

Question types

Question types

Open-ended: respondents write in their own answers

What, if anything, do you find frustrating about your smartphone?

Closed-ended: respondents choose an answer from a predefined set of choices

[illegible]

Open-ended questions

Appropriate when

- Set of possible answers are unknown
- Too many possible answers to list everything easily
- Answers are hard to quantize in meaningful ways (*e.g.*, once a day, once a week, once a month, once a year...***what about 3 times a day, but maybe only twice a month?***)
- Asking about qualitative aspects of an experience

What, if anything, do you find frustrating about your smartphone?

Closed-ended questions

Appropriate when

- Set of possible answers are known and small
- Rating an item on a dimension or continuum (*e.g.*, satisfaction)
- Answers that are easy to quantize in meaningful ways
- If a precise answer is not required or not desirable, then allow for ranged responses

Age:	0-17	18-30	31-50	51-70	71+
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Single-choice questions

Appropriate when only one answer would apply for the respondent

What is the highest level of education you have completed?

- ☐ Less than High School
- ☐ High School
- ☐ Some College
- ☐ 2-year College Degree (Associates)
- ☐ 4-year College Degree (BA, BS)
- ☐ Master's Degree
- ☐ Doctoral Degree
- ☐ Professional Degree (MD, JD)

Example of a single-choice question

Multiple-choice questions

Appropriate when more than one answer may apply for the respondent

Question is typically accompanied by *"Select all that apply"*

Which of the following apps do you use daily on your smartphone?

Select all that apply.

- ☐ Gmail
- ☐ Maps
- ☐ Calendar
- ☐ Facebook
- ☐ Hangouts
- ☐ Drive

Example of a multiple-choice question

Ranking questions

Appropriate when respondents must prioritize choices

Rank the following smartphone manufacturers in order of your preference:
Add a number to each row, 1 being the least preferred, 5 being the most preferred.

<input type="text"/>	Apple
<input type="text"/>	HTC
<input type="text"/>	Samsung
<input type="text"/>	Motorola
<input type="text"/>	Nokia

Example of a ranking question

Rating questions

Appropriate when respondents must judge an item along a dimension

How important is it to you to make phone calls from your smartphone?

Not at all
important

☐

Slightly
important

☐

Moderately
important

☐

Very
important

☐

Extremely
important

☐

Example of a rating question, for a unipolar construct in particular

Likert questions

A Likert (*LICK-art*) scale is a very common type of rating scale used to assess a series of declarative statements (Likert items)

Rate your agreement with the following statements

"The weight of a mobile is an important factor in your decision whether to buy it"

Strongly disagree	Disagree	Undecided	Agree	Strongly agree
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5-point scale

Very strongly disagree	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Very strongly agree
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7-point scale

Even point scales

Forces the respondent to pick a side in their answer (by eliminating the middle or neutral value)

Typically a 4-point scale

Strong accept	Weak accept	Weak reject	Strong reject
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Likert Scales: Analysis

1 = strongly disagree

2 = disagree

3 = neither agree nor disagree

4 = agree

5 = strongly agree

	P1	P2	P3	P4
I enjoy going to the movie theater	3	5	5	2
I enjoy reading romance books	5	5	1	1
I enjoy watching the news on TV	4	2	1	2
I enjoy sports	2	4	5	4
I enjoy playing an instrument	3	3	1	3

Likert Scales: Analysis

- 1 = strongly disagree
- 2 = disagree
- 3 = neither agree nor disagree
- 4 = agree
- 5 = strongly agree

	P1	P2	P3	P4	
I enjoy going to the movie theater	3	5	5	2	 3.75

« Overall, participants neither agree nor disagree and $\frac{3}{4}$. »

Likert Scales: Analysis

1 = strongly disagree

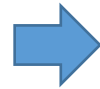
2 = disagree

3 = neutral

4 = agree

5 = strongly agree

	P1	P2	P3	P4
I enjoy reading romance books	5	5	1	1



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« Overall, participants are neutral. »

Likert Scales: Analysis

- 😞 = strongly disagree
- 😓 = disagree
- 😐 = neither agree nor disagree
- 🙂 = agree
- 😄 = strongly agree

	P1	P2	P3	P4
I enjoy going to the movie theater	😐	🙂	😄	😞
I enjoy reading romance books	🙂	🙂	😞	😞
I enjoy watching the news on TV	🙂	😞	😞	😞
I enjoy sports	😞	🙂	😄	🙂
I enjoy playing an instrument	😐	😐	😞	😐

Likert Scales: Analysis

Reporting the mean makes very little mathematical sense

Other metrics, such as the median or the mode are more appropriate.

[Ann Plast Surg.](#) 1996 Sep;37(3):265-72.

The seven deadly sins of statistical analysis.

[Kuzon WM Jr](#)¹, [Urbanek MG](#), [McCabe S](#).

Likert Scales: Analysis

Is your job professionally challenging?

