Statistical Analysis on Emerging Trends in Marriage and Fertility Attitudes among Zhejiang Youth

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Abstract

With the development of social and economic progress and the acceleration of informatization, young people's attitudes toward marriage and fertility are undergoing a fundamental transformation. This study focuses on young people in Zhejiang Province, employing a questionnaire survey and data analysis to explore the current state, characteristics, and underlying social factors influencing their marriage and fertility attitudes. The findings reveal that modern young people prioritize emotional and spiritual compatibility over traditional marriage and fertility needs when choosing a partner. Additionally, social competition pressure, economic costs, and individual development significantly impact on their decisions regarding marriage and childbearing. Furthermore, while marriage intentions have declined among young people, more than half remain positive toward marriage. However, increasing costs of marriage and child-rearing, as well as housing pressures, are identified as major constraints affecting young people's willingness to marry and have children. Based on the research findings, this paper proposes policy recommendations, including optimizing marriage and fertility policies, easing the economic burden on young people, and strengthening child-rearing support services. These suggestions aim to provide references for government policy, promote healthy development of young people's marriage and fertility attitudes, and contribute to social harmony and stability.

Keywords: Marriage and fertility; Demographic Transition; Grey prediction; Structural Equation Modeling.

1. Introduction

The evolving attitudes of young people toward marriage and childbearing have emerged as a significant social phenomenon, garnering considerable attention. The rapid advancement of socioeconomic development, the widespread enhancement of educational attainment, and the swift pace of informatization

have profoundly transformed the values and lifestyles of the younger generation. These changes greatly influence their decision-making processes regarding marriage and childbearing. In recent years, new dynamics in the marriage market, the diversification of social attitudes, and shifts in demographic structures have collectively contributed to the evolution of youth perspectives on these issues. Therefore, a comprehensive examination of the emerging trends in marriage and childbearing attitudes among young people in Zhejiang carries substantial theoretical significance and provides practical insights for the formulation of social policies and the planning of economic development.

With the swift advancement of the social economy, the value system of the younger generation has increasingly shifted towards individualism and self-fulfillment. This change is particularly evident in their attitudes towards marriage and childbearing. Marriage is no longer viewed as an obligatory life milestone; instead, there is a greater focus on the quality of marital relationships and the fulfillment of individual emotional needs [1-2]. This phenomenon aligns closely with the global trends described in the Second Demographic Transition, as economic development and educational attainment increase, marriage and childbearing transition from social obligations to personal choices [1-2]. Furthermore, comparative studies examining marriage and childbearing attitudes across various countries and regions have revealed that rising educational levels and improved economic status for women have led young individuals to adopt a more cautious and rational approach to these decisions. Consequently, patterns such as delayed marriage, delayed childbearing, and even opting to remain single or childless have become more prevalent [2].

The traditional roles of the family have gradually diminished, and the social significance attached to marriage and childbearing has evolved. Rising economic pressures and increased living costs impact on young people's expectations for marriage and childbearing, causing considerable transformations [2]. Moreover, decisions related to these aspects are not solely influenced by economic factors; they are also closely tied to shifts in social and cultural attitudes. In certain regions, conventional views on marriage are being changed by modern perspectives, with non-traditional relationship models—such as cohabitation before marriage and DINK (Double Income, No Kids) families—gaining broader social acceptance [3-5]. These studies provide a crucial theoretical foundation and an international viewpoint for understanding the current state of marriage and childbearing attitudes among young people in Zhejiang.

This survey aims to investigate the current status and trends regarding young people's attitudes toward marriage and childbearing. The intrinsic relationship between these attitudes and economic growth was examined, to provide reference for government policy. By gaining insights into the perspectives of the younger generation, this study aims to identify the needs and challenges faced by young people, guiding market innovation and development while mapping the trajectory of societal transformation, and offer strategic direction for the future development of Zhejiang.

2. Questionnaire Analysis

A total of 475 questionnaires were collected in this survey, yielding 447 valid responses. Among the participants, men comprised 49% while women made up to 51%, indicating a relatively balanced gender distribution and suggesting that various gender groups share a similar level of interest in the survey topic. The majority of respondents fall within the age range of 18 to 30, representing 77% of the total. Notably, students and young professionals account for a significant portion of this demographic, highlighting the survey's emphasis on the youth segment.

2.1. Data Preprocessing

During the data preprocessing stage, we implemented various methods to ensure the quality and reliability of our dataset. For missing values arising from the logical design of the questionnaire, responses from individuals who explicitly state their desire not to marry and subsequently do not answer questions related to the utility of marriage will be marked as missing data (null values). Missing values resulting from respondents' privacy concerns will be filled in using interpolation. To address the issue of high repetition in numerical responses, we established an invalid sample criterion: if 75% or more of the responses in a matrix scale question are identical, the sample will be deemed invalid. Additionally, for abnormal values that do not pass the box plot test, we will avoid easily dismissing them as invalid unless they present a clear contradiction with other information provided in the questionnaire. These preprocessing steps help maintain the integrity and consistency of the data, providing a reliable foundation for subsequent analysis.

2.2. Reliability Analysis

To assess the reliability of the questionnaire employed in this study, an analysis of Cronbach's α coefficient was conducted for the principal scales. The findings, as presented in Table 1, reveal that the Cronbach's α coefficient for each scale exceeds the threshold of 0.7, suggesting a robust level of internal consistency among the scales utilized in this research.

Table 1. Cronbach's α coefficients for research dimensions in reliability analysis

Cronbach's Reliability Analysis		
Research Dimension	Number of Items	Cronbach's α Coefficient
Perception of Marital Obstacles	11	0.792
Acceptance of Non-traditional Marriage and Love Concepts	7	0.733
Perception of Fertility Value	5	0.765
Perception of Fertility Obstacles	6	0.737
Expected Fertility Support Policies by the Public	11	0.818

Table 2. KMO and Bartlett's test results for validity assessment

KMO Measure of Sampling Adequacy		0.828
Bartlett's Test of Sphericity	Approximate Chi-square	4654.099
	df	496
	p-value	0.000

2.3. Validity Analysis

To assess the effectiveness and accuracy of the questionnaire scale, this study utilized principal component factor analysis for validity evaluation. Both the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were applied to determine the appropriateness of the data for factor analysis. The KMO value recorded was 0.828, indicating good data validity and suitability for extracting information. Furthermore, the p-value from Bartlett's test was 0.000, enabling us to reject the null hypothesis that the

correlation coefficient matrix among the variables is an identity matrix. This result further confirms the existence of correlations between the variables, making factor analysis suitable. Overall, these findings suggest that the design of the questionnaire is well-conceived and effective in capturing the necessary information, with favorable outcomes from the validity analysis.

3. Statistical Analysis on Emerging Trends in Marriage and Fertility Attitudes
3.1. Frequency Analysis

A total of 447 valid questionnaires were collected in this survey, with men comprising 49% and women 51%, resulting in a relatively balanced gender distribution. The participants were predominantly within the 18-20 age group, accounting for 58% of the total, aligning with the survey's focus on the "Generation Z" youth demographic. This generation is significantly connected to the Internet, mostly spend 5.5 to 7 hours on the internet (Fig. 1). Their views on marriage and child-rearing are notably influenced by historical contexts such as "involution" and "lying flat," as detailed in Fig. 2. The survey results indicate that 55.42% of young people express a willingness to marry. Although this figure represents a decline compared to 2021, it still reflects a generally positive attitude towards marriage among the youth. Additionally, the survey reveals that the costs of marriage and childbirth are significant factors hindering marriage and fertility. Fertility encouraging policies aimed at reducing housing costs have attracted high attention from young people.
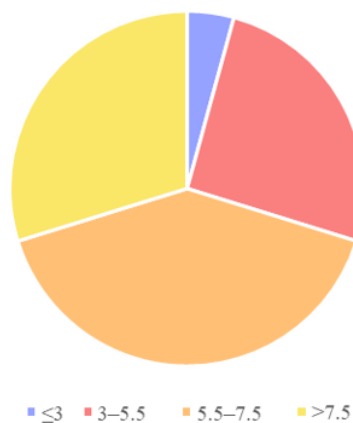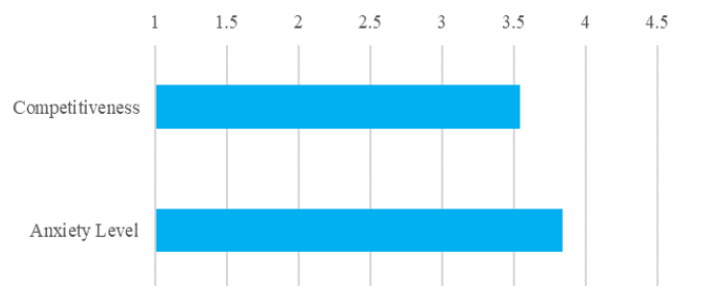

■ ≤3 ■ 3–5.5 ■ 5.5–7.5 ■ >7.5

Figure. 1 Daily Internet Usage Duration (hours) among Survey Respondents

Note: The scale ranges from 1 to 5, where 1 indicates "Very Negative" or "Very Relaxed," and 5 indicates "Very Positive" or "Very Anxious."

Figure. 2 Distribution of Competitiveness and Anxiety Levels among Survey Respondents

3.2. Cross-Over Analysis

3.2.1. Gender and Age factors

In the cross-comparative analysis, the results regarding the influence of gender and age group on the willingness to marry are presented in

Table 3. The findings indicate that both factors are not significant (p>0.1), suggesting that gender and age have minimal impact on the decision to marry.

Table 3. Cross-over analysis of gender and age factors on marriage intention

Item	Group	Marriage Intention				Total χ^2	p
		stay single	no, accept cohabitation	Uncertain	Yes		
Gender	Male	11	20	36	113 180		
	Female	24	15	79	117 235	3.56	0.31
Total		35	35	115	230 415		
Age Group	17 and below	0	0	5	0 5		
	18–20	24	20	80	147 271		
	21–23	6	1	15	58 80	13.25	0.35
	24–27	5	5	10	15 35		
	28–30	0	9	5	10 24		
Total		35	35	115	230 415		

Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

3.2.2. Competitiveness and Anxiety Factors

In the cross-comparative analysis, the impact of competition and anxiety on the willingness to marry is shown in Table 4. The results show that there is a significant correlation between the willingness to marry and the degree of competition and anxiety (p<0.01).

In the social context of "involution," competition and anxiety significantly influence people's attitudes towards marriage. When individuals experience low levels of competition and anxiety, they are more likely to have a positive intention towards marriage. However, as the pressures of "involution" intensify, leading to increased competition and anxiety, a growing number of individuals are opting for "uncertain" or "being single" rather than pursuing marriage. This shift reflects how the stress associated with "involution" causes people to hesitate in making marriage decisions, and in some cases, even to abandon their intentions to marry altogether.

Even in highly competitive and anxiety-inducing situations, some individuals remain resolute in their desire to marry. This commitment may arise from their belief that marriage provides emotional comfort and stability in a society marked by an "involution." Alternatively, a strong conviction in the significance of marriage may empower them to face challenges and persist in their pursuit of married life.

Overall, the "involution" heightens people's competitiveness and anxiety, significantly undermining their willingness to marry and complicating the decision-making process surrounding marriage.

3.2.3 Internet Usage Time Factors

In the cross-comparative analysis, the impact of online time on the willingness to get married are shown in Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 5. The results show that there is a correlation between the willingness to get married and the time spent on the Internet (p=0.05).

Table 4. Cross-over analysis of competitiveness and anxiety level on marriage intention

Item	Group	Marriage Intention				Total	χ²	P
		No, plan to stay single	No, accept cohabitation	Uncertain	Yes			
	Very Negative	0	9	5	16	30		
	Somewhat Negative	0	4	9	24	37		
Competitiveness	Neutral	9	6	41	68	124		
	Somewhat Positive	21	5	48	74	148	137.48	0.00***
	Very Positive	5	11	12	48	76		
Total		35	35	115	230	415		
	Very Relaxed	0	13	5	14	32		
	Somewhat Relaxed	4	6	9	7	26		
Anxiety Level	Neutral	16	6	33	26	81		
	Somewhat Anxious	6	1	33	73	113	160.26	0.00***
	Very Anxious	9	9	35	110	163		
Total		35	35	115	230	415		

Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 5. Cross-over analysis of daily Internet usage on marriage intention

Item	Group	Marriage Intention				Total	χ²	P
		No, plan to stay single	No, accept cohabitation	Uncertain	Yes			
	≤3	1	0	0	23	24		
Approximate Daily Internet Usage (Hours)	3–5.5	8	11	26	60	105		
	5.5–7.5	10	11	57	104	182	18.98	0.05*
	>7.5	16	13	32	43	104		
Total		35	35	115	230	415		

Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

There appears to be a notable correlation between the time spent online and the willingness to marry. Generally, individuals who spend less time on the Internet tend to express a higher willingness to get married. In contrast, as online activity increases, the inclination towards marriage seems to decline. This trend may suggest that prolonged internet use can divert attention away from marriage planning, leading individuals to dedicate more time and energy to the virtual realm, which in turn makes them more cautious or even negative about the decision of marriage.

3.2.4. Intention to Engage in Romantic Relationships Factors

In the cross-comparative analysis, the impact of love intention on the willingness to marry are shown in

Table 6. The results show that there is a significant correlation between the willingness to get married and whether there is an intention to fall in love ($p<0.05$)

Table 6. Cross-over analysis of dating intention on marriage intention

Item	Group	Marriage Intention				Totalχ^2	p
		No, plan to stay single	No, accept cohabitation	Uncertain	Yes		
Do you currently have plans to date?	Yes	11	20	18	102	151	
	No	24	10	57	33	124	10.68 0.01**
Total		35	30	75	135	275	

Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

The intention to fall in love is closely linked to the desire to marry. Most individuals who aspire to enter a romantic relationship also tend to hold a positive outlook on marriage. Conversely, those who lack the intention to fall in love generally demonstrate a low willingness to marry. This suggests that the intention to pursue love can serve as a predictor of one's openness to marriage to some degree.

When individuals are motivated to initiate a romantic relationship, they often harbor higher expectations and a favorable attitude towards their future married life. However, it is important to acknowledge that even among those who plan to fall in love, some may resist the idea of marriage. This reluctance may stem from a desire for freedom, novelty, or personal growth, rather than a commitment to traditional married life. These individuals may experience a sense of pressure from the stability and long-term responsibilities associated with marriage. Furthermore, evolving social norms have led to an increasing acceptance of non-traditional forms of love and partnership, such as unmarried cohabitation, which can diminish the urgency for marriage among many people.

It is evident that the pursuit of marriage remains significant among this demographic, with a percent of 55.42% expressing certainty about marrying in the future. Although this figure shows a decrease compared to the 2021 survey of Chinese college students on marriage and childbearing, which reported as 61.38%, it still highlights a notable commitment to the idea of marriage [6]. This trend suggests a correlation between young people's willingness to marry and the increasing pressure of social competition in recent years.

3.2.5. Spearman Rank Correlation Analysis

In this part, we selected several questions for Spearman correlation analysis. The correlation coefficient table and the p-value test table are shown in Table 7.

Most variable relationships pass the significance level test, and the Spearman correlation coefficient heat diagram is generated as follows:

Table 7. Spearman's rank correlation coefficients among key variables

	Competitiveness	Anxiety Level	Num. of Romantic Relationships	Dating Intention	Marriage Intention
Competitiveness	1(0.00***)	0.783(0.00***)	0.243(0.03**)	0.065(0.64)	-0.327(0.02**)
Anxiety Level	0.783(0.00***)	1(0.00***)	0.096(0.49)	0.304(0.02**)	-0.264(0.05*)
Num. of Romantic Relationships	0.243(0.03**)	0.096(0.49)	1(0.00***)	0.363(0.01***)	0.088(0.52)
Dating Intention	0.065(0.64)	0.304(0.02**)	0.363(0.01***)	1(0.00***)	0.675(0.00***)
Marriage Intention	-0.327(0.02**)	-0.264(0.05*)	0.088(0.52)	0.675(0.00***)	1(0.00***)

Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively. p-values in parentheses.
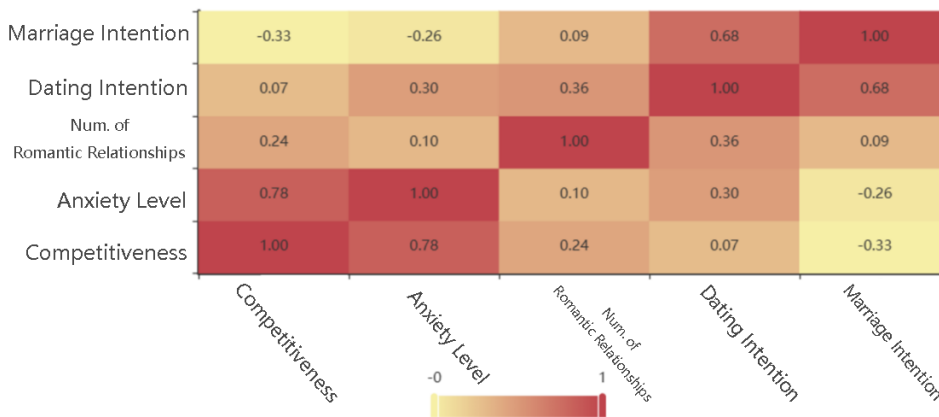

Figure. 3 the Spearman correlation coefficient heat diagram

Through Spearman correlation analysis, we further discovered a negative correlation between both competition and anxiety and willingness to marry. This finding suggests that young people's desire to marry may diminish when they encounter social competition and psychological pressure. Additionally, there exists a noticeable distinction between romantic relationships and marriage; those who wish to pursue romantic love may not necessarily express a willingness to enter into marriage. The results indicate that it's essential to consider a wider array of factors when examining young people's perspectives on marriage and parenting.

3.2.6. Multiple Response Analysis

In the multiple-choice analysis, we conducted a comprehensive examination of the factors influencing marriage decisions among young people. By utilizing multiple response frequency chi-square goodness of

fit test (Table 8). The results reveal a significant disparity in the selection ratios of the various options (P value of 0.00***), indicating that the importance of different criteria in young people's mate selection varies considerably.

Young people today tend to prioritize emotional, companionship, and spiritual support when selecting a spouse, with a respondent percentage of 61.70%. In contrast, traditional factors such as viewing marriage as an essential life milestone and the desire to have children through marriage have lower prevalence rates at 34.04% and 21.28%, respectively. This indicates that modern youth emphasize emotional and spiritual compatibility over traditional notions of marriage and reproductive needs. Furthermore, the influence of pressure from elders and peers on the mate selection criteria for contemporary youth is gradually diminishing (Fig.4).

Table 8. Multiple-response analysis of perceived motivations and pressures related to marriage

Item	Response Rate (%)	Prevalence Rate (%)	X^2	P
Marriage provides emotional support, companionship, or spiritual fulfillment	35.152%	61.702%		
Marriage is an essential life requirement	19.394%	34.043%		
Need for childbearing through marriage	12.121%	21.277%		
Physiological needs	6.667%	11.702%	103.17	0.00***
Material security provided by marriage	10.909%	19.149%		
Pressure from older generations	9.091%	15.957%		
Peer pressure	4.848%	8.511%		
Other	1.818%	3.191%		
Total	100%	175.532%		

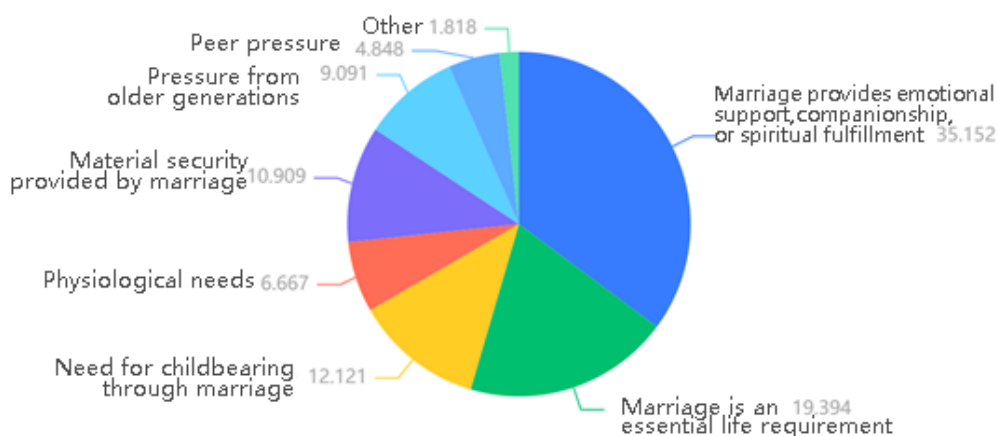Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Figure. 4 Statistical results of response rate

Through the Pareto chart analysis (Fig.5), we confirmed the significance of the option that "marriage can provide emotional, companionship, or spiritual support." Additionally, we observed that while the

option "the need to have children through marriage" remains popular, its prominence has diminished since the 2021 survey. This decline reflects a gradual shift in young people's perceptions, indicating that they are increasingly recognizing childbirth as a non-essential factor for marriage. These findings suggest that the concepts of marriage and childbearing among young people are undergoing significant transformations, with modern youth placing greater emphasis on their personal emotional needs and overall quality of life.
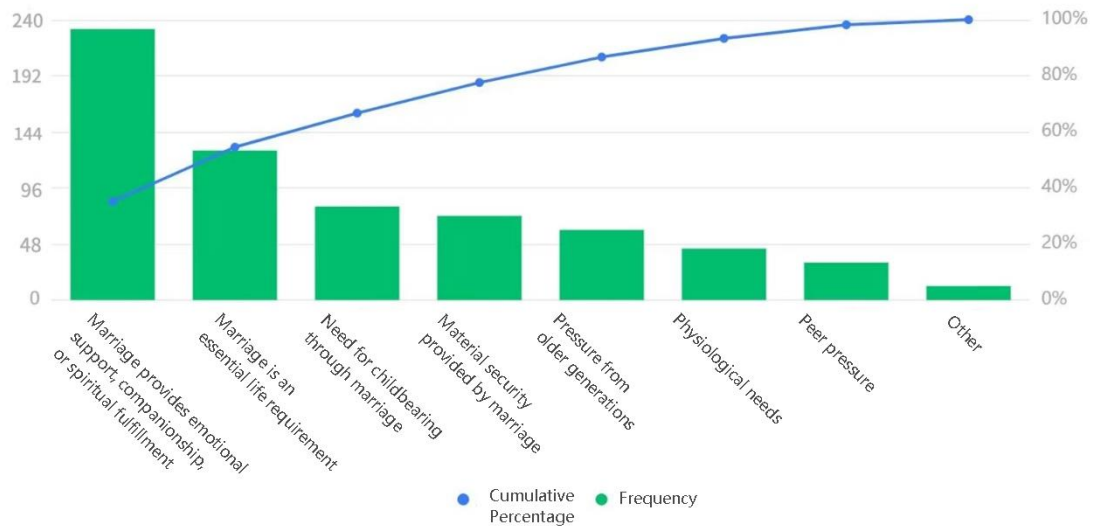

Figure.5 Pareto Chart of Marriage Motivations and Pressures

3.2.7. Grey Prediction Model

In order to comprehensively reflect the problem of low birth rate in society and compensate for the limitations of questionnaire surveys, we obtained data on the population aged 15 and above in China by marital status in the past decade from the National Bureau of Statistics [2].
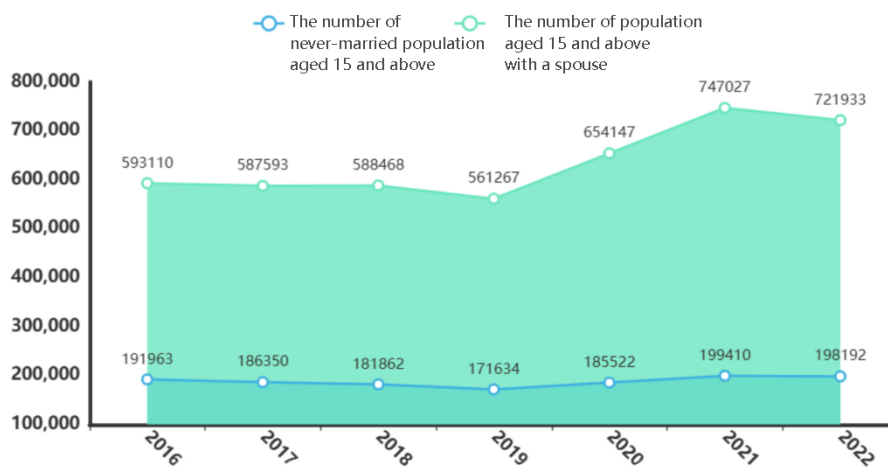

Figure.6 Unmarried and Spouse-Holding Population Aged 15+ (2016-2022)

Through standardized processing and analysis of the data, we found that the number of unmarried individuals reached a local minimum in 2019 and showed an increasing trend, largely due to the impact of

the epidemic. Prior to 2019, the number of unmarried people had been decreasing steadily each year, while the number of married individuals experienced only slight fluctuations. These trends can be attributed to the optimization of birth policies, the popularization of higher education, and evolving attitudes toward marriage.

Prior to constructing the grey prediction model GM (1,1), conducting a level ratio test on the time series is necessary. If it passes the level ratio test, it indicates that the sequence is suitable for building the grey model.

Table 9. Results of Grey Prediction Grade Ratio Test

Year	Original Value	Grade Ratio
2019	171,634	-
2020	185,522	0.925
2021	199,410	0.930
2022	198,192	1.006

Based on the analysis in Table 9, it is observed that all the level ratios of the original sequence fall within the interval (0.67, 1.492), thereby confirming that the original sequence is suitable for constructing a grey forecasting model.

To ensure the reasonableness and reliability of the grey forecasting model, it must undergo testing before being applied. Only the models that have successfully passed validation can be utilized for prediction purposes. The primary method employed by the system to evaluate the performance of grey forecasting models is through the posterior difference ratio, denoted as the C value.

Table 10. Parameters of the Grey Model Construction

Development Coefficient (a)	Grey Action Parameter (b)	Posterior Error Ratio (C)
-0.032	179,609.148	0.077

Development coefficient (a) represents the growth pattern and trend of the sequence, whereas the grey influence quantity captures the change dynamics within the sequence. The posterior difference ratio serves as a measure to validate the precision of grey forecasting; if this ratio is smaller, it signifies higher accuracy in grey predictions. By analyzing the parameter table developed for the grey model, we obtain a posterior difference ratio of 0.077, which demonstrates that the model exhibits high forecasting.

Table 11. Model Fitting Results of the Grey Prediction Model

Year	Original Value	Predicted Value	Residual	Relative Error (%)
2019	171,634	171,634	0	0
2020	185,522	188,140.846	-2,618.846	1.412
2021	199,410	194,291.900	5,118.100	2.567
2022	198,192	200,644.055	-2,452.055	1.237

The table of model fitting results presents the outcomes of the grey prediction model. A smaller relative error value signifies better fitting; typically, a value below 20% indicates a satisfactory fit. The model's average relative error is 1.304%, demonstrating an effective fitting performance.

The Gray Prediction Model GM (1,1) analysis reveals that the number of unmarried individuals is projected to continue rising in the future. This trend is closely associated with the cumulative effects of increasing costs related to child-rearing. When economic burdens surpass a household's threshold for affordability, young people tend to mitigate risks by delaying marriage or reducing family size, which further exacerbates the trend toward low birth rates and an aging population.

Table 12. Forecast Results of the Grey Model

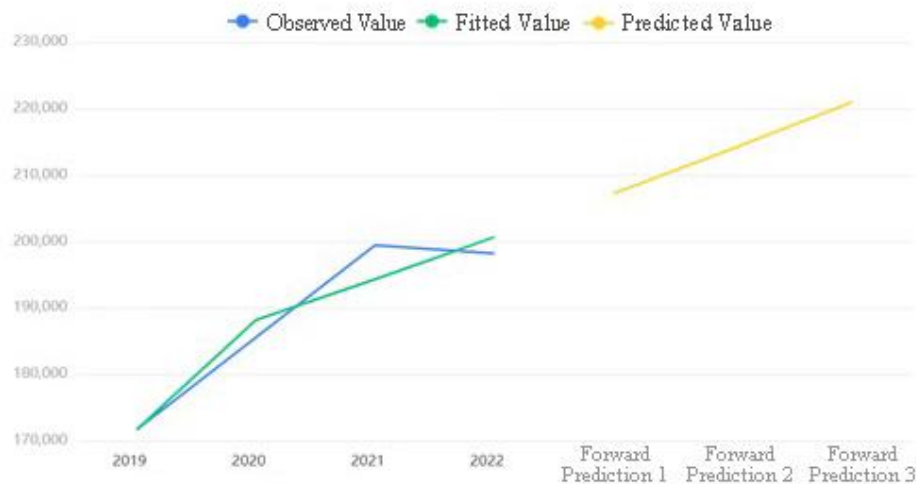| Prediction Step	Year	Predicted Value
1	2023	207,203.887
2	2024	213,978.185
3	2025	220,973.961

Figure.7 Actual Values, Fitted Values, and Forward Predictions (2019–2025)

On a positive note, China has observed stable socio-economic development, policy optimizations, and shifts in attitudes toward marriage and childbearing. These factors contributed to the halted decline and slight rebound in marriage registration numbers in 2023. This rebound reflects broader societal efforts to address challenges related to shrinking family sizes and aging populations.

However, the outlook for fertility rates remains concerning. China has experienced two consecutive years of negative population growth due to a significant decline in both the number of women of reproductive age and overall birth rates. The latter is influenced by shifting fertility attitudes, delayed marriages and childbearing, as well as the short-term impact of the COVID-19 pandemic. These factors have created a complex result of challenges for sustainable population development [6-8].

Economic constraints emerge as a significant barrier to fertility intentions, with housing costs, educational expenses, and workplace competition representing core stressors that deter young Chinese from parenthood. The prohibitive financial burden associated with raising one child, which typically ranges from

500,000 to 1,000,000 yuan (depending on the family's socioeconomic status, parents' sacrifices, and workplace flexibility), underscores the role of opportunity costs in shaping fertility decisions [9-11]. Currently, China's fertility policies are undergoing active adjustments, and various regions are enhancing their support services for fertility. However, there is still a pressing need for increased support and improved implementation of these policies.

A positive development is the rebound in the registered marriage population in 2023, which can be attributed to the pent-up demand for weddings that arose during the pandemic, as well as the influence of traditional cultural practices. Many couples who had intended to hold their weddings during the epidemic were forced to postpone or cancel their plans. As the effects of the COVID-19 epidemic have lessened, this accumulated demand for weddings is now being realized in 2023 [12-14].

Wedding expenditures continue to rise, with couples increasingly favoring "small and exquisite" wedding banquets that emphasize romance and a strong sense of ceremony. The wedding industry faces both opportunities and challenges in the future. To address these, it must embrace upscale and premium development while integrating diverse resources to offer seamless, comprehensive one-stop. Additionally, lower-tier markets are demonstrating immense consumer potential. Wedding businesses can expand their market presence by establishing wedding halls or introducing high-end consumption concepts from first-tier cities. The emphasis that newlyweds place on weddings, coupled with their demand for high-quality, affordable, and hassle-free services, has driven the formation of a tightly integrated wedding industry chain. This chain encompasses various related sectors such as automobile sales, furniture retail, and interior design. Collaborative efforts across the entire industry value chain are instrumental in elevating the overall industrial value and fostering sustainable growth within the sector.

3.2.8 Structural Equation Modeling

To conduct a thorough analysis of young people's attitudes toward marriage and childbirth, as well as their influence on fertility policies, we constructed a Structural Equation Model (SEM). This model combines factor analysis with path analysis, enabling us to simultaneously examine the relationships between significant observed variables and latent variables—factors that are challenging to directly measure. It also allows for the evaluation of direct, indirect, and total effects.

1) Factor Selection:

Based on the validity analysis in the previous text, we have selected the following variables:

Table 13. Factor screening for structural equation modeling (SEM) analysis

Latent Factor	Item Code	Variable Name
Perception of Marital Obstacles (A)	A1	Marriage cost
	A2	Childbearing cost
	A3	Highly competitive work environment
	A4	High partner selection standards
	A5	Self-sufficient lifestyle
	A6	Parental/caregiving responsibilities
	A7	Entertainment/pet alternatives
Acceptance of Non-traditional Marriage and Love Concepts (B)	B1	Premarital cohabitation
	B2	Premarital sexual behavior

	B3	Dink (dual income, no kids)
	B4	Non-marital childbearing
	B5	Homosexual behavior
	B6	Abortion
	B7	Open relationships
Perception of Fertility Value (C)	C1	Child accompaniment as meaningful
	C2	Enhancing family well-being
	C3	Strengthening marital bonds
	C4	Sustain aspirations and anticipations
	C5	Elderly life security
Perception of Fertility Obstacles (D)	D1	Housing environment pressure
	D2	Social environment pressure
	D3	Parenting stress
	D4	Childbirth pain/risks
	D5	Lack of social care resources
	D6	Lack of family care resources
Expected Fertility Support Policies (E)	E1	Reduced housing costs
	E2	Reduced childcare costs
	E3	Reduced education costs
	E4	Reduced medical costs
	E5	Reduced employment discrimination
	E6	Guaranteed paid maternity leave
	E7	Enhanced elderly care security
	E8	Cash allowance for more children
	E9	Tax reductions for more children

2) Assumption statement:

- H1: The obstacles to marriage perceived by young people positively influence their understanding of reproductive challenges.
- H2: The perceived value of childbirth positively affects individuals' expectations regarding fertility support policies.
- H3: Acceptance of non-traditional concepts of marriage and love negatively impacts perceptions of reproductive value.
- H4: An increasingly demanding work environment intensifies the costs associated with marriage, thereby acting as a hindrance.
- H5: Rising childbirth expenses contribute to a decline in the willingness to have children.
- H6: Higher standards for choosing a romantic partner have made finding a suitable match more difficult.
- H7: In contemporary society, the ability to thrive independently diminishes the motivation to marry.
- H8: The role of entertainment or pets as substitutes for intimate relationships lessens the necessity of marriage.

- H9: Greater acceptance of non-traditional marriage and romantic behaviors has transformed traditional notions of marriage and childbirth.
- H10: The recognized positive outcomes of childbirth, such as family happiness and strengthened marital bonds, may encourage a greater willingness to have children.

The table indicates that multiple pathways are not significant, leading to a rejection of the null hypothesis and deeming these paths invalid. It can be concluded that the factors that hinder marriage do not have a direct impact on individuals' desired fertility policies. Furthermore, while the rise of non-traditional ideas about marriage and love does not directly contribute to the modern youth's apprehension toward marriage, it does exert a certain inhibiting influence on fertility. We speculate that this may primarily stem from the widespread adoption of the DINK ideology.

After several adjustments and corrections to the model, the resulting path analysis diagram is presented below:
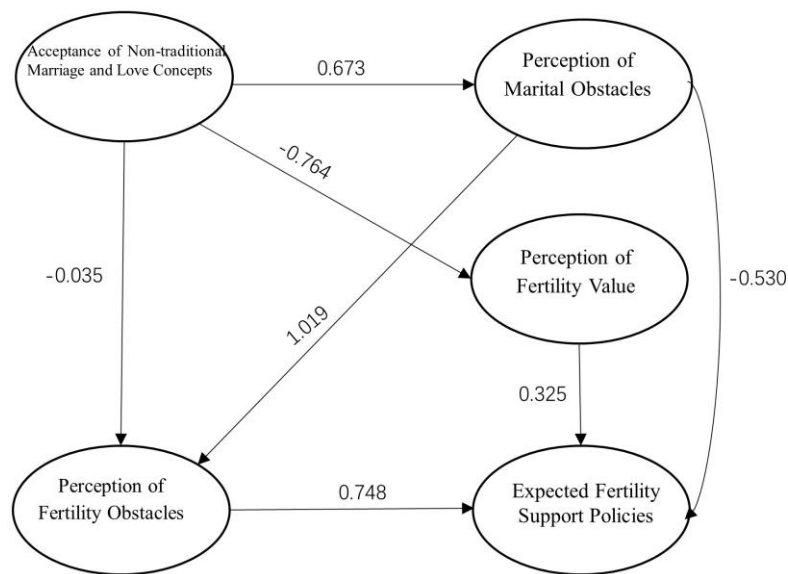

Figure.8 Influencing Factors and Pathways of Expected Fertility Support Policies (the first model fitting)

Table 14. Regression coefficients of the first model fitting in structural equation modeling (SEM)

Latent Factor	→Manifest Variable	Unstd. Coef.	Std. Coef.	SE	Z	P
Perception of Marital Obstacles	→ Expected Fertility Support Policies	-1.013	-0.530	1.776	-0.233	0.216
Perception of Fertility Value	→ Expected Fertility Support Policies	0.339	0.325	0.4	0.463	0.442
Perception of Fertility Obstacles	→ Expected Fertility Support Policies	0.686	0.748	0.271	5.251	0.034**
Perception of Marital Obstacles	→ Perception of Marital Obstacles	1.313	1.019	0.787	1.668	0.095*

Latent Factor	→Manifest Variable	Unstd. Coef.	Std. Coef.	SE	Z	P
Acceptance of Non-traditional Marriage and Love Concepts →Perception of Marital Obstacles		0.451	0.673	0.287	1.569	0.117
Acceptance of Non-traditional Marriage and Love Concepts →Perception of Fertility Obstacles		-0.032	-0.035	0.132	-0.244	0.807
Acceptance of Non-traditional Marriage and Love Concepts →Perception of Fertility Value		-0.903	-0.764	0.369	-2.451	0.014**

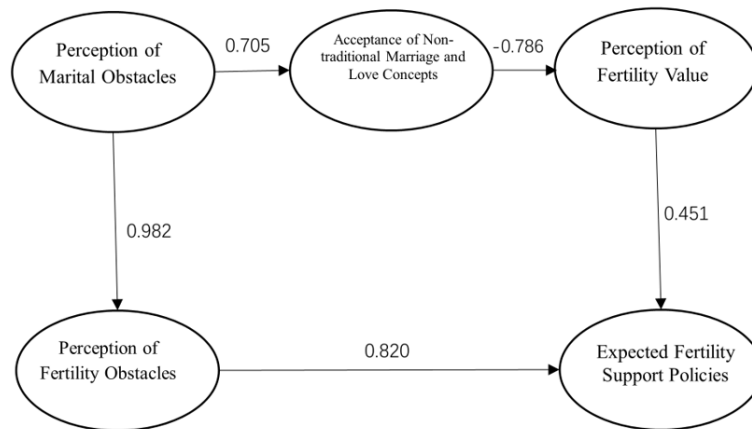Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Figure.9 Influencing Factors and Pathways of Expected Fertility Support Policies (the final model fitting)

Table 15. Regression coefficients of the final model fitting in structural equation modeling (SEM)

Latent Factor	→Manifest Variable	Unstd. Coef.	Std. Coef.	SE	Z	P
Perception of Fertility Obstacles	→Expected Fertility Support Policies	1.284	0.820	0.653	1.965	0.049**
Perception of Fertility Value	→Expected Fertility Support Policies	0.511	0.451	0.249	2.052	0.040**
Perception of Marital Obstacles	→Acceptance of Non-traditional Marriage and Love Concepts	0.462	0.705	0.193	2.388	0.017**
Acceptance of Non-traditional Marriage and Love Concepts	→Perception of Fertility Value	-0.938	-0.786	0.392	-2.393	0.017**
Perception of Marital Obstacles	→Perception of Fertility Obstacles	0.555	0.982	0.261	2.124	0.034**

Note. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

If the P-values of each path in the regression coefficient table of this model are all below 0.05, indicating statistical significance at the horizontal level, we can reject the null hypothesis. Consequently, these paths are deemed valid and warrant further analysis.

Below are the model fitting indicators for the entire structural equation model:

Table 16. Fit indices of the structural equation model (SEM)

χ²/df	P	GFI	RMSEA	RMR	CFI	NFI	NNFI
<3	>0.05	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9

| 1.47 | 0.08 | 0.913 | 0.071 | 0.036 | 0.928 | 0.919 | 0.943 |

Upon conducting the necessary testing, the model's fitting parameters demonstrated satisfactory performance against established indicators. Consequently, it can be concluded that the structural equation model exhibits a robust fit, thereby enabling effective analysis of the data.

Through structural equation modeling analysis, we find that the perceived barriers to marriage among young people do not directly impact the demand of fertility policies for individuals. Instead, these barriers indirectly influence desired fertility policies through obstacles hindering childbearing. This finding further substantiates the emerging notion that marriage does not necessarily lead to childbirth.

Why don't People have children? From the perspective of fertility theory, after experiencing the weakening of natural fertility motivation brought about by declining mortality rates, utilitarian motives for having children have also gradually faded. Instead, the cost of childbearing has become the primary consideration. Social phenomena such as the popularization of late marriage and delayed childbirth, increased choices for single or DINK lifestyles, and rising infertility issues have all further weakened the social foundation for reproduction.

Additionally, the dramatic increase in direct costs associated with childbearing has emerged as a key factor constraining fertility intentions. High housing prices, education expenses, and healthcare costs contribute to widespread concerns about being able to afford to give birth but not to raise children, housing prices have surged rapidly, with the mortgage-to-income ratio rising from 16.2% in 2004 to 57.4% by 2021. Education expenses have also climbed significantly, exacerbated by scarce childcare resources and a sharp decline in access to public kindergarten enrollment opportunities. Between 1997 and 2021, the proportion of children enrolled in public kindergartens dropped sharply from 95% to 52%.

Moreover, the growing burden of eldercare, especially under the 4-2-1 structure (four grandparents, two parents with only one child), has further squeezed young couples' willingness to have children. For women, despite high labor force participation rates, insufficient protection of employment rights means they may face career marginalization or other risks after childbirth, increasing the opportunity cost associated with reproduction. In conclusion, the weakening foundation for childbearing and the dual constraints of rising fertility costs together constitute the primary reasons for the current decline in fertility rates.

4. Suggestions for Policy Making

Although the number of marriages and births had declined for several consecutive years, the number of marriage registrations in 2023 reversed this trend and began to rise, with the wedding economy continuing to thrive. The government should seize this opportunity to innovate and refine relevant policies and measures, such as optimizing maternity and paternity leave systems, strengthening healthcare support for childbirth, alleviating the financial burden on families with children, and improving childcare services, thereby fostering a childbearing-friendly social environment. Simultaneously, despite the challenge of a shrinking working-age population, China's demographic dividend persists. The rising levels of education and the growing talent pool provide strong momentum for economic and social development. In the face of complex and evolving demographic trends, it is essential to uphold innovation, proactively address challenges, and promote the comprehensive, coordinated, and sustainable development of population and socioeconomic systems.

In summary, four primary and urgent measures are suggested as follows: (1) Cash Subsidies: a monthly cash subsidy of 1,000 yuan can be allocated for each child in two-child families and 2,000 yuan for each

child in families with three or more children, extending until the child reaches the age of 20. (2) Housing Purchase Subsidies: The implementation of subsidies is suggested via mortgage interest rebates or price discounts on housing. Specifically, a 50% rebate on mortgage interest could be offered to two-child families, while full mortgage interest rebates may be granted to families with three children. (3) Expansion of Childcare Facilities: The recommendation includes a significant increase in the enrollment rate of children aged 0-3 in childcare facilities, from the current 4% to approximately 50%. (4) Tax Incentives: It is recommended that income tax and social security contributions be reduced by 50% for two-child families, while families with three children should receive complete exemptions from these fiscal obligations [15-16].

These policy recommendations were based on the results derived from current surveys, which reveal the prevailing concerns of young individuals regarding childbirth policies. Both the survey findings and the proposals underscore that economic variables have emerged as pivotal determinants influencing childbirth decisions. Furthermore, the accessibility of childcare services is identified as a significant impediment to addressing the declining birth rates, as evidenced by the ongoing trend of "grandparents raising grandchildren."

Notably, some positive trends have arisen. The reduction in birth rates observed in 2023 has exhibited a deceleration compared to the preceding year. Survey data and hospital records pertaining to maternity registrations indicate an increase in women's willingness to conceive since the latter half of 2023, potentially contributing to the stabilization of future birth rates. In the short term, a modest rebound in birth rates is anticipated for 2024, driven by the following three factors: (1) The gradual realization of postponed childbirth plans due to the pandemic. (2) An uptick in the number of marriages, illustrated by civil affairs data revealing 5.69 million marriage registrations in the third quarter of 2023—an increase of 245,000 compared to the previous year. (3) The cultural significance of the Year of the Dragon, which traditionally correlates with a minor baby boom due to its auspicious connotations [17-18].

In summary, while challenges persist regarding declining birth rates, emerging trends indicate the possibility of future stabilization in childbirth as a result of multifaceted societal and cultural dynamics.

5. Conclusion

Under the background of China's second demographic transition, the attitudes toward marriage and childbearing among young people in Zhejiang Province are undergoing significant changes. Contemporary youth place greater emphasis on emotional and spiritual compatibility rather than traditional factors such as economic status and family background when choosing a partner. A clear distinction between dating and marriage has emerged, with the ideal age for marriage being postponed to between 26 and 30 years old. While the acceptance of premarital cohabitation and sexual relationships has increased, loyalty in romantic relationships remains highly valued. In terms of childbearing, most young people prefer smaller families and prioritize the education and quality of life for their children. High costs associated with housing, education, and healthcare have become major deterrents to childbirth.

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