Factors that Influencing Chinese Female's Marriage Intention

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Abstract. This article aims to study the factors influencing Chinese women's marriage intention, so as to put forward corresponding policy suggestions and promote the solution of marriage-related social problems. This paper applys several statistical methods to, deal with such problem. After conducting correlation analysis, unit root test and cointegration test on the data, this paper made LM test, F test and Horsman test, and determined to adopt the fixed effect model for research. This paper uses fixed effect model to study the influence of women's education level, women's wage level and GDP on Chinese women's marriage and divorce intention. The data in this paper come from China Statistical Yearbook, collecting data from 1999 to 2020 in China's provinces for research. According to the model results, this paper has two main conclusions. First, the wage level is inversely related to women's willingness to divorce. Second, the women's education level is inversely related to women's willingness to marry. The higher education level women have, the lower willingness to marry they have.

Keywords: Fixed effect model; marriage intention; influencing factors.

1. Introduction

China's marriage registration data in 2021 stood at 7.636 million couples, a record low since 1986, according to the Ministry of Civil Affairs. Meanwhile, since 2003, China's divorce rate has risen for 15 consecutive years, from 0.55 ‰ in 1987 to 3.2 ‰ in 2017. The decrease of marriage rate and the increase of divorce rate reflect that the marriage situation of Chinese people tends to be unstable and the willingness to marry is low. Furthermore, due to the traditional patriarchal concept in Chinese society, the proportion of men and women in Chinese society is unbalanced. The number of single men in China is up to 50 million in 2022, according to China's National Bureau of Statistics. A large number of single men easily lead to social problems, affecting social stability. Therefore, it is of great significance to study the factors that affect women's marriage intention and divorce intention.

Marriage is a hot topic in academia. Guo first studied the quality of Chinese marriage and pointed out that the quality of Chinese marriage showed a U-shaped trend [1]. Xia pointed out in his research that the rise of divorce rate in China will bring higher social costs [2]. Cai studied the relationship between industrialization and divorce rate [3].

Many scholars study the factors affecting Chinese marriage. On the one hand, some scholars focus on economic factors. Lu pointed out that the economic crisis led to an increase in divorce rate in Shanghai [4]. According to Zhu, China's urbanization process has reduced the marriage rate [5]. Xu pointed out that the difference in divorce rate among provinces in China is related to the difference in economic development between regions [6]. On the other hand, some scholars believe that education level is also an important factor affecting Chinese marriage. Wang pointed out that the improvement of education level in Northwest China led to the delay of the age of first marriage [7]. Liu pointed out that since the beginning of the 21st century, the decline of Chinese women's willingness to marry is due to the improvement of education level [8].

At the same time, many scholars have studied marriage from the perspective of women or realized that women play an important role in it. According to Yao, the reduction of marriage rate is conducive to the reproductive health of Chinese women [9]. Pan pointed out in his article that the patriarchal ideology leads to the imbalance of the proportion of men and women, which further reduces the marriage rate in China [10].

Inspired by these literatures, this paper aims to study the influence of women's education level and wage level on women's willingness to marry and divorce. The data in this paper come from China Statistical Yearbook, collecting panel data of 31 provinces in China (except Macao, Hong Kong, Taiwan) from 1999 to 2020 (a total of 682 samples). After F test, LM test and Hausman test, this paper chooses to establish a fixed effect model to study this problem.

2. Methodology

2.1 Variable description

In this paper, two fixed effects models are used to study the factors affecting Chinese women's marriage. The dependent variables of these two models are the number of divorced women in each province and the number of unmarried women in each province (sample survey results). The two fixed effects models in this paper use the same independent variables: female education level in each province, average wage in each province and GDP in each province. The educational level of women in each province was measured by the number of women with high school education or above (sample survey results), and the average provincial wage was measured by the provincial wage index.

2.2 Data description

The data in this paper are from China's National Statistical Yearbook. In terms of theoretical contribution, this paper studies the social problem of marriage from the perspective of women, and creatively divides marriage into two aspects: marriage intention and divorce intention. In terms of empirical contribution, this paper analyzes 682 samples of China's provinces over the past 22 years to obtain regression results, and provides reference for future research in related fields. In practice, this paper obtains the factors that affect women's willingness to marry and divorce through the fixed effect model, and provides policy recommendations for the government in related fields. In order to make each variable more stable, this paper takes the logarithm of each variable.

Table 1 reports the main variables involved in the empirical research and the results of descriptive statistical analysis. The data in this paper include a total of 682 samples from 31 provinces in China (excluding Hong Kong, Macao and Taiwan) from 1999 to 2020. It can be seen that China's provincial GDP, wage levels, women's education level and women's marital status gap. Among them, the gap of female education level among provinces in China is the largest.

Table 1. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
lndivorce	682	4.920	0.838	1.946	6.550
lnnomarry	682	7.553	0.831	5.069	10.667
lnsalary	682	4.701	0.042	4.526	5.059
lneducation	682	7.317	1.023	1.099	8.887
lngdp	682	8.964	1.286	4.660	11.615

Table 2 reports the results of correlation analysis of variables involved in the empirical study of the two fixed effects models. It can be seen that there is a strong correlation between female education level and provincial GDP. There is a strong correlation between provincial wage level and provincial GDP. Strong correlation between variables may lead to multicollinearity affecting the credibility of regression results. Therefore, this paper conducted the collinearity test on the basis of correlation test.

Table 2. Correlation analysis.

	lneducation	lngdp	lnsalary
lneducation	1.000	-	-
lngdp	0.723	1.000	-
lnsalary	0.061	0.301	1.000

Table 3 reports the results of VIF collinearity test analysis for each variable involved in the empirical study of the two fixed-effect models in this paper. It can be seen that the average VIF value of the main variables is 2.10, and there is no serious multicollinearity problem. Therefore, these three independent variables can be used for regression analysis.

Table 3. Collinearity test.

Variable	VIF	1/VIF
lneducation	2.100	0.477
lngdp	2.100	0.477
Mean VIF	2.100	

2.3 Method

This paper applys several statistical methods to, deal with such problem. After conducting correlation analysis, unit root test and cointegration test on the data, this paper made LM test, F test and Horsman test, and determined to adopt the fixed effect model for research. Because the time span of panel data in this paper (20 years) is less than the number of provinces (31 provinces), this paper chooses to use HT test for unit root test. Table4 reports the unit root test analysis of the variables involved in this paper. It can be concluded that the number of unmarried women, the number of divorced women, the educational level of women and the level of wages are stable in each province (p value < 0.1). Therefore, the variables in this paper did not pass the unit root test.

Table 4. Unit root test.

variable	Statistic	z	p-value	conclusion
lndivorce	0.402	-8.144	0	stable
lnnomarry	0.022	19.000	0	stable
lngdp	0.903	6.155	1	unstable
lnsalary	0.268	11.968	0	stable
lneducation	0.445	-6.936	0	stable

Given the inevitability of provincial GDP changes over time, differentiating it eliminates this tendency. This article takes the Kao test data of two fixed effect model respectively, results as shown in table 5 and 6. It can be seen that the variables involved in the two fixed effect models in this paper have a long-term cointegration relationship, and regression analysis can be continued.

Table 5. Cointegration test for model 1.

Variable	Statistic	p-value
Modified Phillips-Perron t	2.678	0.004
Phillips-Perron t	-4.23	0.000
Augmented Dickey-Fuller t	-4.776	0.000

Table 6. Cointegration test for model 2.

Variable	Statistic	p-value
Modified Phillips-Perron t	3.520	0.000
Phillips-Perron t	-3.548	0.000
Augmented Dickey-Fuller t	-5.105	0.000

In this paper, as table 7 and 8 showing, F test, LM test and Hausman test are used to test the panel data of the two models, and the results are shown in Table6. F test (p value < 0.01) strongly rejects the null hypothesis, so the fixed effect model is superior to the mixed OLS model. LM test (p value

< 0.01), strongly reject the null hypothesis, so the mixed effect model is better than the mixed OLS model. Hausman test p value < 0.05, reject the null hypothesis, so the fixed effect model is selected.

Table 7. F test, LM test, Hausman test for model 1.

Test way	Statisitic magnitude	p-valure
F test	616.946	0.000
LM test	1868.290	0.000
Hausman test	9.530	0.023

Table 8. F test, LM test, Hausman test for model 2.

Test way	Statisitic magnitude	p-valure
F test	34.11	0.000
LM test	162.98	0.000
Hausman test	41.73	0.000

Thus, this paper adopts the fixed effect models to analysis factors affecting Chinese female marriage desires. Because this paper divides the marriage desire into divorce desire for females who have married and the marriage desire for females who have not been married, there are two models here. The independent variables for model1 and model2 are female divorce rate and the rate of females who have not been married. The dependent variables are female education level, average wag end GDP. To make the fixed model regression, we could get the coefficients and the find out the affect that independent variables make on dependent variables.
This paper establishes two fixed effect models as follows:

$$Divorce_{it} = \mu_t + Education_{it} + Wage_{it} + \alpha_i + \epsilon_{it} \quad (1)$$

And

$$Nomarry_{it} = \mu_t + Education_{it} + Wage_{it} + \alpha_i + \epsilon_{it} \quad (2)$$

3. Results and discussion

Regression results for model1 (the number of female divorces) are shown in the table 9. Shows the wage levels of the provinces, and the impact of GDP on the number of female divorces in the provinces is significant (p value < 0.1). The influence of GDP (0.35) on the number of female's divorce is less than the influence of salary level (-1.164) on it. Thus, there are two conclusions that the number of female divorce and GDP is negatively correlated, while the number of female divorce and the salary level is positively correlated. As for the first one, it is consistent with the trend in China that the divorce rate keeps increasing for more than 15 years, according to Chinese Ministry of Civil Affair. With the development of industrialization, people's marriage would be inclined unstable. At the same time, Cai also pointed out that the important reason for divorce is economic pressure. While industrialization brings GDP growth, it also raises the cost of living and increases people's economic pressure. At the same time, the growth of GDP also changes people's living habits. In the 21st century, China's rapid GDP growth benefited from the third technological revolution. The popularity of the Internet has made people's lives more colorful. Therefore, people's dependence on family life is also relatively reduced. At the same time, the popularity of the Internet has diversified people's thoughts and changed the traditional concept of marriage: when the marriage relationship is not harmonious, young people are more inclined to divorce directly than the old generation's mutual tolerance. Furthermore, in traditional China, men dominated in marriage, which means that few women asked for divorce. With the development of Chinese economy, the female consciousness of Chinese women

is awakening. In the face of unbearable contradictions in marriage, more and more Chinese women choose to use divorce to solve the problem. As for the second conclusion, it seems contradictory to the first conclusion. However, while GDP is a more macro indicator, wage levels have a more significant impact on people's lives. Families with higher living standards are more stable and less likely to divorce. Higher wages mean a higher standard of living. There is another reason. Because of the complexity of the division of property, many conflicted high-income families tend to tolerate each other rather than divorce directly. Therefore, we can conclude that the wage level is negatively correlated with women's willingness to divorce.

Table 9. Regression result of model 1.

lndivorce	Coef	p-value
lnsalary	-1.164	0
lneducation	0.038	0.271
lngdp	0.35	0

Regression results for model2 (the number of unmarried women) are shown in the table 10. It can be seen that the education level of women in each province has a significant impact on the number of unmarried women in each province (p value < 0.1). The coefficient for female education is positive, which means that the higher the education level of women, the lower the willingness to marry. This result is consistent with the earlier research and the public's intuition. The average age of marriage in northwestern China has been pushed back due to the higher education level of women. The improvement of Chinese women's educational level is directly related to the phenomenon of Chinese women being single. In traditional Chinese society, female can't make volition about their marriage because it should be decided by their parents and they can't resist. After they marry, ancient Chinese women were also completely at a disadvantage in marriage, namely being dominated by their husbands. In ancient Chinese society, the inequity that female encounters is because female is born to have lower social status than male. In contrast, modern society promotes equality between men and women. On this basis, the education level of Chinese women has improved. When a woman has high education level, which means that she can subsist by herself and doesn't depend on man, she is more likely to find a sole partner instead of a lover. Thus, because the high educational woman could fare well even without man, she tends to keep alone if she can't find her sole partner. In addition, we found that wage levels and GDP did not have a significant impact on women's willingness to marry. This means that even though women's wages have increased in modern Chinese society, which means that more and more women are economically independent, women are not inclined to not marry. This seems inconsistent with people's intuition. In modern Chinese society, feminist movement rose and advocated women celibacy movement. Indeed, when women become economically independent, marriage seems to become unnecessary. In particular, even if women's status has been greatly improved in modern China, women are still in a relatively weak position in marriage. For instance, modern Chinese women still bear most of the housework in the family. Furthermore, after a woman gives birth to a child, most women are required to give up their careers on the basis of family. Therefore, Women's willingness to marry would be greatly reduced due to economic independence. But the results of this study show that this is not the case. Combined with the previous conclusions, we can draw a new conclusion: modern Chinese women's marriage intention is more affected by the spiritual level rather than the material level.

Table 10. Regression result of model 2.

lnnomarry	Coef	p-value
lnsalary	0.326	0.255
lneducation	0.488	0
lngdp	-0.013	0.35

Therefore, there is a conclusion that salary level, education level, and GDP can make different influences on female divorce and marriage desire respectively. Economic factor plays an important role in the married women decision making about divorce. However, spirit factor seems to have more influencing on female's marriage desire.

4. Conclusion

This paper applys several statistical methods to, deal with such problem. After conducting correlation analysis, unit root test and cointegration test on the data, this paper made LM test, F test and Horsman test, and determined to adopt the fixed effect model for research. Based on the two fixed-effect models, this paper draws the following conclusions: (1) there is an inverse correlation between the number of divorces and the wage level of Chinese women. The higher the wage level, the lower the divorce intention of Chinese women. (2) There is a positive correlation between the number of unmarried Chinese women and their education level. Women with higher education level have lower intention to marry. (3) There is no significant correlation between Chinese women's divorce intention and their education level, and there is no significant correlation between Chinese women's marriage intention and their salary level. (4) Women's education level, salary level, GDP have different effects on women's willingness to marry and divorce.

Promoting the stability of marriage rate and divorce rate is conducive to maintaining social stability. Therefore, based on the empirical analysis results, this paper gives the following suggestions: (1) promote economic development, promote the improvement of social distribution system, and improve people's wage level. (2) Set up marriage cooling off period, divorce cooling off period, in order to reduce the possibility of impulsive divorce. (3) This paper will promote a social atmosphere of equality between men and women and raise women's educational level.

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