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Thematic Analysis Through Generative Artificial Intelligence: A Comparative Case Study

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Thematic analysis is a widely used qualitative research method for identifying recurring patterns and themes within data sets. It has been utilized in various fields, yet it is quite labor intensive as the process involves repetitive tasks such as close reading, coding and theming. This study explores the potential symbiosis between generative artificial intelligence (GenAI) and thematic analysis. Employing a comparative case study approach, the research compared three different GenAI (Chat-GPT, Claude AI, Gemini) thematic analysis output within dataset of vision and mission statements from three artificial intelligence companies. The output of the analysis was presented as tables which are also generated by GenAI. The AIxGEO model, which is developed by Turobov et al. (2024), is pre-trained with thematic analysis guidelines, displayed best performance in terms of categoraization and consistency. Anthropic's Claude AI system also demonstrated comparable performance, yet the base Gemini model has encountered problems regarding consistency and unique theme generation. 5 out of 11 quotations that are stated by AIxGeo are also stated by Claude AI with similar themes. Findings suggest that, when utilized under human supervision, GenAI facitiliates researchers' qualitative research capabilities. However, complete reliance on automated analysis remains of no avail due to Al's limitations in context sensitive analysis related with theoretical framework of study. As the GenAI gets more customizable and pre-trained on certain fields, its capabilities regarding academic methodology are expected to excel. As demonstrated in comparative analysis, the level of precision of the AIxGEO model is quite high. Therefore, the integration and more significantly customization of GenAI tools into the context of qualitative research methodologies holds promising opportunities, thereby requiring academic attention and exploration.

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