

Bridging Interpretation and Automation: A Bibliometric Review of AI-Assisted Qualitative Research (Extended Abstract)

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Abstract

The rapid advancement of Large Language Models (LLMs) is transforming qualitative inquiry by augmenting labor-intensive interpretive workflows. This study conducts a bibliometric analysis to examine the knowledge structure and methodological evolution of AI-assisted qualitative research. Using an LLM-assisted screening framework, we identified and analyzed 431 relevant publications from the Scopus and Web of Science databases. The findings reveal an exponential growth in publications since 2022, reflecting a methodological transition from traditional rule-based text mining toward AI-assisted and interactive qualitative analysis. Keyword network analysis shows that although ChatGPT is the most frequently utilized tool, Natural Language Processing (NLP) occupies the most structurally central position within the knowledge network, while prompt engineering functions as a key intermediary linking computational techniques with qualitative analytical practices. Methodologically, AI applications are primarily concentrated in coding- and procedure-oriented approaches, particularly thematic analysis and qualitative coding. In contrast, the integration of AI into highly interpretive traditions such as grounded theory and discourse analysis remains comparatively limited due to persistent concerns regarding contextual interpretation, sociocultural nuance, researcher reflexivity, and algorithmic bias. Overall, the findings suggest that AI is increasingly conceptualized as a collaborative co-analyst rather than an autonomous interpreter within qualitative inquiry, highlighting the growing importance of robust human-AI collaboration frameworks to ensure methodological rigor and ethical accountability.

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References

- Abdul Rahman, H.; Masri, N. A.; Husaini, A.; Shaharuddin, M. Y., and Zaim, S. N. N. 2025. Integration of Machine Learning and Artificial Intelligence Techniques for Qualitative Research: The Rise of New Research Paradigms. *International Journal of Qualitative Methods* 24. doi.org/10.1177/16094069251347545.
- Ashwin, J.; Chhabra, A., and Rao, V. 2025. Using Large Language Models for Qualitative Analysis can Introduce Serious Bias. *Sociological Methods & Research*. doi.org/10.1177/00491241251338246.
- Braun, V., and Clarke, V. 2019. Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 11(4): 589-597. doi.org/10.1080/2159676X.2019.1628806. https://doi.org/10.1080/2159676X.2019.1628806.
- Breazu, P.; Schirmer, M.; Hu, S., and Katsos, N. 2024. Large Language Models and the challenge of analyzing discriminatory discourse: human-AI synergy in researching hate speech on social media. *Journal of Multicultural Discourses* 19(3): 157-175. doi.org/10.1080/17447143.2025.2476967.
- Busetto, L.; Wick, W., and Gumbinger, C. 2020. How to use and assess qualitative research methods. *Neurol Res Pract* 2(14). doi.org/10.1186/s42466-020-00059-z. https://www.ncbi.nlm.nih.gov/pubmed/33324920.
- Churchill, A.; Pichika, S.; Xu, C., and Liu, Y. 2026. GPT models for text annotation: An empirical exploration in public policy research. *Policy Studies Journal* 54(1): e70034.
- Coyle, N., and Tickoo, R. 2007. Qualitative Research: What This Research Paradigm Has to Offer to the Understanding of Pain. *Pain Medicine* 8(3): 205-206. doi.org/10.1111/j.1526-4637.2007.00303.x.

- Crowston, K.; Allen, E. E., and Heckman, R. 2012. Using natural language processing technology for qualitative data analysis. *International Journal of Social Research Methodology* 15(6): 523-543.
- Davison, R. M.; Chughtai, H.; Nielsen, P.; Marabelli, M.; Iannacci, F.; Van Offenbeck, M.; Tarafdar, M.; Trenz, M.; Techatassanasoontorn, A. A.; Diaz Andrade, A., and Panteli, N. 2024. The ethics of using generative AI for qualitative data analysis. *Information Systems Journal* 34(5): 1433-1439. doi.org/10.1111/isj.12504.
- Friese, S.; Nguyen-Trung, K.; Powell, S., and Morgan, D. L. 2026. Beyond binary positions: Making space for critical and reflexive GenAI integration in qualitative research. *Qualitative Inquiry*: 10778004261429393.
- Gao, Q., and Feng, D. 2025. Deploying large language models for discourse studies: An exploration of automated analysis of media attitudes. *PloS one* 20(1): e0313932.
- Goyanes, M.; Lopezosa, C., and Jordá, B. 2025. Thematic analysis of interview data with ChatGPT: designing and testing a reliable research protocol for qualitative research. *Quality & Quantity* 59(6): 5491-5510. doi.org/10.1007/s11135-025-02199-3.
- Greenhalgh, T. 2026. Reflexive qualitative research and generative AI: A call to go beyond the binary. SAGE Publications Sage CA: Los Angeles, CA.
- Grimes, M.; Von Krogh, G.; Feuerriegel, S.; Rink, F., and Gruber, M. 2023. From scarcity to abundance: Scholars and scholarship in an age of generative artificial intelligence. *Academy of Management Journal* 66(6): 1617-1624.
- Hallberg, L. 2008. Some reflections on qualitative research. *International Journal of Qualitative Studies on Health and Well-being* 3(2): 66-67. doi.org/10.1080/17482620802140984.
- Hauser, A. S. 2025. The future of reviews. *EMBO Reports* 26(18): 4397-4401. doi.org/10.1038/s44319-025-00560-z.
- Jowsey, T.; Braun, V.; Clarke, V.; Lupton, D., and Fine, M. 2025. We reject the use of generative artificial intelligence for reflexive qualitative research. *Qualitative Inquiry*: 10778004251401851.
- Juric, M.; Sandic, A., and Brcic, M. 2020. AI safety: state of the field through quantitative lens. 2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO), Opatija, Croatia. doi.org/10.23919/MIPRO48935.2020.9245153.
- Krippendorff, K. 2018. *Content analysis: An introduction to its methodology*. Sage publications.
- Lim, W. M. 2025. What Is Qualitative Research? An Overview and Guidelines. *Australasian Marketing Journal* 33(2): 199-229. doi.org/10.1177/14413582241264619. https://journals.sagepub.com/doi/abs/10.1177/14413582241264619.
- Liu, Z. 2025. Interview AI-sistant: Designing for Real-Time Human-AI Collaboration in Interview Preparation and Execution. Companion Proceedings of the 30th International Conference on Intelligent User Interfaces. doi.org/10.1145/3708557.3716148.
- Morgan, D. L. 2023. Exploring the use of artificial intelligence for qualitative data analysis: The case of ChatGPT. *International journal of qualitative methods* 22(16094069231211248).
- Naeem, M.; Smith, T., and Thomas, L. 2025. Thematic Analysis and Artificial Intelligence: A Step-by-Step Process for Using ChatGPT in Thematic Analysis. *International Journal of Qualitative Methods* 24. doi.org/10.1177/16094069251333886.
- Olawade, D. B.; Omeni, D.; Gore, M. N., and Hadi, M. 2025. Enhancing qualitative research through virtual focus groups and artificial intelligence: A review. *Int J Med Inform* 203: 106004. doi.org/10.1016/j.ijmedinf.2025.106004. https://www.ncbi.nlm.nih.gov/pubmed/40482393.
- Oldham, S.; Fulcher, B.; Parkes, L.; Arnatkevic Iute, A.; Suo, C., and Fornito, A. 2019. Consistency and differences between centrality measures across distinct classes of networks. *PLoS One* 14(7): e0220061. doi.org/10.1371/journal.pone.0220061. https://www.ncbi.nlm.nih.gov/pubmed/31348798.
- Qiao, S.; Fang, X.; Wang, J.; Zhang, R.; Li, X., and Kang, Y. 2025. Generative AI for thematic analysis in a maternal health study: coding semistructured interviews using large language models. *Applied Psychology: Health and Well-Being* 17(3): e70038. doi.org/10.1111/aphw.70038. https://iaap-journals.onlinelibrary.wiley.com/doi/abs/10.1111/aphw.70038.
- Roberts, J.; Baker, M., and Andrew, J. 2024. Artificial intelligence and qualitative research: The promise and perils of large language model (LLM)'assistance'. *Critical Perspectives on Accounting* 99: 102722.
- Saldaña, J. 2021. *The coding manual for qualitative researchers*. SAGE Publications Limited.
- Walker, V., and Angst, M. 2025. Promises and pitfalls of using LLMs to identify actor stances in political discourse. *PLoS One* 20(11): e0335547.
- Whitty, M. T. 2025. How to Conduct AI-Assisted (Large Language Model-Assisted) Content Analysis in Information Science and Cyber Security Research. *Electronics* 14(20). doi.org/10.3390/electronics14204104.
- Williams, R. T. 2024. Paradigm shifts: exploring AI's influence on qualitative inquiry and analysis. *Frontiers in Research Metrics and Analytics* 9. doi.org/10.3389/frma.2024.1331589.
- Willis, A.; Fisher, A., and Lvov, I. 2015. Mapping networks of influence: tracking Twitter conversations through time and space. *Participations: Journal of Audience & Reception Studies* 12(1): 494-530. http://oro.open.ac.uk/43281/.
- Yue, Y.; Liu, D.; Lv, Y.; Hao, J., and Cui, P. 2025. A practical guide and assessment on using ChatGPT to conduct grounded theory: tutorial. *Journal of Medical Internet Research* 27: e70122.