Cover sheet with information to the invigilator

UNIVERSITY OF SKÖVDE

School of Informatics

Course:	**Research Methodology and Communication**	
Course code:	**VP761**	Credits for written examination: 4 credits
Date:	2025-08-27	08:15 - 12:30
Available teacher	Jörgen Hansson	Available on phone number (ext 8310)

Visiting the examination ☐ Yes.
☒ No

Aids and other information for invigilators

No tools or aids are allowed.

Calculator ☐ Provided by the University
☐ Student's own calculator
☒ Not allowed

Writing paper ☐ Lined
☐ Squared

If you copy the exam papers yourself, provide the number of copies

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WRITTEN EXAMINATION

Course:	**Research Methodology and Communication**
Course code:	**VP761**
Credits for written examination:	**4 credits**
Date:	2025-08-27 at 08:15 - 12:30
Examination responsible:	Richard Senington
Teachers concerned:	Jörgen Hansson
Aid at the exam/appendices:	No aids, tools, or electronic devices are allowed
Other:	Choose and answer at most(!) four out of the six questions. If you are answering more, the last question(s) overflowing the limit will not be graded. Questions are equally weighted (10 points/question). Answer each question as a short text essay composed of one or more paragraphs, supplementing your answer with diagrams if desired. Points are awarded for each reasoning/argument/part of the answer that is distinct (not a repetition of a previous part), relevant to the question and justifiable from an informed reading of the course text. Answer in Swedish or English. Write legibly!

Instructions

- ☐ Take a new sheet of paper for each teacher.
- ☒ Take a new sheet of paper when starting a new question.
- ☒ Write only on one side of the paper.
- ☒ Write your name and personal ID No. on all pages you hand in.
- ☒ Use page numbering. Order your answers in sequential/linear order!
- ☒ Don´t use a red pen.
- ☒ Mark answered questions with a cross on the cover sheet.

Failure to follow the above instructions will result in point reductions!

Grade points: 40

ECTS grading:

A: 36-40	B: 32-35	C: 28-31
D: 24-27	E: 20-23	F: 0-19

Examination results should be made public within 18 working days.

Good luck!

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Q1: Paradigms and Methodological Fit

Research methods are often selected without sufficient consideration of their underlying philosophical paradigms.

(a) Discuss the relationship between a research paradigm's epistemology and ontology and its implications for method choice.
(b) Using examples from information systems research and/or your own area of domain expertise in engineering, explain how a mismatch between paradigm and method can compromise research validity.
(c) Suggest strategies for aligning method choice with paradigm.

Q2: Critiquing a Published Study

Imagine you have been given a peer-reviewed journal article that uses a case study to evaluate an innovative application, e.g., in e-health (or an example application of your own choice). The authors claim generalizability beyond the studied organization.

(a) Outline a systematic approach for critically evaluating the research design, including case selection, data collection, and analysis.
(b) Discuss how epistemological assumptions/choices can influence the generalizability claim.

Q3: Contrasting Case Study Strategies

Case studies can be exploratory, descriptive, or explanatory, and can use single-case or multiple-case designs.

(a) Compare the strengths and weaknesses of single-case versus multiple-case approaches in explanatory research.
(b) Provide an example of when a single-case design would be methodologically stronger than a multiple-case design, and justify your choice.
(c) Explain how case selection strategy impacts validity of the case study.

Q4: Design Science and Theoretical Contribution

Design science research produces artefacts such as models, methods, and instantiations.

(a) How can a researcher empirically evaluate whether a system or artefact achieves its intended functional goals (without relying solely on users' subjective satisfaction and use of surveys and interviews)?
(b) Elaborate on the possible bias/biases that come into play if utility of the artefact is investigated using interviews and surveys.
(c) Discuss the relationship between the artefact and the study's theoretical contribution.

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Q5: Research Strategy Under Constraints

A large retail bank is developing a new **AI-powered customer service chatbot** intended to handle 60–70% of common customer queries without human intervention. The chatbot will integrate with existing customer databases, handle both text and voice queries, and is expected to be deployed across multiple branches and the bank's website.

Their research research aim is as follows. The company wants to evaluate the chatbot's usability, accuracy in providing correct answers, and potential impact on customer satisfaction before live deployment. They are particularly concerned with: (i) how easily customers can interact with the system, (ii) whether the chatbot provides accurate and relevant responses, and (iii) how the chatbot might influence perceptions of trust and brand quality

However, due to legal and reputational concerns, no experiments or testing involving actual customers may be conducted before deployment. This means that while direct user studies with live customers are not allowed, evaluation can/may still proceed using internal staff (as proxies), simulated customer interactions, or historical data.

Constraints:

- All research must be completed within six months, including design, data collection, and analysis.
- Available resources:
  - Internal staff who can act as simulated customers/proxies
  - Historical customer service chat logs and call transcripts
  - System usage metrics from existing non-AI chat systems
  - Limited budget for external usability experts or focus groups

You are asked to do the following:

(a) Design a research strategy that still produces credible findings under these constraints.
(b) Discuss trade-offs in validity and reliability given your design choices.
(c) Justify your selection of data collection and analysis methods given the restrictions.

Q6: Bias and Validity in Mixed-Methods Research

Mixed-methods research combines qualitative and quantitative components, and, thus, can be exposed to multiple forms of bias already well-known in research.

(a) Identify and define three well-established biases covered in the course literature (e.g., from Oates or lecture slides) that could appear in a mixed-methods study.
(b) For each bias, explain how it might arise in both the qualitative and the quantitative strand of a mixed-methods study.
(c) Discuss how these biases could affect internal and/or external validity and outline specific strategies for reducing their impact.