



Exploring Women's Fertility Perspectives Through AI-Assisted Qualitative Text Analysis: Evidence from Chinese Social Media

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Abstract. Against the backdrop of China's low fertility rate, issues related to female reproduction have become increasingly prominent. To answer this research question, this study used China's social media data and AI-assisted qualitative text analysis to reveal women's perspectives on fertility issues against the backdrop of low birth rates. By integrating AI-assisted topic clustering analysis with researcher-led qualitative interpretation, the study captured the mainstream viewpoints emerging from online discussions on themes such as fertility, motherhood, family, and personal life. The findings indicate that economic pressure, work-family conflicts, and personal choices constitute the three core themes associated with contemporary women's fertility perspectives. These thematic analyses reveal that fertility decisions are not only closely linked to structural issues such as housing costs, employment disparities, and unequal parenting burdens, but also intertwined with shifts in social values including personal autonomy, self-development, and emotional health. By integrating AI-assisted thematic analysis with qualitative interpretation, this study further demonstrates the potential of digital social media data in examining the construction of fertility-related meanings within online environments.

Keywords: Women's fertility perspectives; AI-assisted text analysis; Social media; Low fertility ;Digital discourse.

1 Introduction

In recent years, low fertility has become an increasingly significant social issue in China, and there has been growing attention regarding its influence on population structure, family development, and long-term social sustainability. Despite the implementation of the two - child and later the three - child policy, China's fertility rate has continued to decline. According to the National Bureau of Statistics of China (NBS), the birth rate declined from 8.52‰ in 2020 to 6.77‰ in 2024, while negative population growth has continued since 2022 ^[1].

Although existing research has emphasized the influence of factors such as economic pressure, housing costs, labor market conditions, gender expectations, family responsibilities, and lifestyle changes on fertility decisions ^[2], there remains insufficient

attention to how women subjectively perceive, cope with, and address fertility-related issues in the contemporary digital environment.

Nowadays, social media platforms have become important spaces where fertility-related experiences, emotional attitudes, and family values are publicly expressed and discussed. Online discussions concerning motherhood, parenting pressure, marriage, career development, and personal autonomy provide valuable materials for understanding women's fertility perspectives in contemporary China.

Against this background, this study combines Chinese social media data with AI-assisted qualitative text analysis to explore women's fertility perspectives in the context of low fertility. Through AI-assisted thematic organization and qualitative interpretation, the study aims to identify recurring thematic patterns in online fertility-related discussions and examine how these themes reflect the interaction between structural pressure, gender expectations, emotional concerns, and individualized life values.

This study contributes to existing research in two main aspects. Empirically, it provides a qualitative exploration of how fertility-related meanings are expressed and negotiated within digital environments. Methodologically, it further demonstrates the potential of combining AI-assisted thematic organization with qualitative interpretation in the analysis of large-scale social media discussions.

2 Data and Methodology

2.1 Data Collection

This study primarily utilized China's social media platforms, Rednote and Weibo, to collect relevant data. These platforms exhibit exceptionally high engagement in discussions related to family life, childbirth, motherhood, and personal experiences, providing substantial content that reflects people's daily attitudes, emotional expressions, and personal reflections on issues concerning childbirth and family.

Data collection was conducted through keyword-based searches, utilizing terms related to fertility and family life, including "fertility," "parenting," "motherhood," "marriage," and "family responsibilities." This study primarily focuses on users' discussions, experiences, attitudes, and reflections regarding fertility-related issues in posts and comment sections.

To enhance data relevance and analytical consistency, researchers conducted manual curation of the collected materials. During this process, advertisements, repetitive content, irrelevant discussions, and posts lacking substantive fertility-related information were excluded. Following preliminary cleaning and screening, approximately 120 valid text entries were retained for analysis. This study employed an exploratory qualitative research approach aimed at identifying recurring thematic patterns and meaning structures in online fertility discussions.

Due to considerations of research ethics and user privacy, this analysis included only publicly available online content. During data compilation, usernames and personal identification information were concealed to ensure anonymity and mitigate ethical concerns associated with the use of digital data.

2.2 AI-Assisted Qualitative Analysis

This study employs an artificial intelligence-assisted qualitative text analysis method to examine discussions on childbirth topics by women on China's social media platforms. Artificial intelligence was primarily utilized as an auxiliary analytical tool for semantic grouping, preliminary topic clustering, and large-scale text organization. The final interpretation and conceptual elaboration remained under the researchers' guidance and were grounded in contextual qualitative analysis.

This analytical framework integrates AI-assisted thematic organization with researcher-led interpretation, aiming to balance analytical efficiency with contextual understanding. The approach proves particularly valuable in digital social research involving extensive unstructured textual data. Recent studies further highlight the growing potential of AI-assisted qualitative analysis in enhancing thematic organization capabilities and supporting large-scale digital text data analysis in social research [3][4].

This analytical process comprises five main stages: First, the collected materials are cleaned to remove duplicate, irrelevant, or fragmented content; second, through preliminary reading and keyword identification, repeated expressions and discussion patterns are identified within the dataset; third, artificial intelligence-assisted topic clustering is employed to group semantically related discussions and establish an initial topic structure; fourth, researchers thoroughly review the original text context to refine, compare, and interpret the AI-generated topic clusters; finally, more generalized analytical themes are extracted based on the identified repetitive patterns in the discussions. (see Figure 1).

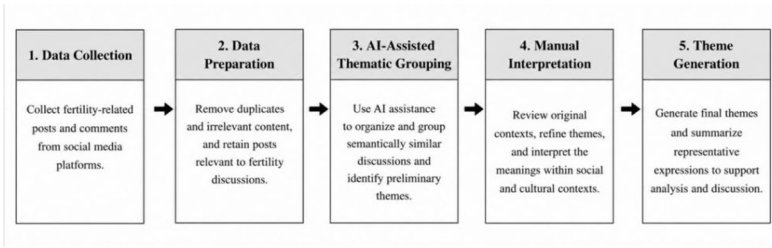


Fig. 1. AI-Assisted Qualitative Analysis Procedure.

This analysis employs a logical framework that combines iteration and reflection: preliminary topic clusters generated with AI assistance are continuously cross-referenced against the original social media texts to ensure contextual consistency and interpretative coherence. By repeatedly reviewing the original discussions, researchers refine topic boundaries and clarify contextual meanings. The study places particular emphasis on women's expressions of concerns related to childbirth.

3 Results

Thematic analysis assisted by artificial intelligence revealed that discussions on female fertility on China's social media platforms primarily revolve around three core

dimensions: economic pressure, work-family conflicts, and personal choices (see Table 1). These themes recur frequently in online discussions and are closely interconnected. The findings indicate that women's perspectives on childbirth are influenced not only by structural factors such as economic insecurity and employment pressures, but also by shifts in personal values, emotional expectations, and individual interpretations of family life.

Table 1. AI-Assisted Thematic Structure of Women’s Fertility Perspectives.

Theme	Main Concerns	Analytical Interpretation
Economic Pressure	Housing costs, educational expenses, unstable employment, and long-term childrearing burden	Fertility anxiety is closely associated with perceived economic insecurity and uncertainty regarding future living conditions.
Work–Family Conflict	Career interruption, unequal childcare responsibilities, emotional exhaustion, and lack of support	Fertility decisions are shaped by tensions between employment expectations and gendered caregiving responsibilities
Individual Choice	Personal freedom, self-development, bodily autonomy, lifestyle preference	Fertility increasingly reflects individualized values and reflexive life planning

3.1 Economic Pressure

Economic pressure is one of the most frequently cited themes in discussions related to childbearing. Many users closely associate childbirth with the continuously rising costs of housing, education expenses, unstable employment conditions, and the long-term financial burdens associated with raising children, even viewing childbirth as a life decision fraught with financial risks.

During multiple discussions, users widely expressed concerns about the current social environment's lack of sufficient financial resources to raise children. Some admitted they were "barely making ends meet," while others emphasized that with intensifying educational competition and rising living costs, childcare expenses continue to increase. Consequently, fertility-related anxieties are closely linked to people's perceptions of economic insecurity and uncertainty about future family life.

The related discussions also reflect concerns about social mobility and intergenerational pressures. Some users worry that their children may repeat their own stressful and financially unstable life trajectory.

In this context, fertility decisions involve not only immediate financial expenditures but also profound long-term concerns regarding children's future educational opportunities, employment prospects, and overall quality of life.

Meanwhile, multiple discussions have linked fertility decisions to a broader understanding of social instability. Concerns regarding layoff risks, work-related stress, high housing prices, and increasingly fierce educational competition have further reinforced the notion that "childbearing entails significant economic risks."

These discussions indicate that economic factors have become deeply integrated into contemporary fertility attitudes and are closely linked to people's widespread anxiety about social and future uncertainties.

3.2 Work–Family Conflict

Work-family conflict is another central theme repeatedly discussed in online discussions on childbearing. Many users regard childbirth and motherhood as the root cause of tensions between work responsibilities, parenting obligations, emotional health, and daily life. The discussions also frequently highlight the difficulty of balancing career development with parenting responsibilities.

A major concern highlighted in the discussion is the uneven distribution of parenting responsibilities within families. Many users argue that parenting duties remain predominantly borne by women, with fathers often playing only a relatively secondary caregiving role. Consequently, the maternal role is frequently associated with emotional exhaustion, restricted personal freedom, and increased family stress.

Career disruption and employment insecurity are equally prominent topics in fertility-related discussions. Some users express concerns that childbirth may negatively impact promotion opportunities, long-term career development, and workplace competitiveness; others share experiences of employment discrimination faced by married or childbearing women, indicating that fertility status may confer additional disadvantages for women in the labor market.

Furthermore, numerous discussions highlighted deficiencies in social and family support systems. Participants frequently cited challenges in areas such as childcare assistance, flexible working hours, emotional support, and coping with expectations from elderly relatives. Some users argued that the lack of institutional support and persistent gender-based expectations for caregiving roles significantly exacerbated women's fertility anxiety.

Overall, these discussions indicate that fertility decisions are profoundly influenced by the persistent tension between employment structures and family childcare responsibilities. Consequently, fertility-related concerns extend beyond childbirth itself and are closely intertwined with broader societal issues such as gender roles, emotional labor, and work-family balance in contemporary society.

3.3 Individual Choice

The theme of personal choice reflects a shifting attitude toward childbirth, marriage, motherhood, and self-development. Contrary to the traditional view that childbirth is an inevitable life stage, many users emphasize personal autonomy, emotional well-being, lifestyle freedom, and individual preferences when discussing childbirth-related decisions.

Multiple studies indicate that reproductive issues are increasingly regarded as personal life choices rather than social obligations ^[5]. Some users explicitly state that they do not oppose having children but prefer a lifestyle centered on self-development, personal freedom, travel, hobbies, or emotional independence. Others challenge the traditional notion that "women must become mothers to achieve a complete or meaningful life."

Another critical aspect of this topic concerns public concerns regarding bodily autonomy and reproductive risks. Many users have expressed fears related to pregnancy, labor pain, irreversible physical changes, emotional stress, and the long-term physical impacts associated with motherhood. These concerns are frequently cited as primary reasons for delaying or refusing childbirth.

These discussions also reflect a growing awareness of the profound implications and responsibilities inherent in childbirth itself. Some users argue that bringing a child into the world entails long-term emotional, financial, and ethical obligations; others question whether childbearing remains appropriate amid increasing social instability and uncertainty. From this perspective, conversations about childbirth are increasingly extending to broader reflections on self-identity, accountability, future life planning, and the meaning of parenthood in contemporary society.

Overall, the research findings indicate that contemporary fertility attitudes are increasingly influenced by individualized value orientations and self-reflection-based life planning. Fertility decisions are no longer solely understood in terms of traditional family expectations but are increasingly weighed against factors such as autonomy, emotional fulfillment, personal identity, and quality of life.

4 Discussion

The research findings indicate that contemporary China women's attitudes toward childbirth are influenced not only by economic factors but also shaped by evolving gender expectations, family responsibilities, and personal life values. Social media discussions reveal that fertility-related decisions are increasingly intertwined with broader issues such as career development, emotional health, and future life stability ^[6].

A significant finding is that economic pressures are not merely perceived as financial burdens but also as sources of long-term uncertainty. Discussions regarding housing costs, educational competition, employment instability, and childcare expenses demonstrate that fertility decisions are increasingly grounded in considerations of risk, responsibility, and future stability ^{[7][8]}.

The research also highlights the persistent impact of gender-specific parenting expectations: numerous online discussions link motherhood to career interruptions, emotional exhaustion, and unequal distribution of family responsibilities, indicating that work-family conflict remains a significant factor shaping fertility attitudes ^{[9][10]}.

Simultaneously, studies reveal a growing trend toward individualized fertility decisions. Many participants emphasize personal autonomy, self-development, emotional well-being, and bodily autonomy when discussing reproductive choices, with fertility

issues increasingly being viewed as decisions negotiated autonomously by individuals rather than socially imposed obligations ^[11].

5 Conclusion

This study employs social media data and an artificial intelligence-assisted qualitative text analysis method to examine women's discussions on fertility issues against the backdrop of low birth rates. The findings reveal that economic pressures, work-family conflicts, and personal choices constitute the core thematic framework of contemporary discussions on fertility issues.

The study further indicates that fertility attitudes are not only influenced by economic and institutional factors, but also shaped by the evolution of cultural values, family expectations, and individual perceptions of life. This demonstrates that fertility decisions are closely intertwined with broader social transformation processes and the construction of meaning in daily life.

From a methodological perspective, this study demonstrates the application potential of AI-assisted qualitative analysis in social science research involving large-scale digital textual data. AI-driven topic clustering enhances the efficiency of text organization and preliminary pattern recognition, while qualitative interpretation remains indispensable for understanding textual context and conducting meaning analysis.

Although this study is exploratory in nature and the dataset is relatively limited in size, it still provides a valuable perspective for gaining deeper insights into the mechanisms of expression and negotiation of fertility-related meanings in contemporary online environments. Future research could expand data sources to further investigate the relationships between digital discourse, gender norms, and fertility decisions in low-fertility societies.

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Disclosure of Interests

The author declares that there is no conflict of interest regarding the publication of this paper.

References

1. National Bureau of Statistics of China. (2025). Statistical communiqué of the People's Republic of China on the 2024 national economic and social development. <http://www.stats.gov.cn/>
2. Liu, X. (2025). Fertility intentions of China's one-child generation. *Asian Population Studies*, 21(1), 45–62. <https://doi.org/10.1080/13229400.2024.2399263>
3. Hitch, D. (2024). Artificial intelligence augmented qualitative analysis: The way of the future? *Qualitative Health Research*, 34(7), 595–606. <https://doi.org/10.1177/10497323231217392>
4. Christou, P. A. (2024). Thematic analysis through artificial intelligence (AI). *The Qualitative Report*, 29(2), 560–576. <https://doi.org/10.46743/2160-3715/2024.7046>
5. Liu, L., & Xiong, W. (2024). A qualitative study on the influence of individual-oriented mentality on fertility intention. *Advances in Psychology*, 14(6), 247–257. <https://doi.org/10.12677/AP.2024.146405>
6. Zhou, Y. (2025). Why has China's fertility rate plummeted in the past decade? *Social Sciences*, 14(5), 293. <https://doi.org/10.3390/socsci14050293>
7. Ren, Y., Cheng, X., Niu, C., Yang, F., & Zheng, Y. (2024). Fertility intention of young people of childbearing age in China after the implementation of the two-child policy: A systematic review and meta-analysis. *BMC Public Health*, 24, 3518. <https://doi.org/10.1186/s12889-024-20956-1>
8. Dong, W.-H., Wang, X., Yuan, F., Wang, L., Gu, T.-M., Zhu, B.-Q., & Shao, J. (2024). Will a government subsidy increase couples' further fertility intentions? *Human Reproduction Open*, 2024(4), hoae055. <https://doi.org/10.1093/hropen/hoae055>
9. Li, Z., Fan, J., & Wang, X. (2024). The impact of work-family conflict on Chinese women's fertility intentions: The role of fertility attitude, income class, and child-rearing burden. *Current Psychology*. <https://doi.org/10.1007/s12144-024-06550-0>
10. Fu, W., Zhang, L., & Chen, Y. (2025). Work-family conflict and second-child fertility intention in Chinese dual-earner families: Moderated mediation model of parental burnout and grandparent support. *Journal of Child and Family Studies*. <https://doi.org/10.1007/s10826-024-02972-2>
11. Liu, X. (2025). Fertility intentions of China's one-child generation. *Asian Population Studies*, 21(1), 45–62. <https://doi.org/10.1080/13229400.2024.2399263>

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