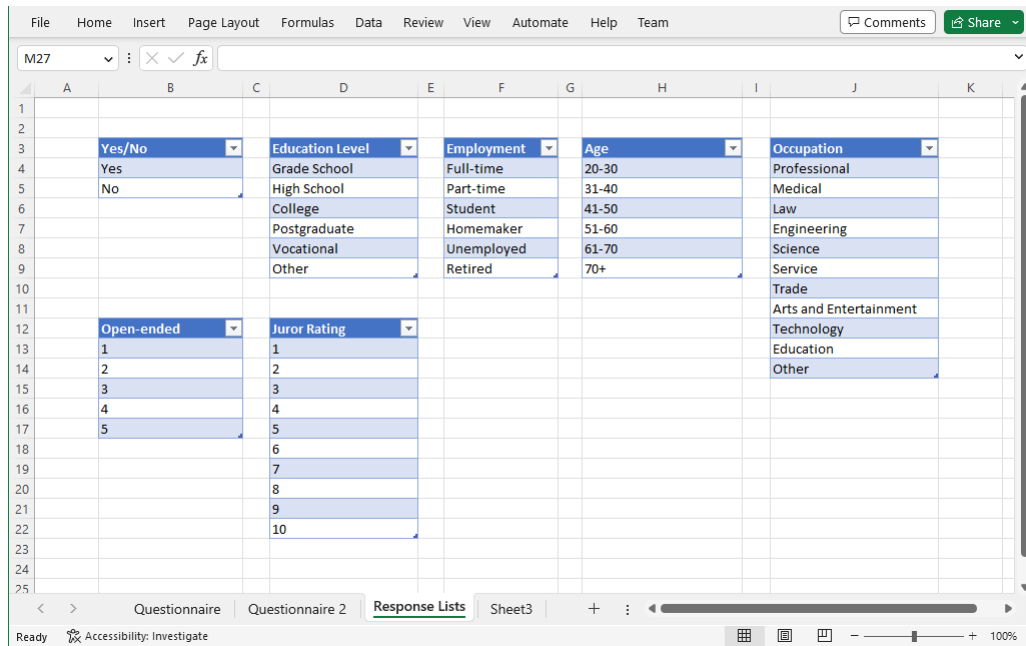


Figure 1: Worksheet with tables containing the responses to questions on the juror questionnaire

3 Input Response Data

If the court provides questionnaire data in electronic or electronically scannable paper format, it is straightforward to import the data into Excel. If only paper copies of the questionnaires are provided, then the responses will have to be entered manually. Here I will assume that data are entered manually into Excel.

Each row on the Excel Questionnaire worksheet represents the responses for a single juror. Enter the juror’s name in the name field and then moving rightward across the row, enter the juror’s responses using the previously defined dropdown lists. For open-ended questions, you will have to read the juror’s response and give it a score from 1 to 5 with more preferable responses getting higher scores. Do this for each juror questionnaire, moving to the next row for each new questionnaire. The process should go relatively quickly given proper preparation of the worksheet. Your Questionnaire worksheet should now look like the one in Figure 3.

4 Sort the Juror List

We now wish to use the worksheet to group similar jurors. This can be done using Excel’s advanced sorting algorithm. However, because we are not doing

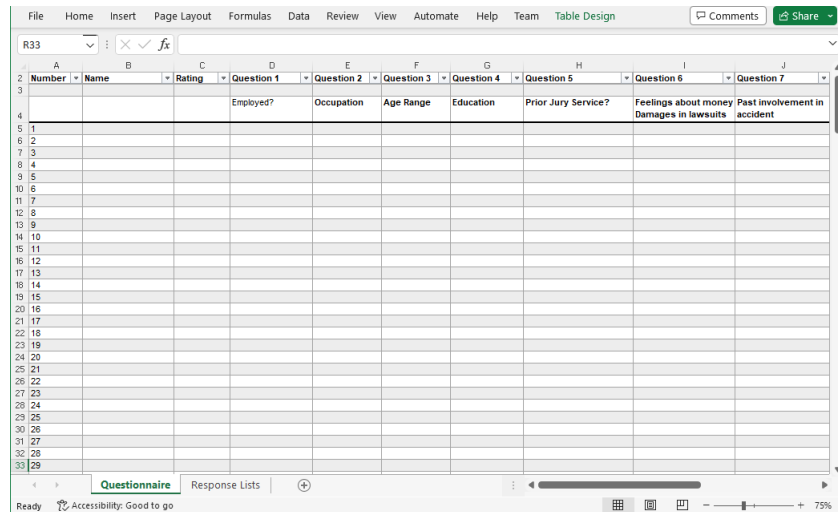


Figure 2: Worksheet prepared for questionnaire data entry

a complete cluster analysis, it is important to give some thought as to which questions are the most important for rating the favorability of the jurors. These questions will be at the top of the sort order.

Before applying any sorting in Excel, it is important to hide any descriptive header rows - we only want to sort the responses. Simply select the heading row, right click and choose **hide** from the popup menu. Now select all of the data in the table and from the **Data** menu, click the **Sort** icon. The **Sort** popup window opens. Here you can choose which columns to sort on. First select the column of the most important question in the **Sort By** field. Next click **Add Level**, and choose the next most important question. Continue adding levels as desired. For open ended questions, I usually select the sort option (e.g., Largest to Smallest) so the most preferable jurors will be near the top. When you are satisfied, click **OK** to perform the sort. Now you can unhide any header rows that were previously hidden. Your Questionnaire worksheet should look something like Figure 4 with jurors sorted according to the similarity of their answers.

5 Rate the Jurors

Assuming you selected your sorting options carefully, jurors should now be sorted by similarity with the more preferable jurors near the top and the less preferable near the bottom. It is now a straightforward exercise to go down the list and rate the jurors using the dropdown list in the Rating column. 10s should be toward the top and 1s at the bottom.

Number	Name	Rating	Question 1 Employed?	Question 2 Occupation	Question 3 Age Range	Question 4 Education	Question 5 Prior Jury Service?
49	CARTER, Amy		Yes	Other	41-50	Grade School	No
11	HERNANDEZ, James		Yes	Other	31-40	High School	No
6	GARCIA, Jennifer		No	Engineering	31-40	College	No
24	WHITE, Brian		Yes	Professional	41-50	College	No
1	SMITH, Michael		Yes	Trade	41-50	High School	No
44	BAKER, Brittany		Yes	Service	31-40	High School	No
21	LEE, William		Yes	Service	31-40	High School	Yes
31	WALKER, Adam		Yes	Service	31-40	High School	No
25	HARRIS, Nicole		Yes	Trade	41-50	Vocational	No
50	ROBERTS, Crystal		Yes	Service	41-50	Grade School	No
35	WRIGHT, Steven		Yes	Other	20-30	High School	No
5	JONES, Ashley		Yes	Education	51-60	College	No
27	CLARK, Anthony		Yes	Technology	20-30	High School	No
29	LEWIS, Eric		Yes	Service	61-70	High School	No
43	NELSON, Amber		Yes	Trade	51-60	High School	No
45	HALL, Danielle		Yes	Trade	31-40	High School	No
10	MARTINEZ, David		Yes	Trade	31-40	High School	No
17	TAYLOR, Brandon		Yes	Medical	31-40	Postgraduate	No
23	THOMPSON, Stephanie		Yes	Medical	31-40	Postgraduate	No
20	MARTIN, Sarah		Yes	Technology	20-30	Vocational	No
28	RAMIREZ, Heather		Yes	Trade	51-60	Grade School	No
2	JOHNSON, Christopher		Yes	Arts and Entertainment	20-30	Grade School	No
30	ROBINSON, Elizabeth		Yes	Law	41-50	College	No
32	YOUNG, Megan		Yes	Engineering	41-50	College	No
37	TORRES, Timothy		No	Technology	41-50	College	Yes
41	GREEN, Laura		Yes	Service	61-70	College	No

Figure 3: Worksheet with response data entered

6 Tweaks and Improvements

The sorting method described here relies heavily on the order of sorting. Different sorting orders will, in general, give different results. It is important to sort by the most important question first, the second most important question second, and so on. However, it may not be clear which questions are the most important. You may feel that two or more questions are equally important. This is why cluster analysis (to be discussed later in this series) is a superior analysis method.

If the questionnaire contains two or more questions that you feel are equally important, it may be possible to create a new response column that is a composite of the individual responses. In the example, there are two open-ended questions that may be equally important - Question 6 and Question 7. These questions can be given a weight according to their importance. Let's say, for purposes of argument, that Question 6 has a weight of 0.8 and Question 7 has a weight of 0.5 (the exact numbers are not important, only their relative values) We then create a new column in the Questionnaire worksheet titled 'Composite Q6 Q7'. In the column's cells we use an excel formula (you may have to adjust the names to match your worksheet):

$$= 0.8 *[@[Question 6]] + 0.5*[@[Question 7]]$$

Finally, we sort the data using the new composite column rather than the individual questions. Example results using this composite score are shown in Figure 5.

Number	Name	Rating	Question 6 Feelings about money Damages in lawsuits	Question 7 Feelings about punitive Damages	Question 8 Past involvement in accident	Question 4 Education	Question 3 Age Range	Question 1 Employed?	Question 2 Occupation	Question 5 Prior Juror
34	KING, Kevin	5	5	4	No	College	31-40	Yes	Education	No
4	BROWN, Matthew	5	5	4	No	Postgraduate	41-50	Yes	Medical	No
9	RODRIGUEZ, Daniel	5	5	3	Yes	College	20-30	Yes	Technology	No
7	MITCHELL, Jeffrey	5	5	3	Yes	Grade School	31-40	No	Arts and Entertainment	No
3	WILLIAMS, Jessica	5	5	3	No	College	51-60	Yes	Engineering	No
38	NGUYEN, Christina	5	5	3	No	High School	41-50	Yes	Education	No
18	MOORE, Jason	5	5	3	No	High School	31-40	Yes	Service	No
22	PEREZ, Jonathan	5	5	3	No	Postgraduate	61-70	Yes	Law	No
19	JACKSON, Justin	4	4	3	Yes	College	41-50	Yes	Education	No
39	HILL, Kyle	4	4	3	Yes	College	31-40	Yes	Other	Yes
47	CAMPBELL, Kimberly	4	4	3	Yes	College	20-30	Yes	Professional	No
7	MILLER, Joshua	4	4	3	Yes	High School	41-50	Yes	Service	No
42	ADAMS, Lauren	4	4	3	No	College	51-60	Yes	Medical	No
15	ANDERSON, Andrew	4	4	3	No	College	70+	No	Professional	No
16	THOMAS, Ryan	4	4	3	No	College	61-70	Yes	Professional	No
40	FLORES, Rachel	4	4	3	No	College	31-40	Yes	Service	No
26	SANCHEZ, Nicholas	4	4	3	No	High School	31-40	Yes	Education	No
46	RIVERA, Richard	4	4	3	No	High School	31-40	Yes	Trade	No
8	DAVIS, Amanda	4	4	3	No	Postgraduate	31-40	Yes	Medical	No
36	SCOTT, Thomas	4	4	3	No	Postgraduate	20-30	Yes	Science	No
33	ALLEN, Melissa	4	4	3	No	Vocational	51-60	Yes	Trade	No
32	YOUNG, Megan	3	3	3	No	College	41-50	Yes	Engineering	No
30	ROBINSON, Elizabeth	3	3	3	No	College	41-50	Yes	Law	No
41	GREEN, Laura	3	3	3	No	College	61-70	Yes	Service	No
17	RODRIGUEZ, Timothy	3	3	3	No	College	41-50	No	Technology	Yes

Figure 4: Sorted worksheet

7 Up Next

Part 2 of this series discusses the application of true Cluster Analysis to the evaluation of juror questionnaires. Cluster Analysis is arguably a better approach to grouping jurors than the sorting method described here because it does not rely on assumptions about the relative importance of questions. Part 3 addresses the use of artificial intelligence in questionnaire evaluation and its application to text analysis for scoring open-ended responses.

Number	Name	Rating	Composite Q6 Q7	Question 8	Question 4	Question 3	Question 1	Question 2	Question 5
34	KING, Kevin		6	No	College	31-40	Yes	Education	No
4	BROWN, Matthew		6	No	Postgraduate	41-50	Yes	Medical	No
9	RODRIGUEZ, Daniel		5.5	Yes	College	20-30	Yes	Technology	No
48	MITCHELL, Jeffrey		5.5	Yes	Grade School	31-40	No	Arts and Entert	No
3	WILLIAMS, Jessica		5.5	No	College	51-60	Yes	Engineering	No
18	MOORE, Jason		5.5	No	High School	31-40	Yes	Service	No
38	NGUYEN, Christina		5.5	No	High School	41-50	Yes	Education	No
22	PEREZ, Jonathan		5.5	No	Postgraduate	61-70	Yes	Law	No
47	CAMPBELL, Kimberly		4.7	Yes	College	20-30	Yes	Professional	No
39	HILL, Kyle		4.7	Yes	College	31-40	Yes	Other	Yes
19	JACKSON, Justin		4.7	Yes	College	41-50	Yes	Education	No
7	MILLER, Joshua		4.7	Yes	High School	41-50	Yes	Service	No
40	FLORES, Rachel		4.7	No	College	31-40	Yes	Service	No
42	ADAMS, Lauren		4.7	No	College	51-60	Yes	Medical	No
16	THOMAS, Ryan		4.7	No	College	61-70	Yes	Professional	No
15	ANDERSON, Andrew		4.7	No	College	70+	No	Professional	No
26	SANCHEZ, Nicholas		4.7	No	High School	31-40	Yes	Education	No
46	RIVERA, Richard		4.7	No	High School	31-40	Yes	Trade	No
36	SCOTT, Thomas		4.7	No	Postgraduate	20-30	Yes	Science	No
8	DAVIS, Amanda		4.7	No	Postgraduate	31-40	Yes	Medical	No
33	ALLEN, Melissa		4.7	No	Vocational	51-60	Yes	Trade	No
32	YOUNG, Megan		3.9	No	College	41-50	Yes	Engineering	No
30	ROBINSON, Elizabeth		3.9	No	College	41-50	Yes	Law	No
37	TORRES, Timothy		3.9	No	College	41-50	No	Technology	Yes
41	GREEN, Laura		3.9	No	College	61-70	Yes	Service	No
14	WILSON, Joseph		3.9	No	Grade School	51-60	No	Other	No

Figure 5: Questionnaire worksheet sorted using composite score for open-ended responses