

8 Formulas for Analyzing Data Using Spreadsheet Software

Below are 8 simple formulas that you can use within Microsoft Excel to help gain key information from your evaluation data.

1. =SUM

- Sum can only be used to add up numbers
- Adds up the numbers in a range
- You can also usually use the AutoSum button, but make sure it adds up the right numbers



2. =SUMIF()

The sumif function adds up the numbers in a range only if they meet a particular criteria.

EXAMPLE: Cells D3 to D6 are checked to see if they contain the letter 'M'

=SUM or SUMIF can be used to add together numbers and numbers based on a criteria

FOR EXAMPLE, we can add up the number of resources we used in programs this week, but we can also count based on the type of resource

| В | С | D | | | |
|-------------------------|-------|--------|--|--|--|
| | | | | | |
| Name | Score | Gender | | | |
| Bob | 102 | м | | | |
| Joe | 47 | м | | | |
| Sue | 22 | F | | | |
| Lisa | 121 | F | | | |
| | | | | | |
| =SUMIF(D3:D6,"M",C3:C6) | | | | | |

3. =MIN OR =MAX

- =MIN will give us the smallest number from a range of numbers
- =MAX will return the largest number from a range
- We can use =MIN to find:
 - The age of youngest participant
 - The lowest score
 - Which day had the lowest attendance
- We can use =MAX to find:
 - What is the oldest age
 - The highest score
 - Which day had the highest attendance

| Boek1 | | | | | |
|-------|----------|-----|--|--|--|
| | A | В | | | |
| 1 | 1 | | | | |
| 2 | 2 | | | | |
| 3 | 3 | | | | |
| 4 | 3 | | | | |
| 5 | 4 | | | | |
| 6 | 5 | | | | |
| 7 | =MIN(A1: | 46) | | | |

4. =AVERAGE

- Will return the average (arithmetic mean) of the numbers in a range
- In this example, the A1:A4 range will return an average of 2.25

| Book1 | | | | | | | |
|-------|-----------------|---|--|--|--|--|--|
| | А | В | | | | | |
| 1 | 1 | | | | | | |
| 2 | 2 | | | | | | |
| 3 | 3 | | | | | | |
| 4 | 3 | | | | | | |
| 5 | =AVERAGE(A1:A4) | | | | | | |

5. =AVERAGEIF (range, criteria, average range)

Will return the average of the numbers in a range if they meet the criteria

EXAMPLE: Cells D3 to D6 are checked to see if they contain the letter 'M'. If they do, the numbers in C3:C6 are added together

We can use this to determine:

- Average number of participants who attend a program weekly
- Average age of participants
- Average rating/score

| В | С | D | | |
|--------|-------------|-----------|--|--|
| | | | | |
| Name | Score | Gender | | |
| Bob | 102 | м | | |
| Joe | 47 | М | | |
| Sue | 22 | F | | |
| Lisa | 121 | F | | |
| | | | | |
| AVERAG | EIF(D3:D6," | F",C3:C6) | | |
| | | | | |

6. =COUNT() AND =COUNTA()

- =Count only counts numbers
- = counta counts how many cells have something in them
- This could be handy if we wanted to explore:
 - Attendance
 - Case notes
 - Check marks
 - ...or anything else that would not be possible to mathematically calculate

| 1 | Α | В | С | D |
|----|--------|------|-------|--------|
| 1 | | | | |
| 2 | | Name | Score | Gender |
| 3 | | Bob | 102 | M |
| 4 | | Joe | 47 | M |
| 5 | | Sue | 22 | F |
| 6 | | Lisa | 121 | F |
| 7 | | | | |
| 8 | Count | 0 | 4 | 0 |
| 9 | CountA | 4 | 4 | 4 |
| 10 | | | | |

7. =COUNTIF

- Countif only counts the cell "if" a criteria is met
- In this example, we are only counting cells in the A1:A4 range which match the word pizza
- This formula would give us the result 1, as there is only one mention of pizza
- Note: =COUNTIFS: counts using multiple criteria

• We could use this formula to

- Count males and females
- Program site
- Allergies
- Yes/no questions
- ...or anything else where we need to find a particular word or number

| | А | В | С | D | E | |
|---|-------|---|----------|------------|-------|--|
| 1 | 1 | | 1 | | | |
| 2 | pizza | | pizza | | | |
| 3 | 3 | | 3 | | | |
| 4 | blue | | blue | | | |
| 5 | 1 | | =COUNTIF | (C1:C4,"pi | zza") | |
| 6 | | | | | | |
| - | | | | | | |

8. =IF(logical test, true, false)

• The IF statement has three parts

- 1. The logical test
- 2. What happens if the test is true
- 3. What happens if the test is false
- We could use this to:
- Check if a criteria is met, for example, have Excel write Pass or Fail based on a grade or write Yes or No based on attendance
- Have Excel report using easy to understand language that make summaries easier to understand

| * E | \times \checkmark | <i>f</i> _x =IF(E6>15," | =IF(E6>15,"Over 15","Under 15") | | | | =IF(E6>15,"Over 15","Unde | |
|------|-----------------------|-----------------------------------|---------------------------------|------------|---------------|----------------|---------------------------|--|
| В | с | D | E | F | G | н | 1 | |
| Name | DOB | End of fiscal year | Age | Over 15? | | | | |
| Bob | 1-May-01 | 31-Mar-19 | 17 | Over 15 | | | | |
| Joe | 25-Dec-05 | 31-Mar-19 | 13 | Under 15 | | | | |
| Sue | 4-Feb-06 | 31-Mar-19 | 13 | Under 15 | | | | |
| Lisa | 17-Aug-03 | 31-Mar-19 | 15 | =IF(E6>15, | "Over 15", | "Under 15" |) | |
| | | | | [F(logical | _test, [value | _if_true], [va | lue_if_false]) | |



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