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New Methodological Trends in Sociology: An Assessment of Recent Studies

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Abstract

Purpose: This study examines recent methodological trends in sociology, focusing on the increasing role of digitalization, computational methods, and interdisciplinary approaches. It aims to analyse how methodological shifts influence sociological research paradigms.
Method: A content analysis and text mining approach were applied to 391 articles published between 2021 and 2024 in five leading SSCI-indexed sociology journals. Using Maxqda and Julius AI, methodological trends were identified based on keyword analysis and classification of research techniques.
Findings: The analysis reveals a growing emphasis on computational sociology, big data analytics, and AI-assisted research methods. Traditional qualitative and mixed-method approaches remain significant, particularly in critical and comparative sociology. Digitalization has expanded methodological pluralism, yet concerns about algorithmic bias, data ethics, and Western-centric knowledge production persist.
Implications for Research and Practice: The study highlights the necessity of integrating computational methods into sociological education while preserving qualitative methodologies. Ethical considerations in big data research must be addressed, and sociology curricula should incorporate AI-based research techniques. Future studies should examine methodological transformations across broader disciplines and regions.
Keywords: Computational sociology, mixed methods, big data, digitalization, methodological shifts.

Sosyolojide Yeni Metodolojik Yönelimler: Güncel Çalışmalar Üzerine Bir Değerlendirme

Özet

Amaç: Bu çalışma, sosyolojideki güncel metodolojik eğilimleri inceleyerek dijitalleşme, hesaplamalı yöntemler ve disiplinler arası yaklaşımların artan rolünü ele almaktadır. Metodolojik değişimlerin sosyolojik araştırma paradigmaları üzerindeki etkisini analiz etmeyi amaçlamaktadır.
Yöntem: Çalışma, 2021-2024 yılları arasında beş önde gelen SSCI indeksli sosyoloji dergisinde yayımlanan 391 makalenin içerik analizi ve metin madenciliği teknikleriyle incelenmesine dayanmaktadır. Maxqda ve Julius AI kullanılarak, anahtar kelime analizi ve araştırma tekniklerinin sınıflandırılması yoluyla metodolojik eğilimler belirlenmiştir.
Bulgular: Analiz, hesaplamalı sosyoloji, büyük veri analitiği ve yapay zeka destekli araştırma yöntemlerinin yükselişte olduğunu göstermektedir. Geleneksel nitel ve karma yöntemler, özellikle eleştirel ve karşılaştırmalı sosyoloji alanlarında önemini korumaktadır. Dijitalleşme metodolojik çoğulculuğu genişletmiş olsa da algoritmik önyargı, veri etiği ve Batı merkezli bilgi üretimi gibi konular hala tartışmalıdır.
Araştırma ve Uygulama İçin Çıkarımlar: Çalışma, sosyoloji eğitiminde hesaplamalı yöntemlerin entegrasyonunun gerekliliğine vurgu yaparken, nitel yöntemlerin korunmasının önemini de ortaya koymaktadır. Büyük veri araştırmalarında etik kaygılar ele alınmalı ve sosyoloji müfredatına yapay zeka tabanlı araştırma teknikleri dahil edilmelidir. Gelecekteki çalışmalar, metodolojik dönüşümleri daha geniş disiplinler ve bölgeler genelinde incelemelidir.
Anahtar Kelimeler: Hesaplamalı sosyoloji, karma yöntemler, büyük veri, dijitalleşme, metodolojik dönüşüm

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Introduction

In recent years, digitalization, big data analytics, and AI-based research methods have triggered a new transformation in sociological methodology. In particular, the rise of the digital society has changed traditional data collection and analysis methods, making methodological pluralism increasingly important. In this context, our study aims to analyze current methodological trends and assess their impact on sociological research. By examining 391 articles published in five leading SSCI-indexed journals, this research seeks to explore how methodological trends in sociology have evolved, which areas they are most concentrated in, and how they might develop in the future. Sociology, by its nature, is a science that seeks to understand social realities that change continuously. Since the 19th century, as the discipline has emerged, methodological approaches have evolved through social changes and scientific developments. Initially, quantitative methods were dominant, but over time, critical theories and interpretative approaches gained importance. As a result, sociology has adopted a much broader and more multidimensional perspective.

This study aims to provide a comprehensive analysis of recent methodological transformations in sociology, focusing on the increasing integration of computational methods, big data, and artificial intelligence into research practices. The research is based on a content analysis of 391 articles published between 2021 and 2024 in five SSCI-indexed journals, utilizing text mining and keyword analysis techniques to identify dominant methodological trends. The findings indicate a growing emphasis on computational sociology, AI-assisted research, and big data analytics, alongside the continued relevance of qualitative and mixed-method approaches. While digital tools have expanded the methodological repertoire of sociology, concerns regarding algorithmic bias, ethical considerations, and the dominance of Western-centric research paradigms remain critical issues. By highlighting these evolving methodological trends, this study contributes to the ongoing discussions on the future of sociological research and underscores the need for an adaptive and ethically informed methodological framework in the digital age.

Literature Review: The Evolution of Methodological Approaches in Sociology

The evolution of methodological approaches in sociology reflects the complex interaction between theoretical advancements, social transformations, and interdisciplinary debates. Historically, sociology emerged as a discipline aimed at understanding social phenomena. However, methodological differences can be observed among its founding figures. Auguste Comte (1798-1857) sought to develop a scientific method for sociology, treating it similarly to the natural sciences and advocating for quantitative methods, even though he did not directly employ statistical analyses (Comte, 1970). Ultimately, due to his positivist approach, which he pioneered, he can be considered quantitatively inclined. Émile Durkheim (1858-1917) was one of the first to base sociology on empirical data, utilizing statistical analyses in Le Suicide to explain social phenomena (Durkheim, 1982). Since he argued that social facts are external and objective, he supported quantitative data collection methods. Karl Marx (1818-1883), on the other hand, based his methodology on historical materialism, analysing societies through historical processes and employing descriptive and historical analyses to understand economic and political structures (Smart, 2013). Therefore, his approach is closer to qualitative analysis. The pioneer of qualitative methods was Max Weber (1864-1920), the founder of interpretive sociology. Instead of using quantitative data, Weber aimed to explore individuals' subjective meanings and applied the Verstehen (interpretative understanding) method to comprehend social actions (Weber, 2017).

By the mid-20th century, with the maturation of the discipline, increasing accessibility of statistical tools, and rising emphasis on empirical rigor, there was a significant shift towards quantitative methods. This transition, which continues to characterize a major methodological divide, also includes interconnections between qualitative and quantitative approaches. For instance, the Chicago School advocated for ethnographic studies that provided rich, contextual insights into urban life. Scholars such as Robert Park and Ernest Burgess emphasized the importance of direct observation and participant engagement, laying the foundation for qualitative methodologies that remain influential today (Ünal & Binay, 2017; Rajčan & Burns, 2021). However, particularly in the post-World War II period, there was a marked shift toward quantitative methods. This transformation was facilitated by advances in statistical techniques and the influence of positivism, which promoted a scientific approach to social research (Sokolovska et al., 2011; Panayotova, 2019).

These changes are also rooted in the subject matter of sociology, which is shaped by social developments. For example, the rise of feminist sociology introduced new perspectives that challenged traditional methodologies. Feminist scholars argued for the inclusion of women's experiences and voices in sociological research, promoting the use of qualitative methods that could more effectively capture these perspectives (Cohen et al., 2011; Erola et al., 2014). This movement not only expanded the methodological tools available to sociologists but also exposed the limitations of quantitative approaches in addressing complex issues related to gender and power dynamics.

In recent years, the value of methodological pluralism in sociology has gained increasing recognition. Researchers suggest that integrating both qualitative and quantitative methods can provide a more comprehensive understanding of social phenomena (Hsiung, 2016; Fries, 2009). This trend is evident in the growing adoption of mixed-methods research. Studies employing mixed methods use qualitative insights to guide quantitative analyses, thereby enhancing the robustness of research findings (Fuhse & Mützel, 2011; Gobo, 2015). This methodological integration reflects a broader transformation within sociology, acknowledging the interconnectedness of different research paradigms. Furthermore, the emergence of big data and computational methods has further transformed sociological research methodologies. The ability to analyse large datasets enables sociologists to identify patterns and relationships that were previously difficult to discern (Raftery, 2001; Law, 2008). However, this transformation has also raised concerns regarding the potential marginalization of qualitative methods, as the emphasis on quantitative analysis may overshadow the rich contextual insights offered by qualitative research (Nock, 2004; Schwemmer & Wieczorek, 2018). The primary challenge facing contemporary sociologists is to balance these methodological approaches, ensuring that both qualitative and quantitative perspectives are adequately represented in research.

Ongoing debates on methodological approaches in sociology are also influenced by broader social changes. The rise of social media and digital technologies has altered the ways in which sociologists collect and analyse data. For example, qualitative researchers increasingly use online platforms for conducting interviews and gathering data, while quantitative researchers utilize algorithms and machine learning to analyse large-scale social phenomena (Berger, 2008; Altman, 2024). These technological advancements present both new opportunities and methodological challenges for sociologists. Additionally, the globalization of sociology has led to the diversification of methodological traditions across different cultural contexts. For instance, scholars from the Global South have introduced perspectives that challenge Western-centric methodological norms, enriching and diversifying the methodological landscape of sociology. This has allowed researchers to adopt various approaches that reflect their unique cultural and social contexts (Byrne, 2012; Payne et al., 2004). The adoption of these diverse methodologies not only enhances sociological research but also promotes a more inclusive understanding of social phenomena.

Ultimately, the methodological changes that sociology has undergone from past to present highlight its dynamic and evolving nature as a discipline that continuously adapts to new theoretical, technological, and social challenges. To address the complexities of social life, the integration of different methodological perspectives is of great importance. This methodological diversity advances the discipline and enables more comprehensive solutions to some of the most pressing social issues of our time. This transformation in methodology affects not only academic knowledge production but

also the decision-making processes of policymakers and social actors (Hou et al., 2025). For instance, a study on the role of digitalization in social sciences demonstrates that traditional theoretical analyses are increasingly being replaced by data-driven and AI-supported research methods (Hou, Zheng, Li & Li, 2025). One of the most significant advantages of this shift in research methodologies is the proliferation of multidimensional and interdisciplinary approaches. For example, a study by Liu, Siqin, and Jiang (2025) highlights the use of both qualitative and quantitative methods in analysing agricultural transformation processes, leading to a more holistic social analysis. Similarly, Beigi Nasrabadi, Farahi, and Khorakian (2025) combined traditional sociological methods with modern data analysis tools in their research on female leadership, offering a more comprehensive examination. These studies illustrate that innovations in research methodologies not only contribute to theoretical advancements but also enhance our understanding of social structures.

Furthermore, ethical considerations in sociological research are gaining increasing importance. From studies involving prisoners to research on children, there is a growing emphasis on strengthening ethical standards (Peel, Workman & Reis, 2025). Particularly in research involving vulnerable groups, ethical guidelines should be applied not only within methodological frameworks but also in ways that protect the rights of participants (Peel et al., 2025). Similarly, Stapf and Heesen (2025) discuss how ethical research methodologies should be developed for studies involving children and propose the establishment of new ethical guidelines (Stapf & Heesen, 2025). In this context, methodological change is reshaping not only research techniques but also the standards of research ethics.

Changes in traditional sociological methods also influence how individuals and groups are analysed within sociological contexts. For example, a study by Menon (2025) emphasizes that methods used in research on aging and social care have become more participatory and inclusive compared to the past (Menon, 2025). Such studies demonstrate that new sociological research methods facilitate a deeper understanding of social dynamics.

The transformation of sociological research methods contributes to scientific validity by fostering interdisciplinary approaches and enabling a more comprehensive analysis of social phenomena. Today, alongside traditional qualitative methods, the integration of data science, artificial intelligence, and big data analysis into research allows sociology to analyse society from a broader perspective (Rosnon, 2025). Research ethics, interdisciplinary methods, and technological innovations are among the key elements that make sociological analyses more valid, reliable, and effective. For these reasons, examining recent methodological changes in sociology has become increasingly significant.

Methodology

This study examines recent methodological trends in sociology by analysing academic articles published in the last three years using content analysis and text mining methods. The primary aim is to reveal the transformation of methodological approaches and, in particular, to understand the impact of digitalization on methodology. To achieve this, articles published in five leading SSCI-indexed journals indexed by Web of Science (WOS) were analysed. The selected journals include Sociological Methodology, Sociological Methods & Research, Social Science Research, Quality & Quantity, and Annual Review of Sociology. These journals are among the key sources that shape contemporary theoretical debates in sociological methodology, feature methodological innovations, and reflect the development of techniques used in sociological research.

For sample selection, studies published between 2021 and 2024 that directly contribute to methodological discussions were prioritized. A total of 391 articles from the five journals were analysed. The article selection process involved downloading all open-access studies published between 2022 and 2024 via WOS. The study employs a combination of content analysis and text mining techniques. As part of the content analysis, the reviewed articles were coded and categorized based on keywords and methodological approaches. The analysis process was conducted using Maxqda, while visualizations were generated with the help of the Julius artificial intelligence tool.

The coding process facilitated the systematic grouping of methodological approaches and was carried out to determine the predominant methodological orientations in the analysed articles. During

this process, the prevalence of quantitative, qualitative, and mixed methods was identified, and changes in data collection techniques were examined. The text mining approach complemented this analysis through keyword analysis, word frequency examinations, and conceptual mapping techniques. This enabled the identification of the most frequently used methodological concepts in the articles and the relationships between specific methodological approaches and research fields.

One of the methodological limitations of the study is that it only examines the past three years. Additionally, limiting the analysis to five journals excludes methodological transformations occurring in other sociology journals. Moreover, the selected articles are exclusively open-access publications. However, given that the analysed journals are among the leading publications in the field of methodology, the study is considered to have a strong capacity to reflect contemporary methodological transformations in sociology.

Findings

The selected journals and the number of articles included in the study are presented in the table below, followed by a separate analysis of each journal.

Table 1. Selected Journals and Number of Open Access Articles (2022-2024)

Journal	Number of Open Access Articles (2022-2024)
Sociological Methodology	21
Sociological Methods & Research	58
Social Science Research	128
British Journal of Sociology	135
Annual Review of Sociology	49

Sociological Methodology

Figure 1. The 20 Most Frequently Occurring Keywords

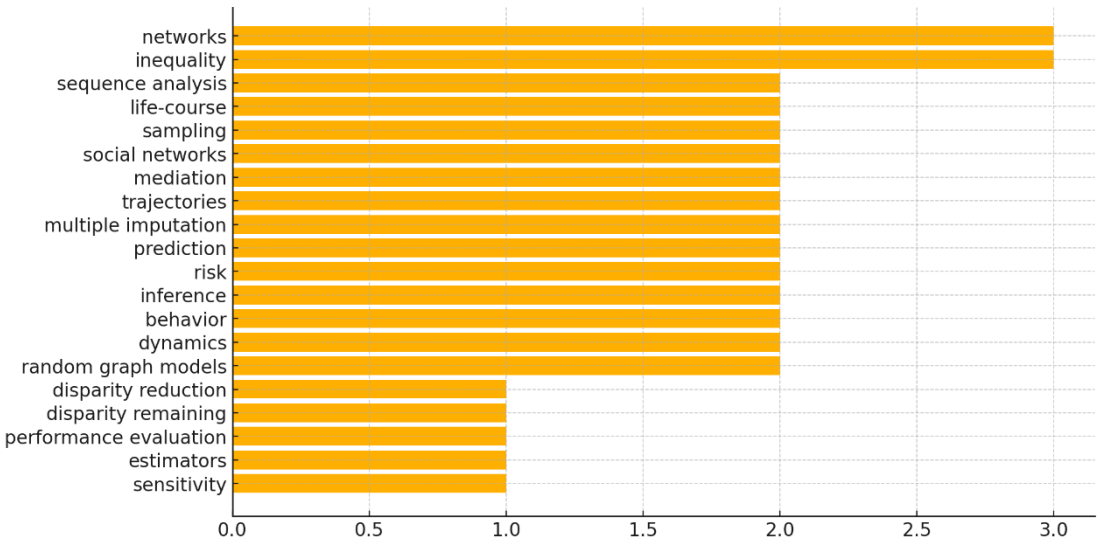
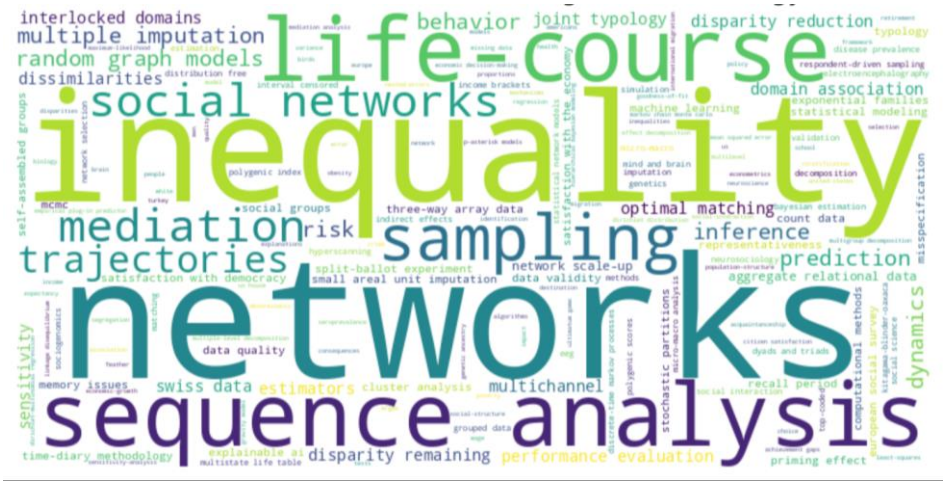


Figure 2. Keyword Cloud



According to the keyword analysis of articles published in Sociological Methodology, key topics that have emerged in sociological methodology over the past three years include social network analysis, sampling methods, estimation models, and sequential process analysis. Notably, the keywords "Networks," "Social Networks," and "Sequence Analysis" are among the most frequently used, indicating an increasing emphasis on data-driven and computational methods in recent years. Additionally, the prominence of keywords such as "Life-Course" and "Trajectories" suggests the growing application of methodologies that analize individuals' life processes. The frequent use of statistical methods such as "Mediation" and "Multiple Imputation" further highlights the widespread adoption of advanced quantitative techniques in sociology. In conclusion, studies published in Sociological Methodology predominantly feature methodological approaches related to computational social sciences, social network analysis, sampling techniques, and estimation models. This trend reflects the increasing integration of digitalization and big data analytics into sociological research methodologies.

Sociological Methods & Research

Figure 3. The 20 Most Frequently Occurring Keywords

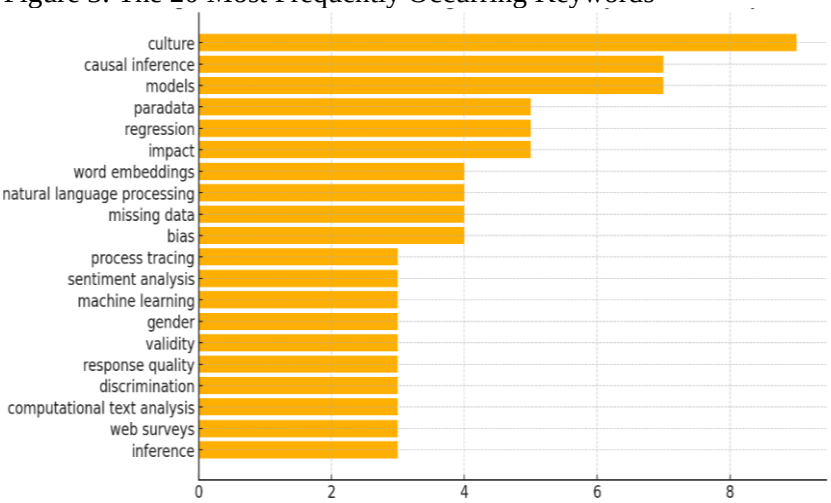
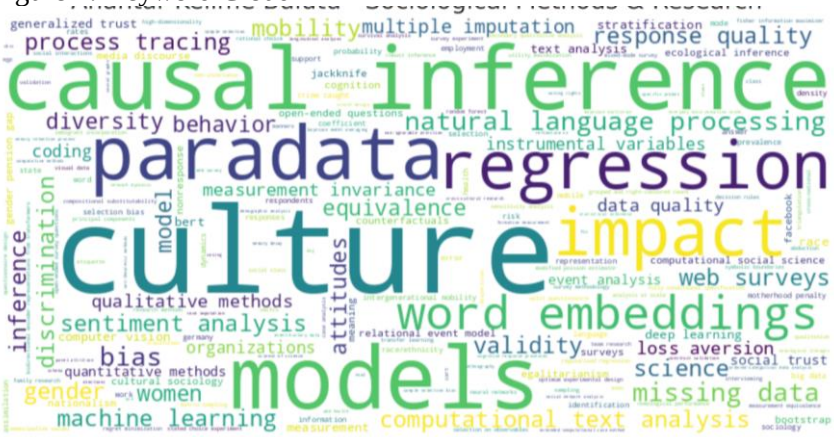


Figure 4. Keyword Cloud



The keyword analysis of articles published in *Sociological Methods & Research* over the past three years indicates the increasing prevalence of advanced statistical methods and AI-assisted analyses in sociological methodology. The most frequently occurring keywords include "Bayesian Inference," "Machine Learning," and "Causal Inference," highlighting a growing emphasis on data-driven and computational techniques in sociology. The widespread use of data collection and analysis techniques such as "Survey Experiments" and "Text Analysis" further illustrates how traditional sociological methods have evolved with digitalization. Additionally, the frequent application of advanced quantitative methods such as "Regression Discontinuity" and "Latent Variable Models" suggests the adoption of increasingly sophisticated statistical tools in sociological research. In conclusion, studies published in *Sociological Methods & Research* prominently feature Bayesian statistics, AI-based analyses, causal modeling, and survey experiments. This trend underscores the growing computational and data-driven orientation of methodological approaches in sociology

Social Science Research

Figure 5. The 20 Most Frequently Occurring Keywords

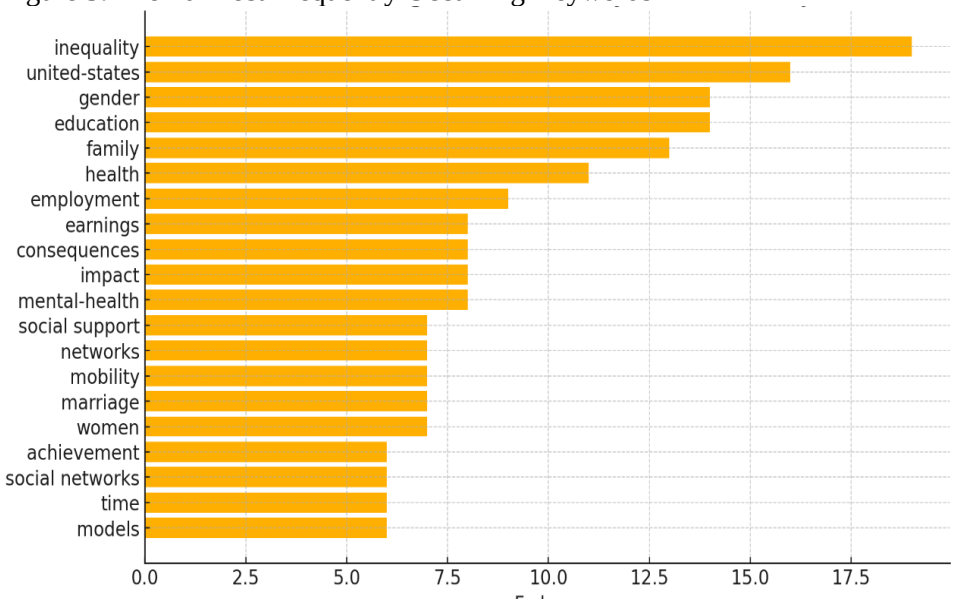
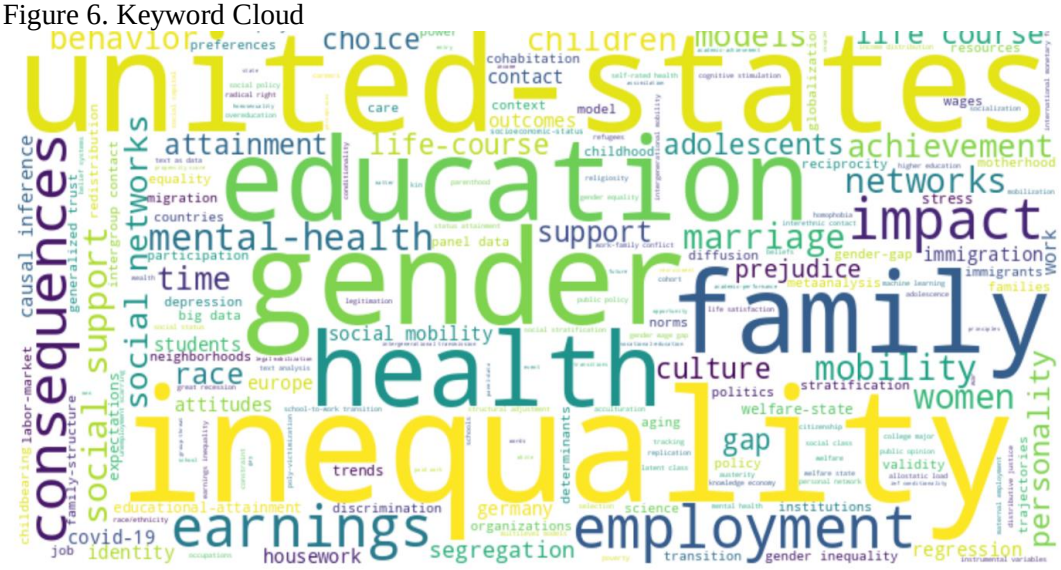


Figure 6. Keyword Cloud



The keyword analysis of articles published in *Social Science Research* over the past three years indicates the increasing prevalence of panel data analyses, longitudinal studies, and causal inference methods in sociological methodology. Among the most frequently used methodological keywords are "Panel Data," "Longitudinal Analysis," and "Causal Inference," reflecting a growing interest in methods that examine time series and individual processes in sociology. The widespread use of data collection strategies such as "Survey Research" and "Experimental Methods" demonstrates that traditional survey-based data collection approaches remain strong in sociological research. Moreover, the frequent application of advanced statistical analysis methods such as "Structural Equation Modeling" and "Generalized Linear Models" suggests an increasing methodological depth in sociological studies. Additionally, the prominence of "Mixed Methods" approaches indicates a growing tendency among researchers to integrate both quantitative and qualitative methods. This trend highlights the rising methodological diversity in sociological research and the increasing use of multiple approaches to conduct more comprehensive analyses. In conclusion, articles published in *Social Science Research* prominently feature panel data analyses, experimental methods, mixed-method approaches, and causal inference techniques. This trend underscores sociology's increasing reliance on statistical modeling and experimental research techniques.

British Journal of Sociology

Figure 7. The 20 Most Frequently Occurring Keywords

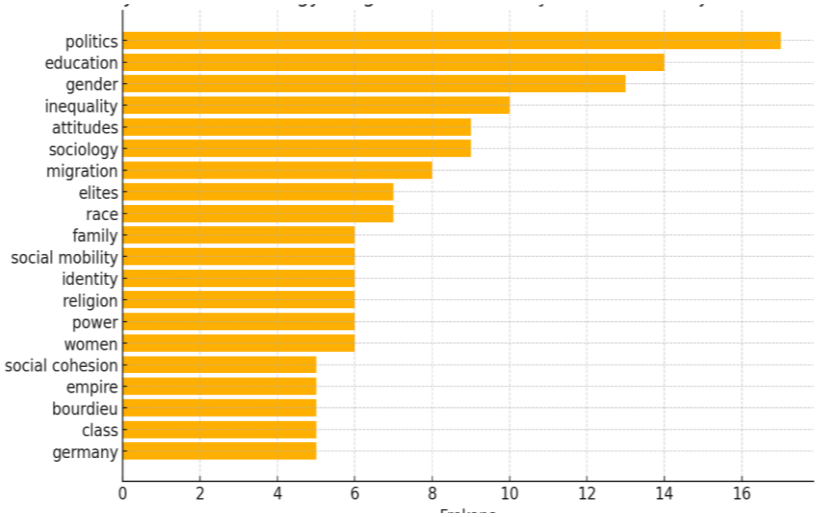
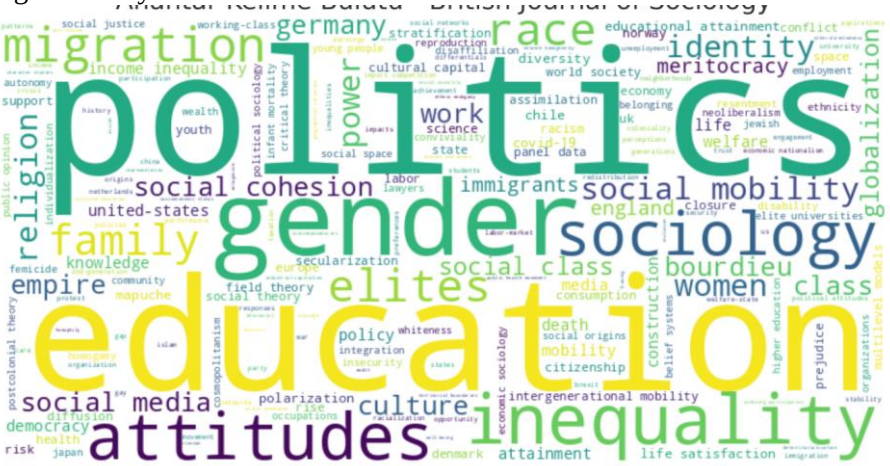


Figure 8. Keyword Cloud



The keyword analysis of articles published in the British Journal of Sociology indicates the prominence of qualitative research methods and critical approaches. Among the most frequently used methodological keywords are "Ethnography," "Discourse Analysis," and "Social Theory," highlighting the continued strong presence of traditional qualitative research methods in sociological methodology. The widespread use of concepts such as "Critical Discourse Analysis" and "Intersectionality" suggests a growing emphasis on critical theories and social justice perspectives in sociological research. Additionally, the prominence of keywords such as "Comparative Sociology" and "Social Movements" indicates that methodological approaches increasingly focus on comparative analyses of different societies and social transformations. A noteworthy finding is that while qualitative research methods dominate, data-driven approaches such as "Big Data" also feature prominently. This suggests that traditional qualitative methods are beginning to merge with new techniques such as digitalization and big data analysis. There appears to be a growing interest in studies exploring how ethnographic research is applied in digital platforms. In conclusion, articles published in the British Journal of Sociology prominently feature qualitative research methods, discourse analysis, critical theory, and comparative sociology as key methodological approaches. At the same time, new debates are emerging on how traditional qualitative approaches are being integrated with digitalization and big data analysis.

Annual Review of Sociology

Figure 9. The 20 Most Frequently Occurring Keywords

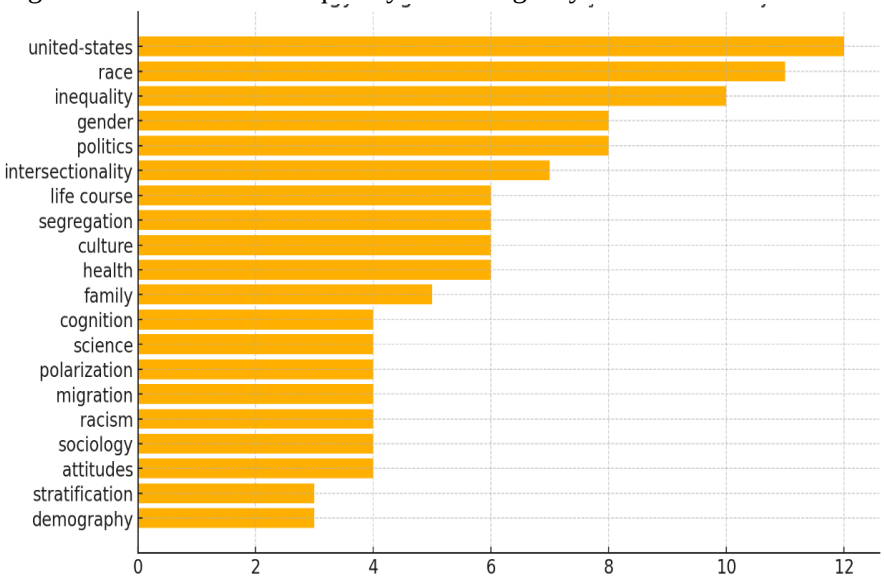
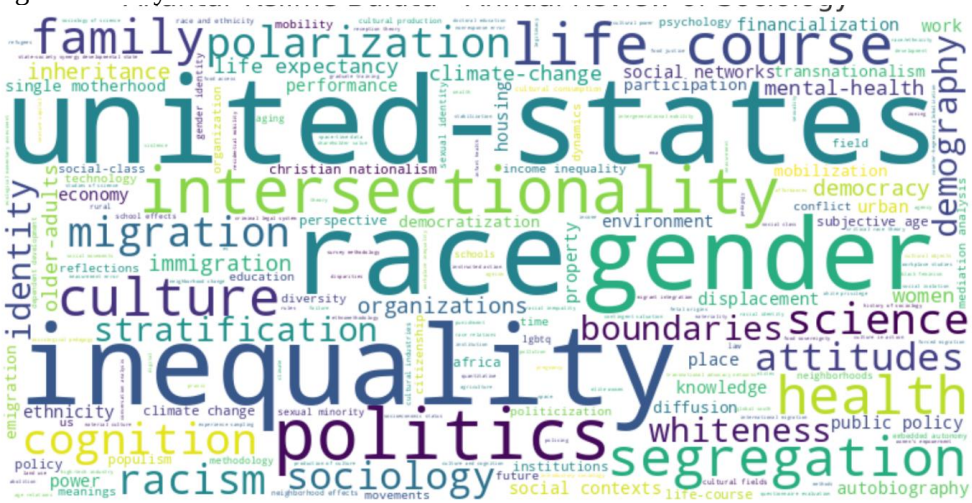
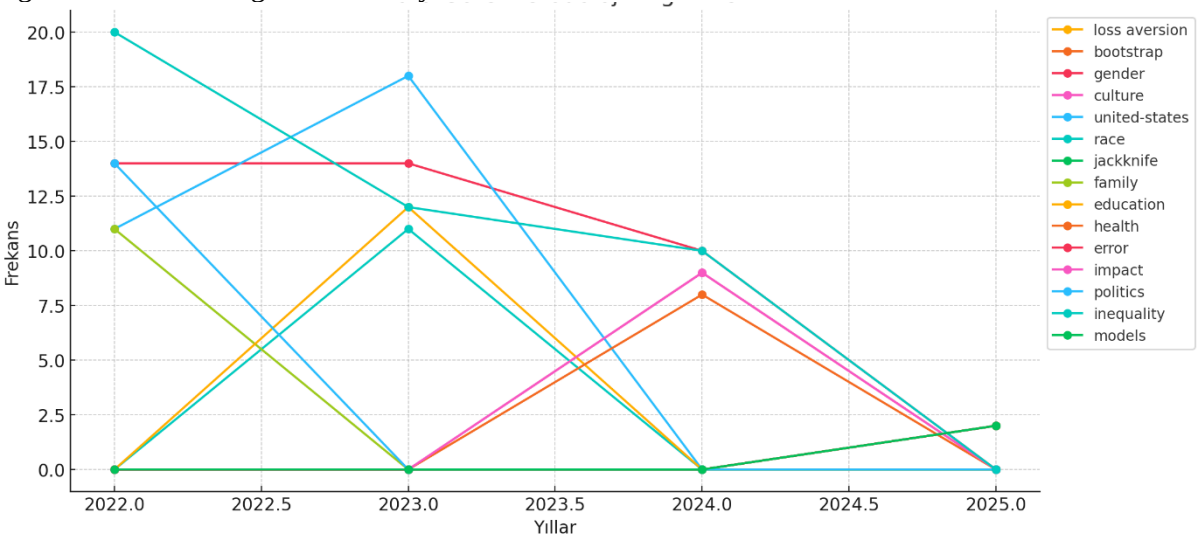


Figure 10. Keyword Cloud



Articles published in the *Annual Review of Sociology* illustrate how sociological methodologies are integrated with theoretical frameworks. The frequent occurrence of concepts such as "Social Inequality" and "Institutional Theory" suggests that methodological approaches are closely aligned with broader sociological theories. Notably, the prominence of "Comparative Sociology," "Qualitative Methods," and "Mixed Methods" indicates a growing trend toward methodological diversity. Additionally, digital research techniques such as "Computational Sociology" and "Big Data" analysis are increasingly being utilized. In conclusion, articles published in the *Annual Review of Sociology* reflect a methodological orientation characterized by the convergence of classical sociological theories and emerging methodological approaches, demonstrating a high level of theoretical depth.

Figure 11. Methodological Trends by Year



This graph, which analyses the temporal changes in methodological approaches used in sociology, illustrates the increasing adoption of digitalization and new data analysis techniques.

Discussions

A review of all articles in terms of topics, methods, and keywords reveals the following general findings:

The Rise of Computational Sociology and Big Data Utilization: A significant increase has been observed in digital research methods such as Machine Learning, Computational Sociology, and Big Data. This indicates that sociology is becoming increasingly data-driven, with a growing interest in statistical modelling. This methodological trend is particularly prominent in Sociological Methods & Research and Social Science Research. More researchers are utilizing digital datasets, machine learning algorithms, and network analysis techniques to examine social phenomena.

The Growing Importance of Social Network Analysis and Causal Inference: Social Network Analysis and Causal Inference methods have become increasingly prevalent over the past three years. Their prominence is particularly evident in the analysis of social media platforms, digital communities, and mathematical modelling of social relationships. This trend underscores the growing significance of new techniques used to understand complex social interactions.

The Stable Position of Qualitative Research Methods: Qualitative research methods such as Ethnography, Discourse Analysis, and Critical Discourse Analysis continue to be widely used. These methodologies are particularly dominant in British Journal of Sociology and Annual Review of Sociology, demonstrating that qualitative research traditions remain fundamental tools for sociological analysis.

The Expansion of Mixed Methods Approaches: The integration of quantitative and qualitative methods, known as Mixed Methods, has gained increasing prominence in recent years. This trend is particularly evident in Social Science Research and Annual Review of Sociology. Researchers are increasingly combining qualitative and quantitative data to develop a broader methodological framework for understanding social phenomena more comprehensively.

Considering these findings, the impact of methodological transformations on sociological paradigms can be examined. As emphasized in the literature, methodological orientations in sociology have historically been shaped by specific epistemological approaches. Paradigms such as Positivism, Critical Theory, and Interpretive Sociology approach methodological transformations differently

within the context of digitalization. The increasing use of Big Data, Machine Learning, and Computational Sociology suggests a resurgence of positivist epistemology through digitalization. The pursuit of objective, measurable, and replicable results reinforces the adoption of these methods. Data mining, automated text analysis, and network analysis enable researchers to leverage large-scale datasets for understanding social phenomena. However, this also raises critical questions about the role of technological tools in social control, surveillance, and power relations. The concept of Data Colonialism, emerging alongside digitalization, highlights how data production operates in favour of specific groups (Couldry & Mejias, 2019). Algorithmic biases may further reinforce social inequalities (Noble, 2018), making it essential to critically examine the impact of these methodological shifts.

On the other hand, qualitative approaches remain crucial in analysing how social relationships gain meaning in digital platforms and how individuals' social interactions evolve. For instance, Digital Ethnography is increasingly used to explore meaning construction in online communities (Hine, 2000). Similarly, the concept of Network Society, introduced by Manuel Castells (1996), highlights that sociological analyses are no longer solely conducted through individuals but also through nodes and ties. Social media analyses contribute to understanding social dynamics within the individual-network relationship. Thus, digitalization not only expands sociology's theoretical and methodological scope but also reshapes epistemological debates within the discipline. Computational Sociology and Big Data methods introduce new dimensions to ongoing methodological discussions regarding how individuals and social structures should be analysed.

One of these dimensions is ethics. While big data analytics provides new research opportunities, it also raises ethical concerns regarding data security, privacy, consent, and algorithmic neutrality. Many big data studies rely on social media, publicly available datasets, or user interactions. However, anonymizing such data is not always sufficient. For instance, individual identities can sometimes be inferred from seemingly anonymized datasets (Barocas & Nissenbaum, 2014). Researchers face ethical dilemmas over whether publicly available online data can be used without direct consent from participants. The classification of social media platforms as "public spaces" remains a contested issue (Ess, 2020). Digital ethnographic research may involve data collection without explicit user awareness, raising concerns about privacy violations and ethical breaches. Although social media data may be publicly accessible, researchers must use it within an ethical framework, especially when studying vulnerable groups such as refugees, LGBTQ+ individuals, and marginalized communities (Markham & Buchanan, 2012).

Beyond ethical concerns, digitalization has also contributed to global inequalities in knowledge production. Scholars from diverse geographical backgrounds argue that Western-centric data policies dominate research, limiting the representation of alternative perspectives (Couldry & Mejias, 2019). Moreover, these inequalities are reinforced by algorithms. Several studies have demonstrated that algorithms are not neutral but rather embed and perpetuate societal biases. For example, recruitment algorithms have been found to exhibit gender and racial biases (O'Neil, 2016). Similarly, biases present in datasets influence big data analyses; if certain groups are underrepresented in data collection, research findings may reproduce social inequalities (Eubanks, 2018).

Furthermore, the growing adoption of AI-assisted methodologies in social sciences underscores the need for updates in sociological methodology education. In recent years, the widespread adoption of digital methods in sociological research has triggered not only technical innovation but also deeper ethical and epistemological debates. Core concepts such as algorithmic bias, data colonialism, and data justice have become central to contemporary methodological discussions. Taylor (2017) introduced the concept of data justice to emphasize the need for globally equitable data practices, especially in contexts were algorithmic governance shapes everyday life. Scholars like Eubanks (2018) and Noble (2018) have shown how algorithms can reinforce existing social inequalities, particularly through opaque and discriminatory decision-making systems. These concerns underscore that AI-based tools in sociology are not neutral instruments, but actors embedded in power relations. Furthermore, Zajko

(2022) argues that sociologists must engage critically with artificial intelligence by treating it as both a methodological opportunity and a political-ethical challenge. Taken together, these perspectives suggest that the digital transformation of sociological methodology is not merely a matter of adopting new techniques but part of a broader epistemological and normative reconfiguration of how we produce and evaluate knowledge in the digital age. And also, a comparative bibliometric analysis by Çelik (2024) examining Istanbul University Journal of Sociology and The American Sociological Review reveals significant methodological and topical differences. The study found that quantitative methods have become increasingly dominant in American sociology, particularly in survey-based studies and statistical modelling. Meanwhile, Turkish sociology literature has maintained a stronger emphasis on theoretical and literature-based approaches, though the use of quantitative methods is also increasing in Turkey. As a result, it has been suggested that Turkish sociology curricula should incorporate AI-driven analyses, machine learning, computational sociology, and big data methodologies, emphasizing the importance of teaching AI-based analysis techniques. One key conclusion of this study is the necessity of closely monitoring methodological transformations occurring in Western academia.

Another significant factor shaping methodological changes is the functional utility of research outcomes. Institutional pressures and funding structures that prioritize measurable outputs significantly influence methodological preferences. Governments and funding agencies often favour quantitative approaches, which may lead researchers to adapt their methodologies accordingly (Williams et al., 2017). As a result, sociology curricula are increasingly incorporating quantitative methods, with educators recognizing the necessity of equipping students with basic statistical skills for contemporary sociological analysis (Nousak et al., 2024; Deckard, 2017).

Beyond the ethical concerns, privacy issues, and data consent, a broader debate emerges: the increasing dominance of quantitative methodologies may marginalize qualitative approaches, which many scholars consider indispensable for understanding social phenomena (Cohen et al., 2011; Au, 2017). While quantitative analyses effectively identify patterns and correlations, they often struggle to capture the underlying meanings and motivations of human behaviour. Critics argue that rigid response categories in surveys, for example, may overlook the complexities of lived experiences (Lipworth et al., 2011). Beyond methodological concerns, this divide between quantitative and qualitative traditions could lead to an increasingly fragmented disciplinary landscape. However, the rise of mixed methods in research suggests that this challenge can be mitigated. Notably, existing literature emphasizes the importance of fostering quantitative literacy among sociology students while also preserving the depth offered by qualitative approaches (Wilder, 2010; Williams et al., 2015). This perspective contrasts with the current state of Turkish sociology education. Ultimately, leveraging the strengths of both methodologies is essential for developing a more comprehensive understanding of social issues.

Conclusions

This study examines the recent methodological transformations in sociological research and their impact on academic knowledge production. The analysis reveals that computational sociology, big data analytics, and AI-assisted methods are becoming increasingly prominent in sociological research. Techniques such as social network analysis, machine learning, and text mining are gaining traction, raising important discussions about how these methods can be integrated with traditional qualitative research approaches. At the same time, while methodological diversity expands sociology's analytical capacity, it also brings ethical and epistemological challenges. Issues such as algorithmic bias, data privacy, and the dominance of Western-centric knowledge production have become critical concerns for the future of sociological research. In this context, our study highlights the need for restructuring sociology education to embrace methodological diversity. Preserving traditional qualitative methods

while integrating computational techniques in a balanced manner will be crucial for the discipline's future development.

Ultimately, it is clear that sociology's methodological transformation must be approached not only through technical innovations but also through epistemological and ethical considerations. As big data, AI-driven methods, and interdisciplinary approaches become more widespread, the methodological framework of both quantitative and qualitative research continues to evolve. This study aims to contribute to future methodological discussions and suggests that future research should include broader timeframes and examine the impact of these methodological shifts across different subfields of sociology. Moving forward, research should explore these transformations in greater depth to ensure that sociology continues to fulfil its core mission of understanding social realities.

References

Altman, M., & Cohen, P. N. (2024). The state of sociology: Evidence from dissertation abstracts. OSF. https://doi.org/10.31235/osf.io/a8uyp

Barocas, S., & Nissenbaum, H. (2014). Big data's end run around procedural privacy protections. *Communications of the ACM, 57*(11), 31-33.

Beigi Nasrabadi, F., Farahi, M. M., & Khorakian, A. (2025). Female leadership in future organizations. *Public Management Review, 27*(4), 567–586. https://doi.org/10.1080/14719037.2025.1234567

Berger, R. J. (2008). Agency, structure, and the transition to disability: A case study with implications for life history research. *The Sociological Quarterly*, *49*(2), 309-333. https://doi.org/10.1111/j.1533-8525.2008.00117.x

Byrne, D. (2012). UK sociology and quantitative methods: Are we as weak as they think? Or are they barking up the wrong tree?. *Sociology*, *46*(1), 13-24. https://doi.org/10.1177/0038038511419178

Castells, M. (1996). *The rise of the network society*. Blackwell Publishers.

Cohen, R. L., Hughes, C., & Lampard, R. (2011). The methodological impact of feminism: A troubling issue for sociology?. *Sociology*, *45*(4), 570-586. https://doi.org/10.1177/0038038511406599

Comte, A. (1970). *Introduction to Positive Philosophy.* Indianapolis, IN: Bobbs-Merrill.

Couldry, N., & Mejias, U. A. (2019). The costs of connection: How data is colonizing human life and appropriating it for capitalism. In *The costs of connection*. Stanford University Press.

Çelik, N. (2024). *A comparative bibliometric analysis based on the Istanbul University Journal of Sociology and The American Sociological Review.* In ICSAS 1st International Conference on Sociology (pp. 1-12). July 26 – 28, 2024 – Eskisehir, Academy Global Publishing House, ISBN NR: 978-625-6283-51-0.

Durkheim, E. (1982). *The Rules of Sociological Method.* London: Macmillan.

Erola, J., Reimer, D., Räsänen, P., & Kropp, K. (2015). No crisis but methodological separatism: A comparative study of Finnish and Danish publication trends between 1990 and 2009. *Sociology*, *49*(2), 374-394. https://doi.org/10.1177/0038038514542495

Ess, C. (2020). From the digital to a post-digital era?. In *Life and the Law in the Era of Data-Driven Agency* (pp. 117-133). Edward Elgar Publishing.

Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.

Fries, C. J. (2009). Bourdieu's reflexive sociology as a theoretical basis for mixed methods research: An application to complementary and alternative medicine. *Journal of mixed methods research*, *3*(4), 326-348. https://doi.org/10.1177/1558689809336660

Fuhse, J., & Mützel, S. (2011). Tackling connections, structure, and meaning in networks: quantitative and qualitative methods in sociological network research. *Quality & quantity*, *45*, 1067-1089. https://doi.org/10.1007/s11135-011-9492-3

Gobo, G. (2015). The next challenge: From mixed to merged methods. *Qualitative Research in Organizations and Management: An International Journal*, *10*(4), 329-331. https://doi.org/10.1108/qrom-07-2015-1309

Hine, C. (2000). *Virtual ethnography.* SAGE Publications.

Hou, J., Zheng, B., Li, H., & Li, W. (2025). Evolution and impact of the science of science: From theoretical analysis to digital-AI driven research. *Humanities and Social Sciences Communications*, *12*(1), 1–15. https://doi.org/10.1038/s41599-025-04617-1

Hsiung, P. C. (2017). The politics of rebuilding Chinese sociology in 1980s. *Qualitative Inquiry*, *23*(1), 89-101. https://doi.org/10.1177/1077800416655826

Kitchin, R. (2014). *The data revolution: Big data, open data, data infrastructures and their consequences.* SAGE Publications.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network theory.* Oxford University Press.

Law, J. (2008). On sociology and STS. *The sociological review*, *56*(4), 623-649. https://doi.org/10.1111/j.1467-954x.2008.00808.x

Liu, B., Siqin, C., & Jiang, H. (2025). Evolutionary processes and drivers of agricultural functions in Chinese villages. *Scientific Reports*, *15*(3), 1–10. https://doi.org/10.1038/s41598-025-92660-y

Markham, A., & Buchanan, E. (2012). Ethical decision-making and Internet research: Recommendations from the AoIR Ethics Working Committee. *Association of Internet Researchers.* https://aoir.org/reports/ethics3.pdf

Menon, R. J. (2025). Reimagining ageing and later-life care: The perspectives of childfree adults in urban India. *Society*, *62*(1), 98–115. https://doi.org/10.1007/s12115-025-01065-0

Noble, S. U. (2018). Algorithms of oppression: How search engines reinforce racism. In *Algorithms of oppression*. New York university press.

Nock, D. (2004). The myth about "myths of the Chicago School": Evidence from Floyd Nelson house. *The American Sociologist*, *35*(1), 63-79. https://doi.org/10.1007/s12108-004-1003-8

O'Neil, C. (2016). *Weapons of math destruction: How big data increases inequality and threatens democracy.* Crown Publishing.

Panayotova, P. (2019). Realities and perceptions of methodological teaching and debates in post-war British Sociology: New evidence from Peel (1968) and Wakeford (1979). *Sociology*, *53*(5), 826-842. https://doi.org/10.1177/0038038519846038

Payne, G., Williams, M., & Chamberlain, S. (2004). Methodological pluralism in British sociology. *Sociology*, *38*(1), 153-163. https://doi.org/10.1177/0038038504039372

Peel, N., Workman, A., & Reis, A. (2025). Challenges for meaningful participation in prisoner or corrective services research. In *Handbook of sensitive research in the social sciences* (pp. 233–256). Edward Elgar Publishing. https://doi.org/10.4337/9781035315239.00033

Raftery, A. E. (2001). Statistics in sociology, 1950–2000: a selective review. *Sociological Methodology*, *31*(1), 1-45. https://doi.org/10.1111/0081-1750.00088

Rajčan, A., & Burns, E. A. (2021). Research productivity of sociology PhD candidates at interdisciplinary schools of social science at elite Australian universities, 2013–17: A gender perspective. *Journal of Sociology*, *57*(3), 501-521. https://doi.org/10.1177/1440783320927094

Rosnon, M. R. (2025). Exploring the subjective financial well-being of indigenous people communities in Malaysia. *Pertanika Journal of Social Sciences & Humanities*, *33*(S1), 1599–1620.

Schwemmer, C., & Wieczorek, O. (2020). The methodological divide of sociology: Evidence from two decades of journal publications. *Sociology*, *54*(1), 3-21. https://doi.org/10.31235/osf.io/s59bp

Smart, B. (2013). *Sociology, phenomenology and Marxian analysis: A critical discussion of the theory and practice of a science of society*. Routledge.

Sokolovska, V., Čobanović, K., & Nikolić-Đorić, E. (2011). Position and Perspective of Statistics in Sociology. *Chinese Business Review*, *10*(10), 924-929.

Stapf, I., & Heesen, J. (2025). Ethical guidelines for doing research with children in sensitive subject areas. In *Handbook of sensitive research in the social sciences* (pp. 125–148). Edward Elgar Publishing. https://doi.org/10.4337/9781035315239.00015

Taylor, L. (2017). What is data justice? The case for connecting digital rights and freedoms globally. *Big Data & Society*, *4*(2), 2053951717736335

Ünal, S., & Binay, B. (2017). Signs of the feminization of sociology in Turkey: Transformation of gender composition and possible scenarios. *International Sociology*, *32*(3), 391-416. https://doi.org/10.1177/0268580917693174

Weber, M. (2017). *Methodology of social sciences*. Routledge.

Zajko, M. (2022). Artificial intelligence, algorithms, and social inequality: Sociological contributions to contemporary debates. *Sociology Compass*, *16*(3), e12962.