

Analyzing Qualitative Data Using ChatGPT

A Researcher's Journey

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Experiences with Coding and Beyond

Early History

- The Ethnograph (1990s)
- ATLAS.ti (2010 onward)
- Dedoose (2015 onward)
- MAXQDA (2015 onward)

More Recently

- Article using ChatGPT to reanalyze two sets of previously published focus groups
- Developing “Query-Based Analysis” in ChatGPT as a strategy for qualitative data analysis

Establishing a “Proof of Concept”

GOAL: Experiment with ChatGPT as a tool for analyzing qualitative data

DATA: Compare outcomes of using ChatGPT to results from previously analyzed data sets

Experiences of First-Year Graduate Students (6 focus groups)

Experiences of Dual-Earner Working Couples with Caregiving Responsibilities for Both Younger Children and Older Parents (19 focus groups)

METHOD: Broad, less-structured queries, followed by more specific follow-up questions

RESULTS: Both cases demonstrated that ChatGPT can be a powerful tool

More successful at reproducing concrete, descriptive themes

Less successful at locating subtle, interpretive themes

Requires that the analyst already has a strong familiarity with the data.

CONCLUSIONS: Can disrupt coding as the dominant paradigm for qualitative data analysis

Morgan, David L. 2023. Exploring the Use of Artificial Intelligence for Qualitative Data Analysis:

5:23 PM The Case of ChatGPT. *International Journal of Qualitative Methods*, 22.

Establishing a “Proof of Concept”

An example of a broad query (from Dual Working Couples study)

“What were the main things that made it either easier or harder for these focus group participants?”

ChatGPT Response

The focus group participants mentioned that flexibility in work schedule, ability to work outside of the office, and support system from colleagues made it easier for them to combine work with family. On the other hand, lack of flexibility in work schedule and difficulty negotiating job share while pregnant were mentioned as factors that made it harder. No specific information was provided for other factors that make it harder.

Establishing a “Proof of Concept”

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ChatGPT Response

The focus group participants mentioned that **flexibility** in work schedule, ability to work outside of the office, and support system from colleagues made it easier for them to combine work with family. On the other hand, lack of **flexibility** in work schedule and difficulty negotiating job share while pregnant were mentioned as factors that made it harder. No specific information was provided for other factors that make it harder.

Establishing a “Proof of Concept”

An example of a specific query (from Dual Working Couples study)

“What do these participants mean when they talk about flexibility?”

ChatGPT Response

When the participants talk about flexibility, they are referring to the ability to adjust their work schedule to accommodate family responsibilities. This means having some control over when and where they work, which allows them to better balance their work and family obligations. Flexibility can include things like working from home, adjusting work hours, or taking time off when needed. Having a flexible work schedule can help reduce stress and make it easier for working parents to manage both their work and family responsibilities.

Establishing a “Proof of Concept”

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ChatGPT Response

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Developing a Systematic Set of Procedures

Three-step process of *Query-Based Analysis* (QBA)

STEP #1 Broad, unstructured queries generate a set of candidates for themes

STEP #2 More specific queries refine themes and suggest relationships among themes

STEP #3 Detailed searches provide supportive data on each theme

Not a bottom-up approach with codes gradually aggregated into themes

Instead, QBA:

- Begins by generating wide-ranging themes
- Progressively develops more detailed versions of those themes
- Ensures that the final themes are supported by the data.

Developing a Systematic Set of Procedures

Second Research Project

GOAL: Investigate effectiveness of ChatGPT for a three-step, Query-Based Analysis

DATA: Seeking diagnosis for a family member with dementia (6 focus groups)

RESULTS: Six basic themes with two broad subthemes

CONCLUSIONS: ChatGPT and QBA can definitely do high-quality theme-based analysis

Developing a Systematic Set of Procedures

1. Querying for the basic research question (from Seeking Diagnosis for Dementia)

“Give me a list of the key themes that affected when and why these caregivers sought diagnosis.”

2. Querying for more refined themes

“Give me a list that tells me more about how the earlier theme of need for a specific diagnosis.”

3. Querying for specific quotations

“Give me direct quotations from the data that are related to the need for a specific diagnosis.”

Conclusions from Both Investigations

ChatGPT and Query-Based Analysis:

- **CAN** produce broad comprehensive themes from a very general set of queries...
BUT it requires human judgement
- **CAN** create more refined, specific themes and give insights into the relationship between them...
BUT it requires human judgement
- **CAN** search for and supply quotations as supportive evidence for themes...
BUT it requires human judgement

In AI jargon:

There needs to be a human in the loop at all times

Broader Implications

ChatGPT has the power to disrupt traditional methods based on coding

BUT given how entrenched coding is, replacing it will require a true paradigm shift

- Better ideas and procedures don't just speak for themselves
- Newer researchers are often the first to explore alternative ways of doing things

AND this shift will depend as much on social factors as on the actual power of AI

- Researchers need to choose new options
- Reviewers and editors need to be accepting
- Funding bodies have to be open minded

**Hopefully, the results of my personal journey with AI will stimulate
a larger journey for our field as a whole.**

Questions?

