



Research methods: quantitative and qualitative, descriptive and inferential statistics

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New: Forum in Moodle

▼ Empirical Research Methods I

▶ Teilnehmer/innen

🏆 Auszeichnungen

▲ Kompetenzen

📅 Bewertungen

▶ Allgemeines

▶ Overview on the course

▶ ERM I Forum

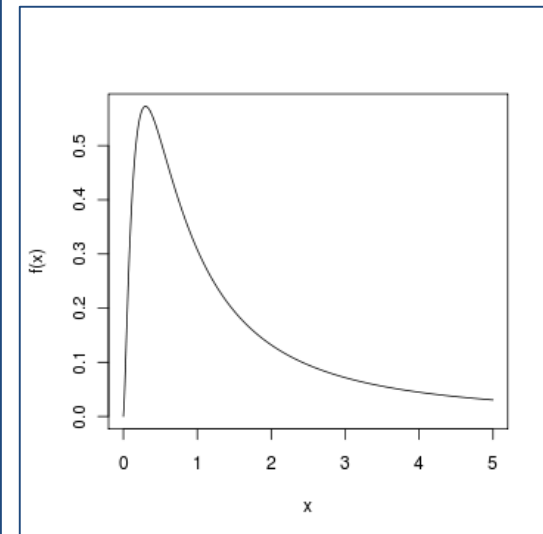
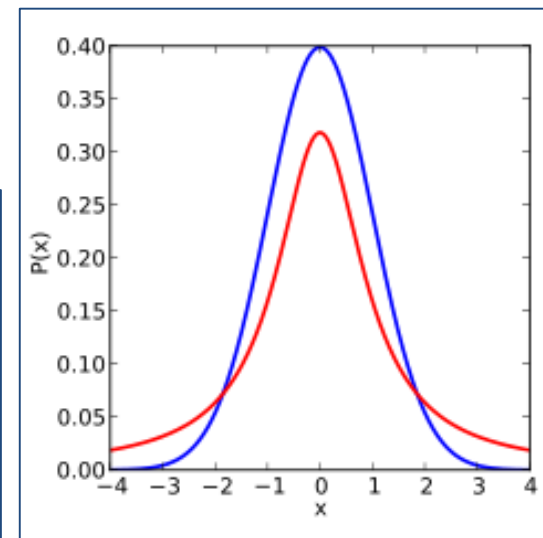
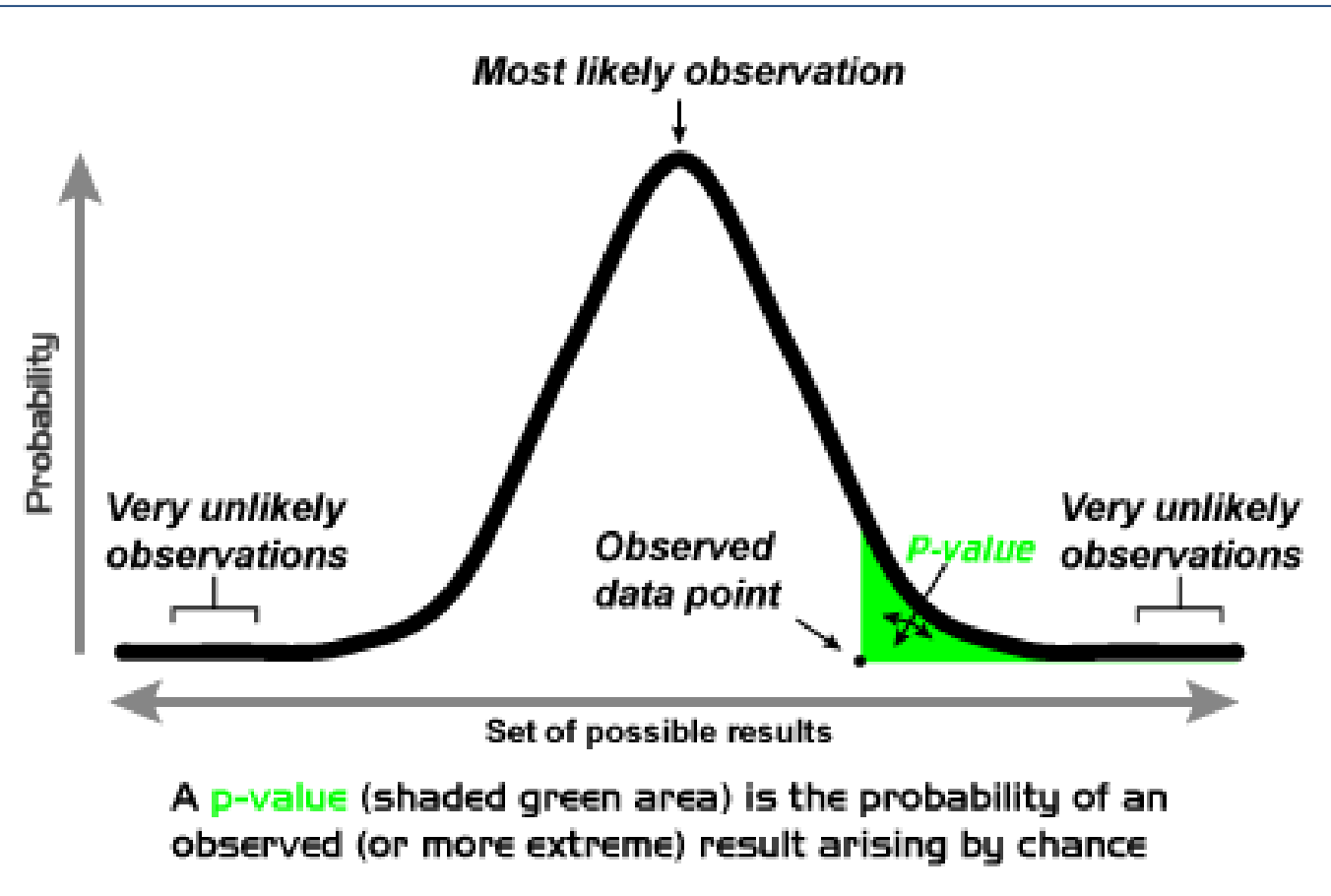
▶ 1. Introduction, basic concepts

▶ 2. Experiment design, from research question to
hy...

▶ 3. Quality criteria, structure, and content of sci...

▶ 4. Standardized questionnaires and construction
▶ of...

p-value



<https://www.thoughtco.com/definition-of-p-value-1148041>

https://en.wikipedia.org/wiki/Student%27s_t-distribution

<http://www.r-tutor.com/elementary-statistics/probability-distributions/f-distribution>

p-value

- ◇ p = result from a statistical test
- ◇ The smaller it is, the less likely are our data under the assumption of the H_0
- ◇ But: When are they “unlikely enough” (\rightarrow accepting H_1)?
 \rightarrow α -level (or, level of significance):
 - ◇ usually 5% = .05
- ◇ \rightarrow if $p \leq .05$: statistically significant result and rejection of H_0 (\rightarrow acceptance of H_1 ; not: proof)


Example


Process analysis was run to help us interpret the results with reference how learning processes were influenced. It showed a significant main effect for argumentation script on argument quality $F(1,77) = 4.7$, $p = .033$, $\eta_p^2 = .06$, and argument structure $F(1,77) = 10.46$, $p = .002$, $\eta_p^2 = .12$, meaning that conditions with the argumentation script created arguments of better quality and structure. There were no significant variance effects on argument


Exercise: Significant or not?

◇ $p = .50$ 

◇ $p = .03$ 

◇ $p = .27$ 

◇ $p = .006$ 

◇ $p = .051$ 

Significant...?

- appeared to be marginally significant ($p < 0.10$)
- approached acceptable levels of statistical significance ($p = 0.054$)
- approached but did not quite achieve significance ($p > 0.05$)
- approached but fell short of significance ($p = 0.07$)
- approached conventional levels of significance ($p < 0.10$)
- approached near significance ($p = 0.06$)
- approached our criterion of significance ($p > 0.08$)
- approached significant ($p = 0.11$)
- approached the borderline of significance ($p = 0.07$)
- approached the level of significance ($p = 0.09$)
- approached trend levels of significance ($p = 0.05$)
- approached, but did not reach, significance ($p = 0.065$)
- approaches but fails to achieve a customary level of statistical significance ($p = 0.154$)
- approaches statistical significance ($p > 0.06$)
- approaching a level of significance ($p = 0.089$)
- approaching an acceptable significance level ($p = 0.056$)
- approaching borderline significance ($p = 0.08$)
- approaching borderline statistical significance ($p = 0.07$)
- approaching but not reaching significance ($p = 0.53$)
- approaching clinical significance ($p = 0.07$)
- approaching close to significance ($p < 0.1$)
- approaching conventional significance levels ($p = 0.06$)
- approaching conventional statistical significance ($p = 0.06$)
- approaching formal significance ($p = 0.1052$)
- approaching independent prognostic significance ($p = 0.08$)
- approaching marginal levels of significance $p < 0.107$)
- approaching marginal significance ($p = 0.064$)
- approaching more closely significance ($p = 0.06$)
- approaching our preset significance level ($p = 0.076$)
- approaching prognostic significance ($p = 0.052$)
- approaching significance ($p = 0.09$)
- approaching the traditional significance level ($p = 0.06$)

- modestly significant ($p = 0.09$)
- narrowly avoided significance ($p = 0.052$)
- narrowly eluded statistical significance ($p = 0.0789$)
- narrowly escaped significance ($p = 0.08$)
- narrowly evaded statistical significance ($p > 0.05$)
- narrowly failed significance ($p = 0.054$)
- narrowly missed achieving significance ($p = 0.055$)
- narrowly missed overall significance ($p = 0.06$)
- narrowly missed significance ($p = 0.051$)
- narrowly missed standard significance levels ($p < 0.07$)
- narrowly missed the significance level ($p = 0.07$)
- narrowly missing conventional significance ($p = 0.054$)
- near limit significance ($p = 0.073$)
- near miss of statistical significance ($p > 0.1$)
- near nominal significance ($p = 0.064$)
- near significance ($p = 0.07$)
- near to statistical significance ($p = 0.056$)
- near/possible significance ($p = 0.0661$)
- near-borderline significance ($p = 0.10$)
- near-certain significance ($p = 0.07$)
- nearing significance ($p < 0.051$)
- nearly acceptable level of significance ($p = 0.06$)
- nearly approaches statistical significance ($p = 0.079$)
- nearly borderline significance ($p = 0.052$)
- nearly negatively significant ($p < 0.1$)
- nearly positively significant ($p = 0.063$)
- nearly reached a significant level ($p = 0.07$)
- nearly reaching the level of significance ($p < 0.06$)
- nearly significant ($p = 0.06$)
- nearly significant tendency ($p = 0.06$)
- nearly, but not quite significant ($p > 0.06$)

Quantitative vs. qualitative methods

Which are “better”? Let’s discuss


<https://tinyurl.com/vgcv7e7>

Your answers

padlet

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Which are better, quantitative or qualitative methods?

 Anonym 1m

If I need to do an in-depth study, for example, ethnographic study, qualitative is the best

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 Anonym 1m

it depends what type of research it is. when it comes to research would say that quantitative research is much more scientific and therefore much better than qualitative research

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 Anonym 2h

Both the methods has merits and demerits. Based on the need of the study we can select any of quantitative or qualitative method, even a mixed method combining both. If the study aims to test a hypothesis (for example) the quantitative method might be the best option to apply. However, if the purpose of study is to explore people's perception or deeper understanding on any issue the qualitative method might be the best option.

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 Anonym 1m

Both are good depending on the research design

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 Anonym s

It depends on your research question. In a research about comparison or correlations of items, it would be better to use quantitative approach. If there is a research about human perspectives, then it would be better to use quantitative approach.

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 Anonym s

it depends on the research. In some researchers that are related to emotions or belief or social aspects we need qualitative method but if we want to get numeric information the quantitative method is better. but maybe in some fields we have to use both of them

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 Anonym s

think both are very important, it depends on what we want to investigate, we must not forget that we can use both

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 Anonym s

It depends

If we need to specify something abstract like emotion or feeling, we will choose qualitative approach.

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 Anonym s

Qualitative:Advantages -It can collect data faster, and analyze this data faster too.- Disadvantages:It is difficult to analyze abstract topics such as thoughts, beliefs,

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 Anonym s

We can not say that there is one type is better than the other. At the end we need to use both (mix between both)

For example this question i am answering is a qualitative

The reseracher is giving me the space to express my feeling in my own wording with no limitation to certain question i have to choose from them

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