The Regional Difference of Women's Age at First Marriage and Pregnancy

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Abstract: This paper researches the regional difference in women's age at first marriage and pregnancy, by examining women's median age at first marriage and women's mean age at first pregnancy. Women and men are divided into four education-level groups to compare the gender gap in each state and indicate the regional pattern. The average difference between women and men is also calculated. Finally, the measures of age, education level, and gender gap are considered together to check the regional overlap. Local birth policies and political stances are also taken into account to understand the situation. The result shows that women living in central states get married and are pregnant at a younger age, and the educational attainment of the population in this region is concentrated in high school and college degrees. The research on the regional difference in birth age and education levels not only helps to improve women's rights and public health, but also provides an angle to understand the effect of policies.

Keywords: age at first marriage, regional difference, gender gap in education

1. Introduction

The factors that affect women's age at first marriage and pregnancy are always complex and changeable. This is not only a sociology subject, but also related to public health and the human population. In many regions, pregnancy has some correlation with marriage. Most previous research can be concluded into three aspects to explain women's marriage and birth choices: community characters, education level, and birth policies. First, the community characters play an important part in shaping women's concepts about marriage and birth. In many regions, pregnancy has some correlation with marriage. For example, in a society where people consider pregnancy before marriage as abnormal, there is a strong correlation between women's first marriage and their first pregnancy [1]. In order to avoid being unwed mothers and bearing too much parenting pressure, some women under unplanned pregnancy would choose to give birth. This conformity can also be explained in a moral aspect, which means a kind of stigma about premarital pregnancy and abortion in communities may force pregnant women to be mothers. The community can be a political or religious environment, and research shows strong religious or political identities often linked to high levels of stigma. So, it's not surprising that this community-level stigma may determine whether people seek reproductive health care and further interfere with their pregnancy outcomes [2]. In fact, such moral

considerations not only lead to unwilling pregnancy, but also have an impact on women's educational attainment.

The research has shown women who receive abortion procedures are concentrated in their 20s and are unmarried. The common reasons for women under this age interval to choose abortion are that having a baby would interfere with their education process and career prospects. Such concern is understandable, because after abortion women are less likely to marry and more likely to earn a college degree [3]. From a traditional perspective, there is a correlation between marriage, first pregnancy age, and education. On one side, "the association of marriage with first pregnancy age worked independently of education". On the other side, "the more education women have, the more likely they are to marry at a later age" [1]. Research in 2021 shows that women's median age at first marriage increases with their education level, which means women with doctorate degrees have the highest median first marriage age [4]. In addition to the community environment and individual decisions, policies in recent years have provided stricter limits, weakening some subjective initiatives.

In decades, birth and abortion policies in states change a lot. Since 1973, Roe v. Wade has impacted federal abortion policy for more than 30 years, which made abortion from a dangerous secret procedure to a normal medical treatment. But in 2022, Dobbs V. Jackson Women's Health Organization overturned the previous policy, and abortion is banned in more than 20 states. The outcome of this decision is still not clear at this time, but many researchers predict that the abortion rate will decrease and an increase in births will occur [5]. Although the law states that abortion is still possible in early pregnancy, there are three realities making abortion much more difficult to realize. First, the "federal heartbeat" jurisdiction set a strict time limit. Because of menstrual irregularity, many women could not know they are pregnant in time, which means the time from the recent menstrual period to the current date is highly likely over 6 weeks. With little time to arrange for a legal abortion process, the result is they must carry the pregnancy to term [6]. The second reason is the review of abortion requests is strict. Researchers estimated there are more than 4000 US women are denied having an abortion each year, and 48% of them will not seek abortion again even though 55% of women giving up abortion don't want to be mothers [7]. The third reason is financial issues. The reasons for no longer seeking an abortion are not only related to the strict but also raised from women's economic conditions. Adolescents and women who do not realize they are pregnant are the groups most likely to delay medical help, and the most common reasons for delays are the high travel burden and expensive surgery costs [7]. Most of the women live far from abortion facilities, especially in states with strict abortion restrictions, which means they have to pay the bill for abortion travel and think about the time cost. According to the study, the abortion rate in most cities will drop by more than 40%. Even in the regions at high risk of banning abortions, the abortion rates will also fall by 32.8% [5]. It is predictable that births from unwanted pregnancy may increase after the new birth policy.

These researches provided fundaments for understanding women's age at first mirage and pregnancy, but the regional difference is rarely taken into account to help explain it even though many researches mentioned that there is truly a regional difference in these related topics.

In order to protect women's rights and keep newborns' health condition, it's necessary to fully understand this regional otherness and future trend. In this paper, all these potential factors, including community environment, education level, and local birth policy, were combined to examine the relationship between women's age at first mirage and pregnancy. And the result would be used to explain the regional difference between each state. Finally, the regional difference provides a deeper aspect to examine the birth trend and pregnant women's condition.

2. Method

2.1. Data Resource

There are three kinds of data needed for this research: women's first marriage age, women's childbearing age, and local literacy rate. The Population Reference Bureau provides women's median age at first marriage between the 2015-2019 period in all states [8]. And the figure of women's median age at first marriage by educational attainment in 2020 can be found in National Center for Family & Marriage Research [4]. For data about the average age at first birth, Bowling Green State University reported top five states with women's youngest and oldest mean age of first birth [9]. The educational attainment of women and the gender education gap can be examined from the data of the Institute for Women's Policy Research [10].

2.2. Variables

According to Population Reference Bureau, in 2015-2019, the women's median age at first marriage crosses from 30.6 to 24.6 with a national median age at 28 [8]. In Table 1, all states were listed by local women's median age at first marriage in ascending order.

Table 1: The median age at first marriage (Women)(2015-2019).

Num	State	Median Age	Num	State	Median Age
1	Utah	24.6	27	Maine	27.8
2	Idaho	25.4	28	Minnesota	27.8
3	Arkansas	25.7	29	Nevada	27.8
4	Wyoming	25.7	30	Virginia	27.8
5	Oklahoma	25.9	31	Wisconsin	27.8
6	North Dakota	26	32	Louisiana	27.9
7	Kansas	26.1	33	Ohio	27.9
8	Alaska	26.4	34	Oregon	27.9
9	Kentucky	26.4	35	South Carolina	28
10	Montana	26.4	36	UNITED STATES	28
11	Nebraska	26.4	37	Michigan	28.1
12	South Dakota	26.4	38	Hawaii	28.4
13	Iowa	26.6	39	Vermont	28.4
14	Alabama	26.7	40	New Hampshire	28.7
15	West Virginia	26.7	41	Pennsylvania	28.7
16	Mississippi	26.9	42	Florida	28.9
17	Missouri	26.9	43	Illinois	28.9
18	Tennessee	26.9	44	California	29
19	Indiana	27	45	Delaware	29
20	Texas	27	46	Maryland	29.1
21	Washington	27.3	47	New Jersey	29.3
22	North Carolina	27.6	48	Connecticut	29.5
23	Colorado	27.7	49	New York	29.7

Table 1: (contituned).

24	Georgia	27.7	50	Rhode Island	29.7
25	New Mexico	27.7	51	Massachusetts	29.9
26	Arizona	27.8	52	District of Columbia	30.6

In 2017, Women's mean age at first birth in the United States is 26.8, which is lower than the mean age at first marriage. The top five states with the youngest mean age are Mississippi at 24.1, Arkansas at 24.3, Oklahoma at 24.7, New Mexico at 24.8, and West Virginia at 24.9 [9].

Besides, according to Institute for Women's Policy Research, the education level was divided into four groups: less than a high school diploma, high school diploma or the equivalent only, some college or an associate's degree, and bachelor's degree or higher [10].

Table 2 shows the group of people with less than a high school diploma. The percentage of women and men with this education level is listed below. The table is in descending order based on the difference between men and women.

Table 2: Less than a High School Diploma.

Num	State	W%	M%	Diff%	Num	State	W%	M%	Diff%
1	Louisiana	15.00	19.10	4.10	27	Wyoming	5.80	7.00	1.20
2	Vermont	6.50	10.60	4.10	28	Idaho	10.00	11.20	1.20
3	Montana	16.00	19.60	3.60	29	North Dakota	7.50	8.70	1.20
4	North Carolina	12.80	16.00	3.20	30	Arkansas	15.00	16.10	1.10
5	Kentucky	14.80	17.50	2.70	31	Texas	17.50	18.60	1.10
6	West Virginia	14.20	16.70	2.50	32	Connecticut	9.80	10.90	1.10
7	Maine	6.80	9.20	2.40	33	New Hampshire	6.90	8.00	1.10
8	Georgia	13.30	15.60	2.30	34	Missouri	10.50	11.50	1.00
9	Tennessee	13.30	15.60	2.30	35	Ohio	10.40	11.40	1.00
10	South Carolina	13.50	15.70	2.20	36	Rhode Island	13.20	14.20	1.00
11	Nebraska	8.50	10.50	2.00	37	Minnesota	7.30	8.20	0.90
12	Oklahoma	12.40	14.30	1.90	38	New Mexico	15.90	16.80	0.90
13	Wisconsin	8.50	10.30	1.80	39	Iowa	8.00	8.90	0.90
14	Alabama	14.30	16.00	1.70	40	Utah	7.90	8.80	0.90
15	Maryland	9.90	11.60	1.70%	41	Massachusetts	9.60	10.40	0.80
16	Kansas	8.90	10.50	1.60	42	New York	14.20	14.90	0.70
17	Virginia	10.90	12.50	1.60	43	Pennsylvania	10.50	11.20	0.70
18	Florida	12.50	14.00	1.50	44	New Jersey	11.30	12.00	0.70
19	Michigan	9.90	11.40	1.50	45	Arizona	13.80	14.50	0.70
20	Colorado	8.80	10.20	1.40	46	California	18.00	18.60	0.60
21	Illinois	11.40	12.80	1.40	47	Nevada	14.50	15.10	0.60
22	Indiana	11.70	13.10	1.40	48	Delaware	11.60	12.20	0.60

Table 2: (continued).

23	UNITED STATES	12.80	14.10	1.30	49	Montana	6.70	6.90	0.20
24	Alaska	7.70	9.00	1.30	50	South Dakota	8.60	8.80	0.20
25	Oregon	9.80	11.10	1.30	51	District of Columbia	10.00	10.10	0.10
26	Washington	9.20	10.50	1.30	52	Hawaii	9.70	8.20	-1.50

Table 3 shows the group of people with high school diploma or equivalent only. The percentage of women and men with this education level is listed below. The table is in descending order based on the difference between men and women.

Table 3: High School Diploma or Equivalent Only.

Num	State	W%	M%	Diff%	Num	State	W%	M%	Diff%
1	Alaska	22.30	30.40	8.10	27	Virginia	24.20	25.70	1.50
2	Wyoming	25.30	30.90	5.60	28	Connecticut	26.80	28.30	1.50
3	Vermont	28.30	32.90	4.60	29	Ohio	33.50	35.00	1.50
4	New Mexico	24.40	28.80	4.40	30	Michigan	28.70	30.10	1.40
5	Montana	26.00	30.10	4.10	31	Tennessee	32.50	33.80	1.30
6	Iowa	31.40	35.10	3.70	32	Kansas	26.20	27.40	1.20
7	New Hampshire	27.10	30.80	3.70	33	New York	26.30	27.50	1.20
8	Maine	33.10	36.40	3.30	34	UNITED STATES	27.30	28.50	1.20
9	Montana	28.80	31.90	3.10	35	Nebraska	26.40	27.40	1.00
10	Missouri	30.50	33.50	3.00	36	Illinois	26.70	27.60	0.90
11	Wisconsin	30.40	33.40	3.00	37	Oregon	23.90	24.80	0.90
12	Arkansas	34.30	37.30	3.00	38	Texas	24.80	25.70	0.90
13	West Virginia	38.90	41.80	2.90	39	California	20.50	21.30	0.80
14	Hawaii	25.50	28.30	2.80	40	Louisiana	33.40	34.00	0.60
15	Kentucky	31.60	34.20	2.60	41	Oklahoma	31.70	32.30	0.60
16	South Dakota	30.70	33.10	2.40	42	Rhode Island	26.10	26.70	0.60
17	Georgia	27.50	29.90	2.40	43	Washington	22.80	23.40	0.60
18	Maryland	24.90	27.20	2.30	44	District of Columbia	18.90	19.40	0.50
19	Massachusetts	24.90	27.20	2.30	45	Pennsylvania	36.10	36.60	0.50
20	Alabama	30.30	32.50	2.20	46	South Carolina	29.00	29.50	0.50
21	Minnesota	25.30	27.40	2.10	47	Nevada	28.60	28.70	0.10
22	North Carolina	25.70	27.60	1.90	48	Colorado	21.50	21.40	-0.10
23	Delaware	30.30	32.10	1.80	49	Florida	29.60	29.20	-0.40
24	North Dakota	26.30	28.10	1.80	50	New Jersey	29.20	28.80	-0.40
25	Idaho	26.70	28.30	1.60	51	Arizona	25.10	24.40	-0.70
26	Indiana	33.70	35.30	1.60	52	Utah	24.00	22.10	-1.90

Table 4 shows the group of people with some college or an associate's degree. The percentage of women and men with this education level is listed below. The table is in descending order based on the difference between men and women.

Table 4: Some College or an Associate's Degree.

Num	State	W%	M%	Diff%	Num	State	W%	M%	Diff%
1	Hawaii	32.30	33.30	1.00	27	Wisconsin	32.30	29.60	-2.70
2	New York	25.00	24.40	-0.60	28	Ohio	30.20	27.40	-2.80
3	Nevada	34.70	33.70	-1.00	29	Massachusetts	25.30	22.50	-2.80
4	Pennsylvania	24.80	23.50	-1.30	30	Delaware	28.70	25.80	-2.90
5	Illinois	29.20	27.80	-1.40	31	Michigan	34.50	31.50	-3.00
6	New Jersey	23.60	22.20	-1.40	32	Montana	37.30	34.30	-3.00
7	Arizona	34.30	32.90	-1.40	33	Oregon	36.30	33.30	-3.00
8	South Dakota	34.40	32.70	-1.70	34	Connecticut	26.10	23.10	-3.00
9	Alaska	36.80	35.10	-1.70	35	Iowa	33.90	30.80	-3.10
10	California	30.60	28.90	-1.70	36	Rhode Island	28.70	25.50	-3.20
11	Colorado	32.20	30.50	-1.70	37	Tennessee	29.40	26.10	-3.30
12	Maine	30.20	28.40	-1.80	38	South Carolina	32.00	28.60	-3.40
13	Nebraska	34.40	32.30	-2.10	39	Virginia	29.00	25.40	-3.60
14	Texas	30.20	28.10	-2.10	40	Utah	39.10	35.40	-3.70
15	Kansas	33.70	31.60	-2.10	41	Arkansas	30.00	26.20	-3.80
16	Minnesota	33.30	31.20	-2.10	42	New Hampshire	30.40	26.60	-3.80
17	Maryland	27.10	24.90	-2.20	43	Alabama	31.90	28.00	-3.90
18	North Dakota	38.00	35.80	-2.20	44	Missouri	31.90	28.00	-3.90
19	Florida	31.20	28.90	-2.30	45	New Mexico	32.70	28.80	-3.90
20	Louisiana	27.80	25.50	-2.30	46	Georgia	30.50	26.30	-4.20
21	UNITED STATES	30.30	27.90	-2.40	47	Idaho	37.90	33.50	-4.40
22	Indiana	30.60	28.00	-2.60	48	Montana	33.60	29.20	-4.40
23	District of Columbia	17.50	14.90	-2.60	49	North Carolina	33.00	28.40	-4.60
24	Oklahoma	32.00	29.40	-2.60	50	West Virginia	27.80	23.00	-4.80
25	Vermont	28.00	25.40	-2.60	51	Kentucky	30.80	25.90	-4.90
26	Washington	35.60	32.90	-2.70	52	Wyoming	42.00	34.80	-7.20

Table 5 shows the group of people with bachelor's degree or higher. The percentage of women and men with this education level is listed below. The table is in descending order based on the difference between men and women.

Table 5: Bachelor's Degree or Higher.

Num	State	W%	M%	Diff%	Num	State	W%	M%	Diff%
1	Utah	28.90	33.70	4.80	27	Kentucky	22.70	22.40	-0.30
2	District of Columbia	53.50	55.60	2.10	28	Tennessee	24.80	24.50	-0.30
3	Idaho	25.40	27.00	1.60	29	Indiana	23.90	23.50	-0.40
4	Rhode Island	32.00	33.60	1.60	30	Massachusetts	40.30	39.90	-0.40
5	Arizona	26.80	28.20	1.40	31	North Carolina	28.50	28.00	-0.50
6	New Jersey	35.80	37.10	1.30	32	Georgia	28.70	28.20	-0.50
7	Florida	26.70	27.90	1.20	33	West Virginia	19.10	18.50	-0.60
8	Oregon	30.00	30.80	0.80	34	Kansas	31.20	30.50	-0.70
9	Washington	32.40	33.20	0.80	35	North Dakota	28.20	27.40	-0.80
10	Delaware	29.30	30.00	0.70	36	Minnesota	34.00	33.20	-0.80
11	South Carolina	25.50	26.20	0.70	37	Illinois	32.70	31.80	-0.90
12	Virginia	35.80	36.40	0.60	38	Nebraska	30.70	29.80	-0.90
13	Colorado	37.50	37.90	0.40	39	New Hampshire	35.60	34.60	-1.00
14	Nevada	22.20	22.60	0.40	40	South Dakota	26.40	25.40	-1.00
15	Wyoming	26.90	27.30	0.40	41	New York	34.50	33.20	-1.30
16	California	30.90	31.20	0.30	42	Montana	30.00	28.70	-1.30
17	Connecticut	37.40	37.70	0.30	43	New Mexico	27.00	25.60	-1.40
18	Ohio	25.90	26.20	0.30	44	Iowa	26.70	25.20	-1.50
19	Texas	27.40	27.60	0.20	45	Maryland	38.10	36.40	-1.70
20	Michigan	26.90	27.00	0.10	46	Wisconsin	28.80	26.70	-2.10
21	Pennsylvania	28.60	28.70	0.10	47	Louisiana	23.80	21.50	-2.30
22	Oklahoma	24.00	24.00	0.00	48	Montana	21.60	19.20	-2.40
23	Alabama	23.50	23.40	-0.10	49	Hawaii	32.60	30.10	-2.50
24	Missouri	27.10	27.00	-0.10	50	Maine	29.90	26.00	-3.90
25	UNITED STATES	29.70	29.50	-0.20	51	Vermont	37.20	31.10	-6.10
26	Arkansas	20.70	20.50	-0.20	52	Alaska	33.20	25.50	-7.70

2.3. Method

First, the data about women's median age at first marriage and women's mean age at first birth were used to indicate the region in the United States where women are at relatively low age at their first marriage and pregnancy.

Then by analyzing each state's data about the percentage of women and men at each education level, the education gap within a state would be clear. The difference in percentages between women and men was calculated by subtracting women's percentage from men's percentage, which means the positive number indicates there is more proportion of men who get this educational attainment in the male population than the proportion of women who get the same educational attainment in the female population. Since tables were listed in descending order, the regional distribution of states based on the gender gap in education was also clear.

Besides, the data in the four groups were combined to calculate the average difference in percentages between women and men. The equation for the average difference in percentage is:

$$\text{Ave Diff} = (\text{Table2 Diff} + \text{Table3 Diff} + \text{Table4 Diff} + \text{Table5 Diff}) / 4 \qquad (1)$$

Finally, the result can be concluded by examining the regions with the measure of gender gaps in education level and the range of marriage and pregnancy ages to see if there is any regional overlap. Abortion policies [11], and political statement [12] in these regions could also help to understand the result.

3.   Results and Discussion

Women's median age at first marriage in the United States is 28 from 2015 to 2019. According to Table 1, women's median age at first marriage in thirty-five states is younger than the national median age. The top fifteen states cover the median age from 24.6 to 26.7. Among the top fifteen states, ten states are in the central region. They are Arkansas, Oklahoma, North Dakota, Kansas, Kentucky, Nebraska, South Dakota, Iowa, Alabama, and West Virginia. PRB provides a map of the median age. The lighter the color of the state, the younger age at which women start their first marriage in that state.
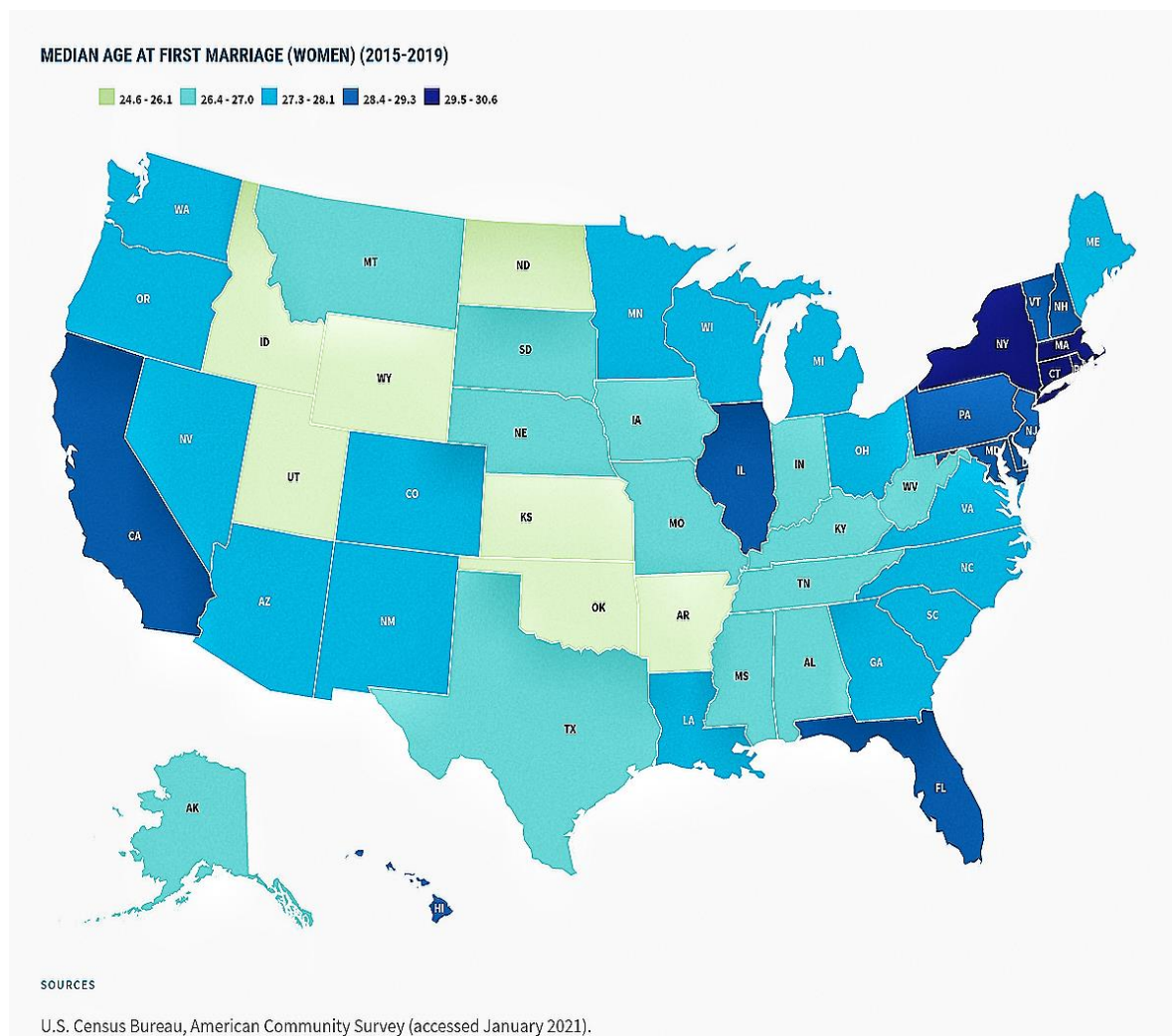

Figure 1: Map of Median Age at First Marriage (Women) [8].

The distribution of states with light color in the central area shows the shape of a vertical line. To be more specific, the line from North Dakota, Kansas, to Arkansas is almost parallel to the Mississippi River. And three states, Iowa, Kentucky, and Kansas, along the Mississippi River are in the top fifteen.

As mentioned before, the top five states with Women's youngest mean age at first birth are Mississippi, Arkansas, Oklahoma, New Mexico, and West Virginia. Except for West Virginia, all other four states are in the central area, and three of them are along the Mississippi River.

So, the map of women's median age at first marriage and the list of women's mean age at first birth indicates that women living in the central region and states along the Mississippi river usually get married and give birth at a younger age than women in other states. It is also worth noticing that the states where women are relatively young at first birth are also the region where women give their first birth at a relatively young age.

Table 2 to Table 5 are all in descending order based on the difference in percentage between women and men, which means the states with top serial numbers have a large gender gap in education level. In Table 2, 12.8% of women in the United have less than a high school diploma, and 14.1% of men in the United States have less than a high school diploma. The gender difference in this education level is 1.3%, which means there is more proportion of men under high school education level than of women nationwide. Among the states with a difference greater than 1.3%, there are eleven states are in the central area. Besides, in five of these eleven states, the proportion of women with less than a high school diploma is higher than the national average. In six of these eleven states, the proportion of men with less than a high school diploma is higher than the national average.

Table 3 shows that in the United States, 28.5% of man has high school diplomas or equivalent but only 27.3% of women reach the same education level, which causes a difference of 1.2%. Fifteen states among the total of twenty-one central states have a difference higher than the national difference of 1.2%. In other words, two-thirds of states where the gender gap in education level is above the national average are in the central of Unites States. However, what is interesting is almost all of the central states have a proportion of both women and men with high school diplomas higher than the national level. This feature indicates that compared to the situation in other states, people in the central area are more concentrated in high school education level, and in the meantime gender gap in this region is relatively large.

Table 6: The Average Difference.

Num	State	Ave Diff	Num	State	Ave Diff
1	Montana	0.0085	27	California	0
2	Delaware	0.0005	28	Florida	0
3	New Jersey	0.0005	29	Ohio	0
4	Nevada	0.00025	30	Pennsylvania	0
5	Texas	0.00025	31	Wyoming	0
6	Virginia	0.00025	32	Colorado	-3.47E-18
7	District of Columbia	0.00025	33	Idaho	-3.47E-18
8	Kentucky	0.00025	34	Indiana	-3.47E-18
9	Utah	0.00025	35	Kansas	-3.47E-18
10	Arkansas	0.00025	36	New Hampshire	-3.47E-18
11	Minnesota	0.00025	37	Georgia	-6.94E-18
12	Louisiana	0.00025	38	Maine	-6.94E-18

Table 6: (continued).

13	Maryland	0.00025	39	South Carolina	-6.94E-18
14	Missouri	1.39E-17	40	West Virginia	-6.94E-18
15	New York	1.39E-17	41	Alaska	-1.04E-17
16	Illinois	1.04E-17	42	New Mexico	-1.39E-17
17	Michigan	1.04E-17	43	Iowa	-1.73E-17
18	North Dakota	1.04E-17	44	Arizona	-2.08E-17
19	Oregon	1.04E-17	45	Alabama	-0.00025
20	Washington	1.04E-17	46	South Dakota	-0.00025
21	Nebraska	6.94E-18	47	Massachusetts	-0.00025
22	North Carolina	6.94E-18	48	Oklahoma	-0.00025
23	Rhode Island	6.94E-18	49	Connecticut	-0.00025
24	Tennessee	6.94E-18	50	UNITED STATES	-0.00025
25	Wisconsin	6.94E-18	51	Hawaii	-0.0005
26	Vermont	3.47E-18	52	Montana	-0.00875

The proportion of people with a college or an associate's degree is listed in Table 4. In the United States, 30.3% of women reach this educational attainment, which is more than the data of 27.9% in the male population. The difference in percentage is -2.4%. There are seven central states with a gender gap larger than the national level. However, four states of them have a female proportion in this education level higher than 30.3% and five states of them have a male proportion in this education level higher than 27.9%. After expanding the examination to all twenty-one central states, twelve of them have a proportion of women and men with college degrees higher than the national level, which means the population in central states is more concentrated in this educational attainment than in other states.

Table 5 is about people with bachelor's degrees or higher. There are 29.5% of men and 29.7% of women in the United States reaching this level. The national difference in percentage is -0.2%, which means in the United States there is more proportion of women with bachelor's degrees or higher than of men. However, there are still seven states in the central area with a difference higher or equal to the national average difference. Significantly, all these states have a proportion of the population with bachelor's degrees, no matter women or men, lower than the national level. After expanding the examination to twenty-one central states, except Kansas, Minnesota, and Illinois, all other central states stay below the national proportion of the population with this education level.

By utilizing the data about the gender gap in four tables, the average difference in each state can be calculated. The larger average difference indicates a less percentage of women getting educated than men in each education level. The result of the average difference is shown in Table 6 in descending order.

According to Table 6, eleven states in the central region get a positive difference value, which means in each education level, on average, there is more proportion of men getting the educational attainment in the male population than the proportion of women getting this educational attainment in the female population.

In general, most of women are concentrated in the groups with college degrees and bachelor's degrees. Most of men are concentrated in the groups with high school diplomas and bachelor's degrees. Whereas in central states, both women and men are concentrated in the education level at high school and college, and the gender gap is relatively large.

There is not enough evidence here to conclude a causal relationship exists between the age at first marriage or pregnancy and the proportion of people with certain education levels, but the region with lower women's age at first marriage and pregnancy truly has some common features about the gender gap in educational attainment. To be more specific, the women in the central region start their first marriage and pregnancy at a younger age than in other areas, and the education level in many central states is concentrated in high school and college, which is lower than the national education level distribution at college and bachelor's degrees, companying with a large gender gap.

Besides, the local preference for birth policies and political statement in these areas may also help to understand this situation. The states with conservative abortion policies, which ban most abortions, are concentrated in the central-south region, especially along the lower Mississippi River. This is also the region where women start their first marriage and pregnancy relative early. Meanwhile, the light color line, indicating a relatively young age at first marriage and pregnancy, from North Dakota to Taxes in Figure 1, covers the traditional republican states.

4.   Conclusion

Women in the central region and along the Mississippi River usually get married and pregnant at an earlier age than women in other states. These regions cover traditional republican states, and the region along the lower Mississippi River is also the area where most abortions are banned under strict birth policies. The possible reasons can be related to the social atmosphere and legal restrictions, which are supported by previous research and the regional distribution of the ruling party.

In the United States, most of women are concentrated in the education level of college and bachelor's degrees, and most of men are concentrated in the education level of high school and bachelor's degrees. Whereas, in the central area most of the population is concentrated in high school and college degrees. The gender gap in educational attainment is also larger than the national average. Since the regional distribution of the national education level overlaps the regional distribution of age groups in marriage and pregnancy, it is possible that there is some relation between education and age at marriage.

Generally, the result shows that women living in central states get married and are pregnant at a younger age, and the educational attainment of the population in these regions with a large gender gap is concentrated in high school and college degrees, which is lower than the national average level. More studies are needed.

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