

Questionnaires

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Definition

„A set of printed or written questions with a choice of answers, devised for the purpose of a survey or statistical study“

Oxford Dictionaries

It can be combined with other research methods such as **case study, action research, design and creation**



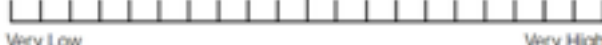



Definition

When to use questionnaires?

- Reach a **large number** of people
- Not to explore **new, difficult** or **controversial** issues
- Obtain **standardized data**
- With a **predefined** range of **answers**
- The respondents are able to answer the questions
- You have enough **money** and **time**

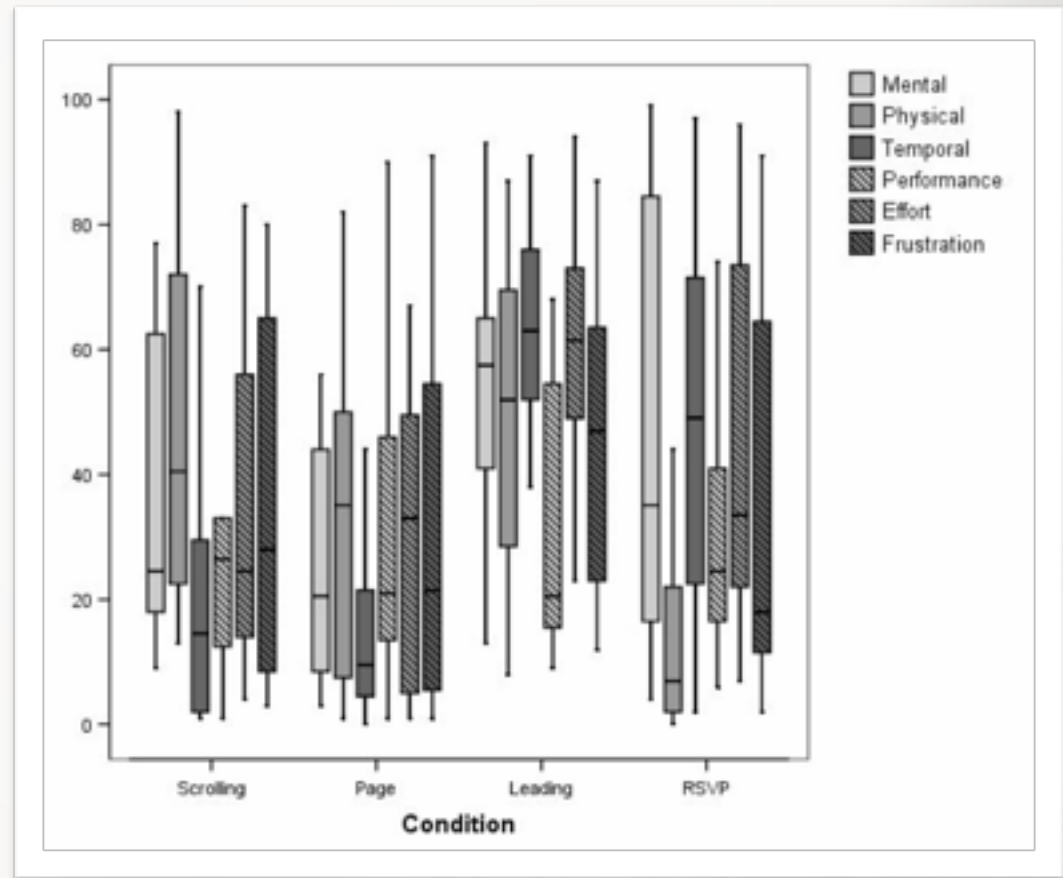
Popular Questionnaires

NASA-TLX (Task Load Index)

Name	Task	Date
Mental Demand	How mentally demanding was the task?	
Very Low		Very High
Physical Demand	How physically demanding was the task?	
Very Low		Very High
Temporal Demand	How hurried or rushed was the pace of the task?	
Very Low		Very High
Performance	How successful were you in accomplishing what you were asked to do?	
Perfect		Failure
Effort	How hard did you have to work to accomplish your level of performance?	
Very Low		Very High
Frustration	How insecure, discouraged, irritated, stressed, and annoyed were you?	
Very Low		Very High

NASA-TLX - Example

„Eye Movement Study of Reading Text on a Mobile Phone using Paging, Scrolling, Leading, and RSVP“ (Gustav Öquist, Kirstin Lundin - December 2007, Finland)



Popular Questionnaires

SUS (System Usability Scale)

	Strongly Disagree				Strongly Agree
1. I think I would like to use this website frequently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I found the website unnecessarily complex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I thought the website was easy to use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I think I would need Tech Support to be able to use this website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I found the various functions in this website were well integrated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I thought there was too much inconsistency in this website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I would imagine that most people would learn to use this website very quickly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I found the website very cumbersome to use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I felt very confident using the website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I need to learn a lot about this website before I could effectively use it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Self-administered

- More people can be asked
- No more „desired-answer“ problem
- All respondents saw the same questions



Source: <http://fluidsurveys.com/wp-content/media/feature1.png>

Researcher-administered

- Problem that questions might be asked in a different manner
- Higher response rate
- Allows to **react** to different answers



Source: <http://images.wisegeek.com/surveyor-asking-questions.jpg>

Wording

- **Brief** questions, ideally 20 words or less
- **Relevant** to the overall questionnaire
- **Unambiguous** words with multiple meanings or that might be unfamiliar with the respondents
- **Specific** questions and only one question at a time
- **Objective** wording that not tries to lead the respondents to a particular answer

Question Types

Open Questions

- Collect Opinions
- Space for answer
- Less preparation time
- Wide range of answers
- Responses are harder to decode
- Require more effort from the respondents



Question Types

Closed Questions

- Collect factual data
- Take longer to design
- More quickly analyzed
- Save respondents time
- Frustrating if you cannot find your answer
- Don't think much about your response
- Putting answers into the respondents mind

Format of Questions

Yes/No answers

Were you at the European Elections on the weekend?

Yes No No answer

Quantity questions

How many mobile devices do you have?

Answer

Only numbers may be entered in this field.

Format of Questions

Agree/disagree with a statement

Do you agree with the following statement:
Elections are important.

Agree

Disagree

Degree of agreement (Likert scale)

Please tick the ONE box that matches your view most closely:

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
The presentation about questionnaires helped me to prepare my survey.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Format of Questions

Scale questions

Please tick the box that matches your view most closely:

	Good practice	Bad practice	No answer
The use of frames in website design is:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Semantic differential

With the help of the word-pairs please enter what you consider the most appropriate description for XY.

	1	2	3	4	5	No answer
Boring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Interesting
Outdated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Contemporary
Simple	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Complex

Format of Questions

List questions

Please list your three favorite subjects.

1	<input type="text" value="SWAL"/>
2	<input type="text"/>
3	<input type="text"/>

Rank order questions

Please number each of the factors in order of importance to you.

Family	<input type="text"/>
University	<input type="text" value="1"/>
Work	<input type="text"/>

Format of Questions

Multiple choice questions

What mobile devices do you have?
Check any that apply

- Mobile Computer
- Digital Still Camera (DSC)
- Digital Video Camera (DVC)
- Mobile Phone
- Pager
- Personal Navigation Device (PND)
- Other:

Layout and Structure

Formalities & Standards

- Introduction
- Expression of thanks
- Purpose
- Address & date for returning

The screenshot shows a survey page for 'AttrakDiff'. At the top, there is a logo and a progress bar with five steps: 'Begrüßung', 'So geht's', 'Ihre Beurteilung', 'Persönliche Angaben', and 'Freigabe'. The current step is 'Ihre Beurteilung'. Below the progress bar, the title 'Beurteilung des Produkts Demo - A' is displayed. The main content area contains a welcome message: 'Herzlich willkommen zur Beurteilung des Produkts Demo - A'. It follows with a thank you note and instructions: 'Vielen Dank, dass Sie sich Zeit genommen haben. Lesen Sie die folgenden Hinweise bitte genau durch.' The next paragraph explains the purpose: 'Wir untersuchen mit Ihrer Hilfe, wie Bedienbarkeit und Aussehen des Produkts Demo - A von Benutzern wahrgenommen werden. Dadurch sollen Optimierungsmöglichkeiten aufgedeckt werden, um die Bedienung so effizient und verständlich wie möglich zu gestalten.' A final paragraph states: 'Zur Teilnahme an der Studie ist es notwendig, dass Sie sich mit Ihren Zugangsdaten anmelden. Diese haben Sie bereits per E-Mail erhalten. Sollten Sie während der Bearbeitung unterbrochen werden, haben Sie noch bis zum 31.12.2020 die Möglichkeit Ihre Beurteilung neu einzugeben. Die bisherigen Eingaben werden in diesem Fall nicht gespeichert.' At the bottom, there is a login field with a password input box and a 'weiter' button. A small note at the bottom left says: 'Hinweis: Cookies müssen aktiviert sein, damit Ihre Eingaben verarbeitet werden können.'

Layout and Structure

Clear Instructions

AttrakDiff ■ Begrüßung ■ So geht's ■ Ihre Beurteilung ■ Persönliche Angaben ■ Fragebogen

Beurteilung des Produkts Demo - A

Nachfolgend finden Sie Wortpaare, mit deren Hilfe Sie die Beurteilung vornehmen können. Sie stellen jeweils extreme Gegensätze dar, zwischen denen eine Abstufung möglich ist.

Ein Beispiel:

unsympathisch ○ ○ ○ ○ ● ○ ○ sympathisch

Diese Bewertung bedeutet, dass das Produkt eher sympathisch, aber noch verbesserungsbedürftig ist.

Denken Sie nicht lange über die Wortpaare nach, sondern geben Sie bitte die Einschätzung ab, die Ihnen spontan in den Sinn kommt. Vielleicht passen einige Wortpaare nicht so gut auf das Produkt, kreuzen Sie aber trotzdem bitte immer eine Antwort an. Denken Sie daran, dass es keine "richtigen" oder "falschen" Antworten gibt - nur Ihre persönliche Meinung zählt!

abbrechen weiter

AttrakDiff ■ Begrüßung ■ So geht's ■ Ihre Beurteilung ■ Persönliche Angaben ■ Fragebogen

Beurteilung des Produkts Demo - A

In Sie mit Hilfe der folgenden Wortpaare Ihren Eindruck zu **Demo - A** wiederzugeben. Kreuzen Sie in jeder Zelle eine Position an!

menschlich	○	○	○	○	○	○	○	○	○	technisch
isolierend	○	○	○	○	○	○	○	○	○	verbindend
angenehm	○	○	○	○	○	○	○	○	○	unangenehm
originell	○	○	○	○	○	○	○	○	○	konventionell
einfach	○	○	○	○	○	○	○	○	○	kompliziert
fachmännisch	○	○	○	○	○	○	○	○	○	leienhaft
hässlich	○	○	○	○	○	○	○	○	○	schön
praktisch	○	○	○	○	○	○	○	○	○	unpraktisch
sympathisch	○	○	○	○	○	○	○	○	○	unsympathisch
umständlich	○	○	○	○	○	○	○	○	○	direkt

abbrechen weiter

Layout and Structure

General

- logical order the questions
- filter questions to guide respondents
- questionnaire need to be attractive

The screenshot shows a web-based survey form. At the top left is the logo 'AttrakDiff'. To the right of the logo is a progress indicator with five colored squares and labels: 'Begrüßung' (grey), 'So geht's' (green), 'Ihre Beurteilung' (blue), 'Persönliche Angaben' (red), and 'Fragebö' (grey). The main title of the form is 'Beurteilung des Produkts Demo - A'. Below the title is an introductory sentence: 'Im Folgenden möchten wir Sie bitten, einige Angaben zu sich und Ihrer Erfahrung mit dem Produkt zu machen.' The form contains several input fields: 'Altergruppe*' with a dropdown menu showing '-Bitte auswählen-', 'Geschlecht*' with a dropdown menu showing '-Bitte auswählen-', 'Ausbildungsabschluss*' with a dropdown menu showing '-Bitte auswählen-', 'Beruf*' with a text input field, and 'Produktorfahrung*' with a dropdown menu showing '-Bitte auswählen-'. Below these fields is a note: 'Mit einem * gekennzeichnete Felder müssen ausgefüllt werden.' At the bottom right of the form are two buttons: 'abbrechen' and 'weiter'.

Pre-test and Pilot

Pilot questionnaire with group of people either representing **target respondents** or they **pretend so**.

- helps to find out...
 - where people have **difficulties in answering** certain questions
 - whether people find **questions ambiguous** or **vague**
 - whether people could **follow the instructions** for how to answer different types of questions
 - whether the pre-defined responses cover **all desired answers**
 - how long it takes to **complete** it (reasonable)?

Pre-test and Pilot

Evaluation of the questionnaire in a **pre-test**.

- show it to experts in research domain or in questionnaire design
- helps to refine and improve the questionnaire

To find out what people think of the questionnaire...

- ask them to think aloud
- interview
- another questionnaire

Validity and Reliability

A good researcher will consider a questionnaire's

- **content validity**
 - are the questions a well-balanced sample of the domain to be covered
- **construct validity**
 - are we measuring what we think we are measuring with the questions
- **reliability**
 - questionnaire would yield same results if given repeatedly to the same respondents
 - ➔ difficult because respondents change their views, remember answers, opposite view
 - „split half method“

The Internet and Questionnaires

- sending Questionnaire without concerning about
 - postage cost
 - delivery time
- Types of Questionnaires while using internet
 - Email (text or attached file)
 - Web form

The Internet and Questionnaires

Internet questionnaires need to be **shorter** than paper and pencil questionnaire because:

- most people are **slower at typing** and **mouse clicks** than writing
- people can become **tired** and **bored** before reaching end questionnaires
- people like to **surf from page to page** and are reluctant to spend a long time on a single page
- for people on ‚pay-as-you-go‘ connection —> the **longer questionnaire** takes to complete the **more it costs**
- the longer the questionnaire takes to complete, the greater the risk that the **network’s connection goes down** —> if work of respondent is lost, he is not willing to do it again

Email vs. Web Questionnaire

Email

- + complete **section by section** and submitted when respondent is ready
- responses shows Email address —> **reduces anonymity**
- sent as attachment —> **fear of viruses**
- has to be in a **readable format** (pdf, doc. etc)

Web

- + **drop-down menus** and **radio buttons** for pre-defined answers
- + can be completed and submitted **anonymously**
- provide the option to **save uncompleted form** and only allow submitting when respondent is ready
- implement **control mechanism** to stop answering questionnaire many times e.g. PW (—>PW reduces anonymity)
- test web form on **different platforms**

Online Tools

Examples:

- SurveyMonkey (www.surveymonkey.com)
- Zoomerang (www.zoomerang.com)
- PollDaddy (www.polldaddy.com)
- LimeSurvey (www.limesurvey.org)

What these survey tools offer:

- Flexible survey look and feel
- Skip logic
- Piping
- Randomization
- Website integration
- Data analysis

Evaluating Questionnaire-based Research

Advantages

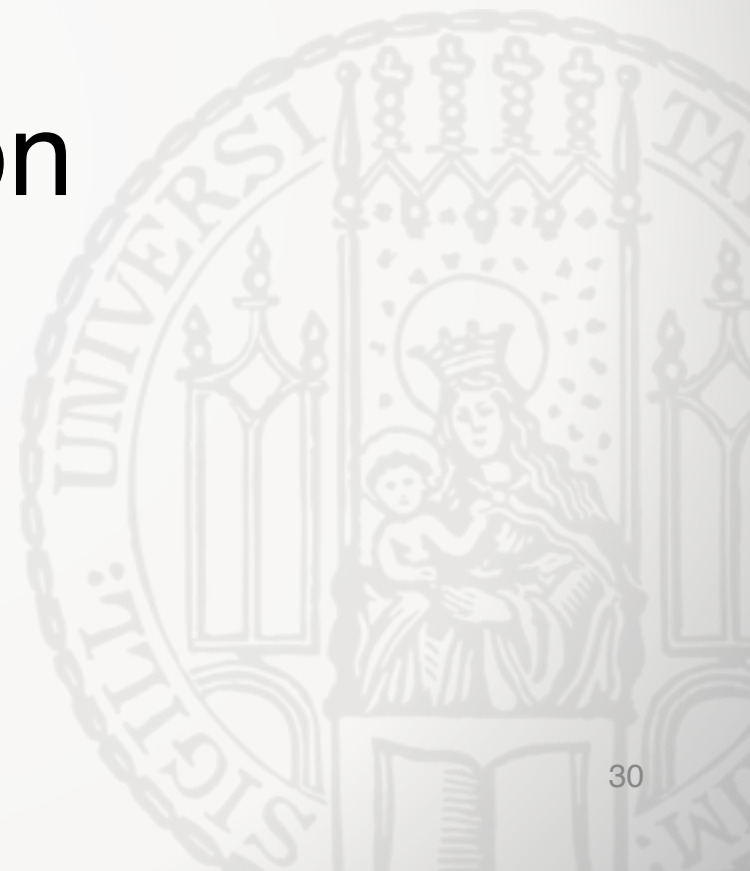
- + often **more economical** than other data generation methods
- + **large amount of data** can be created for low costs of material and time
- + use of pre-defined answers (closed questions) —> **easy for respondents to complete** questionnaire & **easy for researcher to analyze**
- + **only few geographical limits**, sent out via post, email, telephone
- + self-administration questionnaires **need no special social skills** of the researcher

Evaluating Questionnaire-based Research

Disadvantages

- pre-defined answer can **cause frustration** —> refuse to answer & can bias respondents to researcher's way of seeing things
- cannot query **disparities** between answers or check **truthfulness** of answers
- cannot correct **misunderstandings**, **probe** for more details, or offer **explanations** or **help**
- self-administrated questionnaires are unsuitable for people with **poor literacy skills** or **visual handicaps**

Discussion



Good or Bad Question?

What is your age?
Choose one of the following answers

- Younger than 10 Years
- 10 to 20 Years
- 20 to 30 Years
- 30 to 40 Years
- 40 to 50 Years
- Older than 50 Years

Failing to Give Mutually Exclusive Choices.

Correction

What is your age?

Choose one of the following answers

- Younger than 10 Years
- 10 to 20 Years
- 21 to 30 Years
- 31 to 40 Years
- 41 to 50 Years
- Older than 50 Years

Good or Bad Question?

Which of the following technologies do you feel will be most relevant in the future?

- FTIR
- DI
- DVIT
- PCT
- No answer

Too many acronyms.

Correction

Which of the following technologies do you feel will be most relevant in the future?

- Fourier transform infrared spectroscopy (FTIR)
- Diffused Illumination (DI)
- Digital Vision Touch (DVIT)
- Projected Capacitive Touch (PCT)
- No answer

Good or Bad Question?

Do you think that the new cafeteria lunch menu offers a better variety of healthy foods than the old one?
Choose one of the following answers

- Yes
- No
- No answer

The leading question drives the respondent to the conclusion that the new menu is healthier than the old.

Correction

How do you feel about the new cafeteria lunch menu compared to the old one?
Choose one of the following answers

- The new menu offers a better variety of healthy foods
- The old menu offers a better variety of healthy foods
- The selections are similar
- No answer

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Appendix



Evaluation Guide - Questionnaires

1. What was the research topic? Were questionnaires an appropriate data generation method for this topic?
2. Was the questionnaire self-administered or researcher-administered? Was this appropriate for this research topic?
3. Is a copy of the questionnaire provided? If yes, does it meet the guidelines given in this chapter for layout and structure? If no, how does that affect your confidence in the research?
4. What question types were used? Open, closed or both? Was this appropriate?
5. Are the questions and possible responses clear, unambiguous, the appropriate format and in the right order?
6. Do the researchers say whether they pre-tested and piloted the questionnaire? If not, how does that affect your confidence in the research'?
7. Do the researchers discuss content validity, construct validity and reliability of their questionnaire? If not, how does that affect your confidence in the research?
8. What limitations in their use of questionnaires do the researchers recognize ?
9. Can you identify other flaws or omissions in the researchers' reporting of their use of questionnaires?
10. Overall, how effectively do you think the questionnaire-based approach has been reported and used?