

# **Redefining qualitative analysis in the AI era: Utilizing ChatGPT for efficient thematic analysis**

HE ZHANG, CHUHAO WU, JINGYI XIE, YAO LYU, JIE CAI, and JOHN M. CARROLL



# Introduction and Background

Thematic analysis is super important to qualitative research!!

But...

It's really hard for junior researchers:

- Hard to identify appropriate themes due to subjectivity
- Lots of work in terms of time and effort!



# Study Design

Recruited 17 participants + 4 pilot participants who were experienced with qualitative analysis

Two-part study:

1. Semi-structured interview: experiences/challenges with qualitative research, experiences/challenges with ChatGPT, experiences/challenges with qualitative analysis software
2. Experiment:
  - a. Participants analyze qualitative data using ChatGPT, designing their own prompts up to 5 times, and thinking aloud about their process
  - b. Next, researcher + participants co-design the prompts and discuss



# Results: Challenges with ChatGPT

1. Lack of Transparency
2. Challenges Designing Prompts
  - a. Outcomes appear to be random
3. Not knowing what ChatGPT is capable of
4. Need for customization/flexibility

# Results: Participant Design Processes

Participant No. (Index)	Background / Conceptual Understanding	Focus on Methodology (Goal of Task)	Focus on Analytical Process (context)	Data Format (Inputs)	Data Format (Outputs)	Role-Playing	Prioritization	Transparency & Traceability	Acknowledgment of Expertise
5	●	●	●	○	○	○	●	●	○
6	●	●	○	○	○	●	●	●	○
7	●	●	●	○	○	●	●	●	○
8	●	●	○	◐	◐	●	○	●	●
9	●	●	○	◐	◐	○	●	●	○
10	●	●	●	○	○	○	●	●	○
11	●	●	●	○	◐	○	●	●	○
12	●	●	●	◐	◐	○	○	●	○
13	●	●	●	○	○	●	●	●	○
14	●	●	●	◐	◐	○	●	●	○
15	●	●	●	◐	◐	○	●	●	○
16	●	●	●	○	○	○	○	●	○
17	●	●	○	○	◐	●	○	●	●

○: a strategy not employed by the participant in crafting the prompt.

●: a strategy utilized by the participant in crafting the prompt.

◐: a strategy adopted by the participant following the researcher's suggestion.



# Results: Participant Design Processes

Advantages of using LLMs

1. Iteration allows for more creativity and flexibility
2. Robust responses
3. Interaction in natural language



## **Results: Participant Opinion on LLM Use**

1. Increased transparency and trust after using prompt design framework
2. Increased understanding of how to use ChatGPT



# Take-Aways

1. Prompt engineering is really challenging, and using LLMs for qualitative analysis is still at an early stage
2. Curious about how this experiment would go today / if you give people a different model/conceal what the model name is