

British Academy of Management 2025 Conference
1st – 5th September 2025
Kent Business School, University of Kent

Qualitative data collection through participant diaries in hard-to-access settings

Authors:

Jan Bröskamp
S4222267@glos.ac.uk

Dr. May Bratby
may.bratby@warwick.ac.uk

Abstract

Diary studies are a widely used research method, particularly when it is crucial to gain a deep understanding of context-specific experiences over time. Diaries capture activities and events that, when considered collectively, shape perceptions and attitudes towards the observed phenomenon by allowing participants to reflect deeply on their experiences within a safe space to express themselves, which would otherwise remain unnoticed.

Since sensitive topics are often challenging to access, resulting in a limited number of participants, this study advocates for the use of participant diaries to obtain rich, in-depth insights. It discusses key design considerations, such as duration, frequency, structure, format, and participant selection, highlighting that aligning these elements with participants' habitual behaviours and environments helps mitigate the risk of drop-out.

Introduction

The underlying research of this paper aims to gather in-depth insights into the reasons behind the acceptance of AI in the cybersecurity industry through multiple qualitative research methods. To collect data, the study accompanied cybersecurity professionals during their acceptance process. This paper aims to raise awareness of using participant diaries for data collection in research settings that are difficult to access.

In line with Buchanan et al. (1988), time and confidentiality were the primary obstacles that prevented researchers from obtaining participation from a large number of individuals. Sensitive topics include details that could harm participants if accidentally revealed (Lee, 1993). Because cyberattacks can pose existential risks to a company's finances and individuals' physical safety, gaining deep insights into this sensitive industry is particularly challenging. (Furnell et al., 2020, Khan et al., 2020).

Methodology

Participants are challenging to access, as cybersecurity is a delicate field with stringent confidentiality regulations. This results in a situation where the intended theoretical contribution and the research's practical feasibility are at odds. In such cases, Buchanan et al. (1988) advocated for an opportunistic approach, leveraging personal networks to facilitate participant access. Gatekeepers can be individuals, groups, or organisations that provide access to a suitable research setting without being directly involved. Following this principle, the researcher ultimately secured the participation of the organisation's cybersecurity department, where he is also employed. The already established trustworthy relationship between the researcher and organisation supports the gathering of high-quality data (Maxwell, 2012). Acting as an embedded researcher within the studied organisation facilitates access and enables a deeper exploration of the phenomenon, creating an opportunity for unique insights (Buchanan and Denyer, 2018).

Even if access to the research setting can be granted, studies conducted in difficult-to-access settings often encounter a low number of participants (Corrales, 2023). In this research, the organisation acted as a gatekeeper, providing access, but the number of participants was limited to the department's headcount. In sensitive research settings, researchers must carefully choose and adjust their methods to collect the best data, which, in this case, means collecting rich, in-depth data despite a limited number of participants. As participant diaries can gather rich, contextual data, this paper proposes their use in settings that are difficult to access. The following section presents the rationale behind the design decisions regarding the participant diaries.

Recording of the data

The literature distinguishes between unsolicited diaries, where data is gathered from pre-existing diaries, and solicited diaries, where recruited diarists generate data for a particular purpose (Hyers, 2018). The diaries in this study are meant to record experiences throughout the AI acceptance process. They are specially requested and created due to the particular data requirements and the novelty of the research topic.

Regarding the duration and frequency of data collection, academic research has yet to reach a consensus. Existing studies varied in duration from a single day to over 12 months, with measurement frequencies ranging from once per week to ten times per day (Seguin et al., 2022, Janssens et al., 2018). The challenge in determining these factors lies in balancing the need to allow participants sufficient time to experience the phenomenon against the risk of increased dropout due to excessive diary entries (Janssens et al., 2018, Hyers, 2018). Considering

previous research as recommended by Janssens et al. (2018), the most prominent theories within technology acceptance research relevant to this study are the Unified Theory of Use Acceptance (UTAUT) and the Technology Acceptance Model (TAM). The UTAUT study by Venkatesh et al. (2003) collected longitudinal data over 6 months, whereas the TAM2 study by Venkatesh and Davis (2000) identified acceptance after 3 months. Not only is a six-month diary-based data collection period expected to be too demanding for participants, but the UTAUT study also evaluates acceptance solely based on system usage, which can be misleading in professional environments. Despite the age of the theories, contemporary studies (e.g., Grandón et al., 2021, Tao et al., 2022) continue to confirm approximately three months as suitable for reaching acceptance. This study employed a three-month data collection period, as prior research indicates this timeframe is sufficient for technology adoption. On the other hand, the duration of data collection is not considered too long to lead to drop-out. A residual risk that final acceptance or resistance will not occur after the 12 weeks remains. Continuously monitoring participants' self-reported responses on acceptance levels enables an optional four-week extension if indications suggest an incomplete acceptance process. In terms of logging frequency, solicited diaries can be further classified into interval- and event-based logging. In interval-based diary designs, participants record data at predetermined or flexible intervals, whereas event-based designs require immediate documentation when specific predefined events occur (Saunders et al., 2023). In this research, participants' job routines dictate their use of AI. The logging is interval-contingent since requiring a diary entry after every AI use would significantly impair the participants' work productivity and is expected to risk the gatekeepers' support. Furthermore, the phenomenon under investigation informed the choice of frequency. Since the acceptance process unfolds over several months, daily changes in participants' perceptions were unlikely; thus, a weekly frequency was deemed appropriate. However, participants have the flexibility to access the diary at any time to record additional notes. Overall, a weekly diary entry over 12 weeks is expected to yield sufficient data while minimising the burden of the method.

Degree of structure and format

Participant diaries can be organised in a variety of structures, with the boundaries overlapping because unstructured diaries typically contain some guidelines (Hyers, 2018). Structured diaries are utilised in this study because of their efficiency due to standardisation and the ability to allow participants to concentrate on specific information (Hyers, 2018). Additional methods to the diary study can increase the quality of the diaries (Unterhitzenberger and Lawrence, 2022). In the broader study, interviews conducted before the diaries helped shape the diary structure, reducing participants' uncertainty about what to document (Crozier and Cassell, 2016). Nevertheless, participants are free to express any thoughts beyond the given concepts.

The benefits of sensory formats (e.g., audio, filming, photography) to capture cognitive systems would not be evident in this study due to the delay between experience and recording (Crozier and Cassell, 2016). Furthermore, sensory diary formats can create the impression of being observed. Participants may abruptly end the recording or include unrelated information. It is anticipated that a written diary will not overwhelm cybersecurity professionals with a certain level of cognitive ability. The appropriate dairy format can mitigate barriers and reduce dropout (Hyers, 2018). A digital diary aligns with participants' habitual use of electronic devices in their profession. Digital diaries offer advantages over paper-based ones, as a cloud-based diary can be accessed from anywhere (e.g., on-site, home office), provides redundancy to mitigate data loss risks and allows the researcher to engage with the participants to check submission status and offer support. Furthermore, they are chronologically ordered, which enhances the data analysis process (Hyers, 2018). Digital diaries also include time-setting features that automatically remind participants (Saunders et al., 2023).

Participant selection

Existing user acceptance research (e.g., Gursoy et al., 2019, Vitezić and Perić, 2021) lacks credibility due to the absence of participants' first-hand experience with the technology and industry. This study aims to address that gap by prioritising participant credibility. Therefore, this study requires a setting where cybersecurity professionals had no prior experience using AI in their jobs before the research began, minimising potential experience bias. However, AI technologies are integrated into their work as part of the data collection process. Purposeful sampling ensures that the participants accurately represent the phenomenon under investigation.

The participant count is established based on the department's size, comprising seven senior employees who consent to participate in the study. This prompts a discussion of whether seven is an appropriate number of participants. The research community has not reached a consensus on a definitive number, and this topic has been the subject of ongoing debate for several decades (Vasileiou et al., 2018). Creswell (2013) identified qualitative research, including one up to 325 individuals across phenomenological studies. Recommendations ranged from at least 5 to 150 participants (e.g., Warren, 2002, Gerson and Horowitz, 2002, Guest et al., 2006, Ando et al., 2014, Creswell, 2013). Because a pure numerical guideline was controversial, Bekele and Yohannes (2022) advocated for considering alternative criteria. In this context, the preexisting relationship between the researcher and the organisation is advantageous for securing access to the setting and maintaining a low dropout rate for this demanding method while ensuring high credibility. Therefore, this study justifies the number of participants based on credibility and accessibility.

Data analysis

Overall, the method yielded 83 diary entries, with one participant dropping out in week 12 due to health reasons. The numbers indicated that the design decisions were effective in prohibiting drop-out due to the demanding nature of the method. However, there was no participant making entries beyond the required weekly input. This might indicate that a weekly reflection is sufficient to share the critical information of experiencing the phenomenon. The data was analysed using thematic analysis, following an inductive approach to identify patterns. The diary data is coded and categorised into themes to reveal in-depth reasons for the acceptance process.

Limitations

Given the accessibility constraints, the case study focuses on a single organisation. The credibility of participants' experiences is prioritised over the generalizability of multiple cases. The generalizability of this study cannot be assessed numerically, but the results can be theoretically generalised to existing theories (Yin et al., 2018).

The diary method is not feasible for piloting because of its longitudinal characteristics and the challenges associated with participant accessibility. Nevertheless, since the main concepts had already been addressed in previous interviews, the risk of misinterpreting the structure is minimal.

This research is conducted in a real-world setting, exposing practical risks such as illness, organisational insolvency or an overly demanding method. Despite the countermeasures implemented, the residual risk of data collection failure remains.

The researcher works in the same cybersecurity department as the participants but has no authority over them. As the researcher is part of the confidential environment, no additional

non-disclosure agreement (NDA) is required, and participants are permitted to share all information.

The existing relationship creates the risk of social desirability bias. The research will be made transparent, acknowledging and reflecting the role of the researcher, ensuring traceability and rigour.

Contribution

This developmental paper advocates for participant diaries as a research method in hard-to-access environments, including those with a low number of participants, and raises awareness about their effectiveness in capturing longitudinal, firsthand data where other methods may be impractical. Further empirical research on the underlying cybersecurity study may give more evidence to support this.

Conclusion

This paper advocates for using participant diaries as a data collection method to obtain in-depth, longitudinal data from hard-to-access environments with limited participant numbers. Using gatekeepers from the researcher's personnel network facilitates the recruitment of participants. Diaries are demanding for participants, which can lead to high dropout rates. However, they also provide the opportunity to gather rich data. Barriers can be minimised by aligning the diary format, structure, data collection duration, and logging frequency with participants' habitual behaviour and environment.

References

- ANDO, H., COUSINS, R. & YOUNG, C. 2014. Achieving Saturation in Thematic Analysis: Development and Refinement of a Codebook. *Comprehensive Psychology*, 3, 03.CP.3.4.
- BEKELE, W. & YOHANNES, F. 2022. Sample Size for Interview in Qualitative Research in Social Sciences: A Guide to Novice Researchers. *Research in Educational Policy and Management*, 4, 42-50.
- BUCHANAN, D., BODDY, D. & MCCALMAN, J. 1988. Getting In, Getting On, Getting Out and Getting Back. In: BRYMAN, A. (ed.) *Doing Research in Organisations*.
- BUCHANAN, D. & DENYER, D. 2018. Research in extreme contexts.
- CORRALES, T. 2023. Ethical considerations in conducting research with hard-to-reach populations. In: AYTON, D., TSINDOS, T. & BERKOVIC, D. (eds.) *Qualitative Research – a practical guide for health and social care researchers and practitioners*.
- CRESWELL, J. W. 2013. *Qualitative inquiry and research design : choosing among five approaches*, SAGE Publications, Inc.
- CROZIER, S. E. & CASSELL, C. M. 2016. Methodological considerations in the use of audio diaries in work psychology: Adding to the qualitative toolkit. *Journal of Occupational and Organizational Psychology*, 89, 396-419.
- FURNELL, S., HEYBURN, H., WHITEHEAD, A. & SHAH, J. N. 2020. Understanding the full cost of cyber security breaches. in *Computer Fraud & Security*, 2020, 6-12.
- GERSON, K. & HOROWITZ, R. 2002. Observation and Interviewing: Options and Choices. In: MAY, T. (ed.) *Qualitative Research in Action*. London: SAGE.
- GRANDÓN, E. E., DÍAZ-PINZÓN, B., MAGAL, S. R. & ROJAS-CONTRERAS, K. 2021. Technology Acceptance Model Validation in an Educational Context: A Longitudinal Study of ERP System Use. *Journal of Information Systems Engineering and Management*, 6.
- GUEST, G., BUNCE, A. & JOHNSON, L. 2006. How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, 18, 59-82.
- GURSOY, D., CHI, O. H., LU, L. & NUNKOO, R. 2019. Consumers acceptance of artificially intelligent (AI) device use in service delivery. *International Journal of Information Management*, 49, 157-169.
- HYERS, L. L. 2018. *Diary methods*, New York, NY, United States of America, Oxford University Press.
- JANSSENS, K. A. M., BOS, E. H., ROSMALEN, J. G. M., WICHERS, M. C. & RIESE, H. 2018. A qualitative approach to guide choices for designing a diary study. *BMC Medical Research Methodology*, 18, 140.
- KHAN, S. K., SHIWAKOTI, N., STASINOPOULOS, P. & CHEN, Y. 2020. Cyber-attacks in the next-generation cars, mitigation techniques, anticipated readiness and future directions. *Accident Analysis and Prevention*, 148.
- LEE, R. M. 1993. *Doing research on sensitive topics*, Thousand Oaks, CA, US, Sage Publications, Inc.
- MAXWELL, J. A. 2012. *Qualitative Research Design: An Interactive Approach*, SAGE Publications, Inc.
- SAUNDERS, M. N. K., LEWIS, P. & THORNHILL, A. 2023. *Research methods for business students*, Harlow, England, Pearson.
- SEGUIN, M., MENDOZA, J., MALLARI, E., LASCO, G., MAEVER L AMIT, A., PALILEO-VILLANUEVA, L. M., PALAFOX, B., RENEDO, A., MCKEE, M. & BALABANOVA, D. 2022. Participant Use of Digital Diaries in Qualitative Research: A Strong Structuration Analysis. *International Journal of Qualitative Methods*, 21, 16094069221124725.
- TAO, D., LI, W., QIN, M. & CHENG, M. 2022. Understanding Students' Acceptance and Usage Behaviors of Online Learning in Mandatory Contexts: A Three-Wave Longitudinal Study during the COVID-19 Pandemic. *Sustainability*, 14, 7830.

- UNTERHITZENBERGER, C. & LAWRENCE, K. 2022. Diary method in project studies. *Project Leadership and Society*, 3, 100054.
- VASILEIOU, K., BARNETT, J., THORPE, S. & YOUNG, T. 2018. Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, 18, 148.
- VENKATESH, V. & DAVIS, F. D. 2000. A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46, 186-204.
- VENKATESH, V., MORRIS, M. G., DAVIS, G. B. & DAVIS, F. D. 2003. User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27, 425-478.
- VITEZIĆ, V. & PERIĆ, M. 2021. Artificial intelligence acceptance in services: connecting with Generation Z. *The Service Industries Journal*, 41, 926-946.
- WARREN, C. A. B. 2002. Qualitative Interviewing. In: GUBRIUM, J. F. & HOLSTEIN, J. A. (eds.) *Handbook of Interview Research: Context and Method*. Thousand Oaks: SAGE.
- YIN, R. K., CAMPBELL, D. T. & SAGE, P. 2018. *Case study research and applications : design and methods*, Thousand Oaks, California, SAGE Publications, Inc.