

Course "Empirische Bewertung in der Informatik"

Freie Universität Berlin, Institut für Informatik, Arbeitsgruppe Software Engineering

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Practice sheet 9

SoSe 2014

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Please make sure to always prepare your solutions in a way that you are able to present them to your class mates and discuss your solution process effectively.

Task 9-1 Statistical Data Analysis

1) The following table shows the absence days (AD) of 50 company employees (NE) during the past year.

Absence Days (AD)	0	3	5	9	12	18	21
Number of Employees (NE)	5	9	13	9	8	4	2

- a) Calculate the **mean average**, the **mode**, and the **median**!
- b) Calculate the **3rd quartile** and the **9th decile**!
- c) Calculate the **mean absolute deviation**, the **variance** and the **standard deviation**!
- d) Which proportion of the company's total sick-leave time is represented by the 8 most frequently ill employees?

2) What exactly is a "significant result"? What exactly is the difference between a "significant effect" and a "big effect"?

Task 9-2 Evaluate Quantitative Data Analysis

Learning aim: Practice analyzing and evaluating research that uses quantitative data analysis.

Study a piece of research that used quantitative data analysis. Answer the questions in the „Evaluation Guide“ and explain your answer. Also be prepared to give an elevator pitch introducing the piece of research you studied.

Evaluation Guide¹: Quantitative Data Analysis

1. What kinds of quantitative data were analyzed (for example: nominal, ordinal)?
2. Do the researchers use appropriate visual aids to explain their data and data analysis?
3. What means do the researchers use, if any, for describing the central tendency, distribution and relationships in the data?
4. Do the researchers justify their choice of statistical measures and tests, or assume that the reader will know what they are and why they are used?
5. Do the researchers discuss the null hypothesis?
6. How much of the report is concerned with analysis, and how much with interpretation of the results? Do you think the balance is appropriate?
7. Are the researchers' conclusions justified on the basis of the data they have presented?
8. What limitations in their quantitative data analysis do the researchers recognize?
9. Can you identify other flaws or omissions in the researchers' use of quantitative data analysis?
10. Overall, how effectively do you think quantitative data analysis has been reported and used?

¹ Source: „Researching Information Systems and Computing“ by Briony J Oates