Unit 4: Case Studies, Focus Groups and Observations

Required Reading

Dawson, C. (2015) Projects in Computing and Information Systems: A Student's Guide. Harlow: Pearson.

- Chapter 2 Section 2.4.2 p 28.
- Chapter 2 Section 2.4.3 p 29-31.
- Chapter 2 Section 2.4.5 p 37-38.

Chapter 2 Section 2.4.2 p 28.
Summary
Chapter 2, Section 2.4.2 on page 28 discusses various research methods commonly used in academic studies, particularly in computing and information science. The section highlights four primary research methods: action research, experiment, case study, and survey. Action research involves solving a problem while simultaneously analyzing the process and outcomes, often in collaboration with an organization. Experiments focus on testing hypotheses through controlled conditions to establish causal relationships. Case studies offer an in-depth examination of a particular situation, often using qualitative methods such as interviews and observations. Surveys, on the other hand, collect standardized data from large populations through questionnaires or structured interviews. The section also distinguishes between cross-sectional studies, which provide a snapshot of a situation at a specific moment, and longitudinal studies, which track changes over time.
Reflection
Reflecting on this section, it provides a clear and structured overview of research methods, helping researchers choose the most appropriate approach for their studies. The emphasis on selecting the right methodology based on research goals is particularly valuable. However, while the section outlines these methods well, it could further elaborate on how to navigate challenges associated with each—such as biases in case studies or limitations in experimental research due to ethical constraints. Additionally, the discussion on triangulation in case studies is important, as it reinforces the need for multiple data sources to ensure reliability. Overall, this section serves as a strong foundation for understanding and applying research methodologies effectively.

Chapter 2 Section 2.4.3 p 29-31.
Summary
Chapter 2, Section 2.4.3 on pages 29-31 focuses on interviews as a qualitative research technique. It explains the two main types of interviews: structured and unstructured. Structured interviews involve pre-defined questions that ensure consistency, while unstructured interviews allow for open-ended responses, enabling deeper exploration of a topic. The section also provides practical guidance on conducting effective interviews, including selecting the right interviewees, preparing questions, maintaining an agenda, and

ensuring confidentiality. Additionally, it discusses challenges such as interviewer influence, ethical considerations, and strategies to build trust with interviewees. The importance of note-taking, recording methods, and handling confidential data is also emphasized.

Reflection

This section is particularly useful because it offers both theoretical and practical insights into conducting interviews, which are crucial for qualitative research. The emphasis on preparation and professionalism is significant, as poorly conducted interviews can lead to unreliable data. The discussion on confidentiality and ethical considerations adds another layer of responsibility for researchers, reinforcing the need for careful handling of sensitive information. While the section provides a strong foundation, it could further explore how to analyze and interpret interview data effectively. Nonetheless, it serves as a valuable resource for researchers who rely on interviews as a key data collection method.

Chapter 2 Section 2.4.3 p 29-31.

Summary

Chapter 2, Section 2.4.5 on pages 37-38 explores observation as a research technique, particularly in case studies and social sciences. Observation involves systematically watching, recording, and analyzing events to gain insights into behaviors or processes. The section introduces naturalistic observation, where researchers avoid influencing the environment they are studying, allowing participants to behave naturally. It also discusses key considerations such as ethical concerns, obtaining permissions, and how researchers can record observations through note-taking, audio recordings, or video. The section warns about the "Hawthorne Effect," where individuals modify their behavior when they know they are being observed, which can impact the validity of findings.

Reflection

This section highlights the advantages of observation, particularly its ability to capture real-life behaviors that might not be accurately reported through interviews or surveys. However, it also underscores the complexity of ensuring objectivity and minimizing observer bias. The mention of the Hawthorne Effect is particularly relevant, as it illustrates how research conditions can unintentionally alter participant behavior. One potential area for expansion could be a discussion on how researchers can mitigate these biases, such as through prolonged engagement or participant observation. Despite these challenges, the section provides a solid understanding of observation as a valuable research tool.

Priya, A. (2021) Case Study Methodology of Qualitative Research: Key Attributes and Navigating the Conundrums in Its Application. Sociological bulletin. 70(1): 94–110.

Summary

The article provides a comprehensive examination of case study research as a qualitative methodology. It discusses the epistemological foundations of case studies, their strengths, limitations, and their role in theory development. The article also explores different types of case studies—descriptive, explanatory, and exploratory—along with their applicability in various social science disciplines. Furthermore, the author addresses concern about validity, reliability, and generalizability, arguing that case studies can contribute to theoretical advancements when rigorously designed. Ethical considerations and researcher reflexivity are also emphasized as critical aspects of conducting case study research.

Reflection

Reflecting on the article, it presents a well-structured and detailed discussion on case study methodology, highlighting both its potential and its challenges. The nuanced discussion on epistemological orientations, particularly realism and social constructivism, provides valuable insights into how researchers approach data collection and analysis. However, while the author defends the generalizability of case study findings through analytical rather than statistical generalization, this remains a debated issue in qualitative research. The

emphasis on reflexivity and ethical considerations is commendable, as it underscores the importance of researcher awareness and integrity in qualitative inquiry. Overall, the article serves as an essential resource for researchers aiming to engage with case study methodology in a rigorous and informed manner.

Kaplan, B. & Maxwell, J. A. (n.d.) 'Qualitative Research Methods for Evaluating Computer Information Systems', in: Anderson, J. G. & Aydin, C. E. Evaluating the Organizational Impact of Healthcare Information Systems. New York: Springer New York. 30–55.

Summary
The document discusses qualitative research methods used for evaluating computer information systems, particularly in medical settings. It highlights the strengths of qualitative approaches in understanding user perspectives, social and organizational contexts, and causal processes. Unlike quantitative methods that focus on measurable outcomes, qualitative research explores underlying meanings, perceptions, and interactions within a natural setting. The chapter provides an example of evaluating a clinical laboratory information system, illustrating how qualitative methods can uncover insights that quantitative data might miss. It also outlines key research techniques such as interviews, observations, and document analysis, emphasizing their role in developing deeper understandings of technology adoption and impact.
Reflection
Reflecting on the content, the discussion underscores the importance of combining qualitative and quantitative approaches to create a comprehensive evaluation framework. It is particularly striking how qualitative research captures nuances that are often overlooked by numerical analysis alone, such as user resistance, contextual challenges, and evolving perceptions of technology. The example of laboratory technologists reacting differently to the same system highlights how job roles and subjective experiences shape the effectiveness of technological implementations. This perspective reinforces the idea that successful technology adoption requires not just technical soundness but also a deep understanding of human and organizational factors.

Wohlin, C. (2021) Case Study Research in Software Engineering—It is a Case, and it is a Study, but is it a Case Study? Information and Software Technology.

Summary
The article investigates the misuse of the term "case study" in software engineering research. The study analyzes 100 recent research articles labeled as case studies and finds that nearly half of them do not meet the essential criteria of a case study, particularly the requirement of studying a contemporary phenomenon within a real-life context. The article highlights the confusion surrounding the definition and argues for a stricter, more precise classification of research methods. Wohlin suggests an alternative definition that emphasizes empirical investigation, multiple data collection methods, and the distinction between case studies and action research. The study also calls on researchers, reviewers, and editors to ensure the correct application of research methodology labels to maintain clarity and rigor in academic discourse.
Reflection
Reflecting on the article, it raises an important issue regarding methodological precision in software engineering research. The finding that many studies mislabel themselves as case studies suggests a broader problem of methodological misunderstanding or misapplication. Wohlin's emphasis on contemporary phenomena and real-life contexts aligns with established definitions of case study research, reinforcing the need for careful adherence to methodological guidelines. The proposed refined definition is useful in providing clarity,

though enforcing it across the research community may prove challenging. Overall, the study is a valuable contribution, encouraging greater scrutiny and discipline in research methodology to enhance the credibility of case study research in software engineering.

Additional Reading

Farquhar J D. (2012) Case Study Research for Business. Sage

- Chapters 1 to 7.

Abramson, C. & Sánchez-Jankowski, M. (2020) Conducting Comparative Participant Observation. Oxford Scholarship Online

Zhang, L., Miranskyy, A., Rjaibi, W., Stager, G., Gray, M. & Peck, J. (2023) Making existing software quantum safe: A case study on IBM Db2. Information and Software Technology.

Sim., J. & Waterfield, J. (2019) Focus Group Methodology: Some Ethical Challenges. Quality and Quantity.

Haye, R., Kyer, B. & Weber, E. (2015) The Case Study Cookbook.

Devault, G. (2020) What is Market Research Focus Group?

Fuelcycle. (2019) The Three Most Comon Observation Research Methods.