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Women's Increased Higher Education and the Declining Fertility Rate in Japan

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Abstract It is often asserted that the declining fertility rate in Japan is closely associated with the increasing number of women who receive a higher education. This study investigates that relationship from the theoretical perspective of social stratification. Specifically, I incorporate the outlook of social stratification with demographic approaches by analyzing the decline in fertility in relation to increasing levels of educational attainment. The discussion is divided into two major parts. The first part considers the marital and reproductive behavior associated with family background, educational credentials, and first job as social stratification variables. The second part takes up changes in values as a consequence of increased education and examines the relationship between views on the sexual division of labor and men's participation in housework. One of the most important findings of this study is the effect of age on fertility. Whereas we have confirmed that educational background is of great importance in reaching the life stage of marriage, the decision of whether to give birth or not, which is directly reflected in the declining birthrate, is strongly influenced by age at marriage. Moreover, although it has been proposed that men's participation in housework be promoted to confront the declining birthrate, it appears that the crucial issue of involvement in child rearing is more strongly associated with age than with either values or education. It can be argued that the presence of a tightly and hierarchically ordered timetable based on age is weakening the influence of socioeconomic factors such as education and work in Japan.

1. Introduction

In recent years a feeling of crisis has been produced by the continuous decline in Japan's fertility rate. One of the main reasons offered for this decline has been the postponement of marriage among young people. Specifically, it has been suggested that obtaining a higher education has led young women to remain unmarried in their twenties (NIPSSR 1998a). Moreover, it has often been argued that the declining fertility rate is closely associated with the increase in women with a higher education (Osawa 1998). M. Atoh (1997), for example, explains

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that the growth of higher education after the 1970s resulted in increased opportunities for women to work outside of the home, especially in professional jobs, along with a change in social values and contributed to the increase in unmarried singles in their twenties. C. Ueno (1998), however, denies the direct relationship between increased higher education and the postponement of marriage, suggesting that female graduates of junior colleges or universities do not necessarily pursue a career (p. 48). Nevertheless, the higher educational attainment among women is frequently believed to be a key factor in Japan's declining fertility. What is the relationship between women's increased education and fertility?

My main concern in this study has been to investigate the relationship between the growth of women with a higher education and the decline in the fertility rate from the theoretical perspective of social stratification. Specifically, I have incorporated the outlook of social stratification with demographic approaches by examining the decline in fertility in relation to increasing levels of educational attainment. Instead of treating this decline as an issue affecting women in general, I will analyze it as it relates to the increasing number of women who have a higher education, i.e., the problem of change in the distribution of social attributes. In considering the influence of higher education on reproductive behavior, it is necessary to closely investigate the question of whether higher education has a direct effect on fertility or whether it is an indirect effect of other socioeconomic parameters, such as social class or work status. One can further ask whether, rather than educational background itself, the influence of one's family background is a key factor, since people with a higher socioeconomic standing will more easily attain higher levels of education than those who do not enjoy this advantage. Finally, there is the question of whether differences in occupational status achieved through higher education (e.g., professional work versus unskilled manual labor) influence reproductive behavior and whether educational attainment has, via work, an indirect effect on reproductive behavior.

In addressing these questions, I examined in detail the influence of women's educational attainment on their reproductive behavior after completing their education. This study is divided into two major parts. The first part discusses marital and reproductive behavior associated with family background, educational credentials, and first occupation as social stratification variables. The second part takes up changes in values as one of the consequences of increasing educational attainment and considers the relationship between views on the sexual division of labor and men's participation in housework.

Before beginning the main analysis, let us take a look at the time-series changes of women's rate of advancement to senior high school, junior college, and university, and the total rate of fertility with a macro perspective (Figure 1). Enrollment of women in senior high school increased dramatically in the 1960s,

and by the end of that decade it even exceeded the rate for men by one point; from 1975, the advancement rate surpassed 90 percent and gradually rose to 97 percent by 1997. By the late 1990s, then, almost all young women entered senior high school after completing their compulsory education (junior high school). At the university level, the rate of women's enrollment almost doubled between 1970 and 1975 (from 6.5 % to 12.5 %) and continued to increase slowly; between 1993 and 1997 the rate increased by 7 points. Between 1965 and 1975 the rate of enrollment in junior colleges, which constituted an important part of women's higher education in Japan, tripled (from 6.7 % to 19.9 %), widening the difference between the rates of advancement to junior colleges and universities—in 1975, 19.9 percent versus 12.5 percent. Later, enrollment increased in the form of a gentle curve. By 1996, however, the rate of advancement to universities surpassed that to junior colleges; in 1997, enrollment in universities reached 26.0 percent, as opposed to 22.9 percent in junior colleges. In this way, women's attainment of a higher education increased rapidly between the late 1960s and early 1970s, and since the 1990s there has been a remarkable increase in advancement to a university.

Throughout this period Japan experienced a sharp decline in the total rate of fertility. After a sudden downswing in the early 1950s, the birthrate continuously declined until the mid-1980s, when it began to drop rapidly, and by 1997 it fell to 1.39 (NIPSSR 1998a). Since the latter part of the 1980s, the birthrate has been declining specifically in inverse proportion to the increase of women's

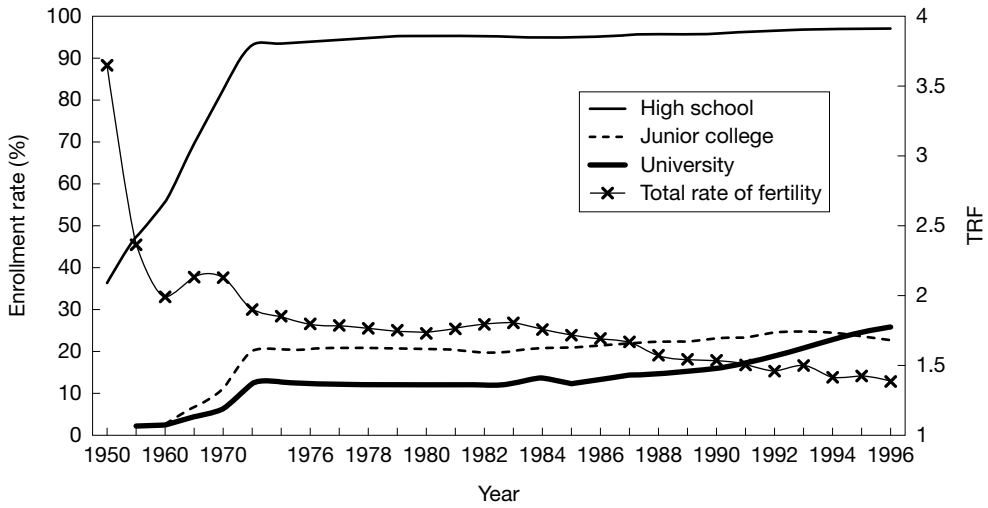

Figure 1 Trends in women's school enrollment and the total rate of fertility, 1950–1996

advancement to a university. In light of these findings, it is plausible to suggest that there is a relationship between the increase in women's access to a higher education and the decrease in the fertility rate.

2. Data and Variables

This analysis is based on data from the 1995 Social Stratification and Mobility (SSM) survey.[1] Although the survey was not designed primarily to constructed to make a demographic analysis, it has the advantage of including high-quality variables on social stratification. For this reason, the survey data enable us to consider the decline in the fertility rate within the framework of social stratification.[2] The SSM survey consists of a three-part questionnaire. The first half of this discussion analyzes mainly part A, which provides the variables on work history; the second half examines the sexual division of labor based on information supplied in part B. In this study, family background which is derived from the father's primary work, the respondent's first job, and the spouse's job at the time of marriage are included as stratification variables and are operationalized according to the EGP category (Erikson, Goldthorpe, and Portocarrero 1979). The EGP category is a comprehensive indicator of social status, as it takes into account not only the type of occupation but also employment status, firm size, and managerial status. It consists of six categories of work: (1) professional and managerial, (2) nonmanual, (3) self-employed, (4) agriculture (including self-employed and family workers), (5) skilled manual, and (6) semi-skilled and non-skilled manual.

Educational qualifications are classified into three categories: university and junior college graduates, senior high school graduates, and junior high school graduates. In the 1995 SSM data, the proportion of female university graduates was no more than a solid third, while graduates of junior colleges constituted 61 percent of women with a higher education. Therefore, of the women considered in this study, a majority of those in the first category were junior college graduates.

To examine the time-series change in the number of women with a higher education and the declining birthrate, I have created four categories of age cohorts and two categories of marital cohorts. The four age cohorts consist of women born between (1) 1925 and 1935, (2) 1936 and 1945, (3) 1946 and 1959, and (4) 1960 and 1975; the two marital cohorts comprise women who married before 1970 and women who married after 1971.

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[1] I received permission from the SSM Survey Committee to use the 1995 SSM data. On this occasion, I would like to express my gratitude to the committee.

[2] The data on marriage reflect marital status at the time of the SSM survey—i.e., present marriage, which does not necessarily mean first marriage.

Finally, to account for the time when educational credentials were obtained, I have created three cohorts including women who graduated between (1) 1940 and 1960, (2) 1961 and 1975, and (3) 1976 and 1995.

3. Analysis

3.1. Marriage and Education

In Japan, it is rare for teenagers to give birth, and births outside of marriage constitute less than 10 percent of all births. The increase in births outside of marriage among younger women can be related to a rise in cohabitation, which is still relatively uncommon in Japan. In fact, the findings of the 11th Japanese National Fertility Survey in 1997 indicate that among singles, only 4.6 percent of women indicated that they had cohabited before; although this constitutes a rapid increase from a decade earlier, cohabitation clearly remains unusual in Japan (NIPSSR 1998b). In addition, when viewed in terms of attitudes, marriage and children are considered as closely connected, as 78 percent of men and 72 percent of women agreed that "one should have children once married" (NIPSSR 1998b, fig. IV). Therefore, since the rate of cohabitation and the proportion of children born outside of marriage have been extremely low (Iwasawa 1998), it is possible to suggest that trends in birthrates and marriage are closely related in Japan. In exploring this relationship, I will first examine the timing of marriage, then the period between obtaining educational credentials and marriage.

Table 1 shows the timing of marriage by educational credentials for the different age cohorts. When viewed by education, the average marriage age increases with higher educational attainment, and this difference is statistically significant. Although not shown in the table, the average marriage age by educational background was 25.4 for university graduates, 24.2 for senior high school graduates, and 23.7 for junior high school graduates, indicating a 1.2-point difference in marriage age between university and senior high school graduates. The difference in the average marriage age of the age cohorts by educational level is statistically significant at the .05 level; nevertheless, the data show no clear trend toward an increase in the marriage age. The main reason for this is that this analysis captures only women who were married at the time of the survey; the cases of those who had not yet been married (but might marry at some point) are not included. This factor must be considered in interpreting the results of a survey made at a given point in time. The lower half of the table, which gives the results of the multivariate analysis of variance, indicates that there are differences between educational levels and cohorts, yet significant interaction between the

Table 1 Average age at marriage, by education and age cohort, 1925–1975

	Age Cohort	Mean	S.D.	CRV	N
University graduates	1925–35	25.63	2.22	0.09	70
	1936–45	25.36	2.78	0.11	107
	1946–59	24.96	2.75	0.11	22
	1960–75	26.29	5.25	0.20	7
High school graduates	1925–35	23.52	2.60	0.11	140
	1936–45	24.26	3.71	0.15	302
	1946–59	24.24	3.75	0.15	151
	1960–75	24.62	4.28	0.17	106
Junior high school graduates	1925–35	19.57	3.16	0.16	7
	1936–45	23.39	4.61	0.20	61
	1946–59	23.99	3.67	0.15	121
	1960–75	23.71	3.22	0.14	139

MANOVA	F	d.f.	sig.
Education	14.26	2	0.000
Cohort	3.42	3	0.017
Education × cohort	1.99	6	0.064

Key: S.D. = Standard deviation
CRV = Coefficient of relative variation
MANOVA = Multivariate analysis of variance

two cannot be identified, and a trend toward a higher marriage age only among women with a particular educational background cannot be found.

Now, let us look at the period between obtaining the educational credentials and getting married. It is important to note that a trend toward later marriage means not only that women marry at an older age, but also that the interval between the time they complete their education and marry is longer. Table 2 shows the average time between education and marriage for the different age cohorts. Here we see that the time until marriage becomes shorter the higher the educational level and that this difference is significant. The changes for the different marital cohorts indicate a lengthening of the time until marriage at all educational levels; this difference is also significant (see the results of the multivariate analysis of variance in the lower half of Table 2). However, there was no significant effect of interaction between education and marital cohorts, which means that regardless of educational level, there was a uniform trend toward the lengthening of the time until marriage. Although the time until marriage generally became longer, in the case of women with higher educational credentials, the period of school attendance was longer, yet the period between graduation and marriage was actually shorter than in the case of those with less education. That is, the time until marriage for women with a higher education considered in proportion to their period of school attendance was not longer

Table 2 Length of period between completion of education and marriage, by marital cohort

	Marital Cohort	Mean	S.D.	CRV	N
University graduates	Before 1970	2.52	2.35	0.93	25
	After 1971	3.81	2.56	0.67	172
High school graduates	Before 1970	5.53	2.91	0.53	282
	After 1971	6.62	3.97	0.60	415
Junior high school graduates	Before 1970	8.36	2.89	0.35	269
	After 1971	10.05	6.06	0.60	59

MANOVA	F	d.f.	sig.
Education	104.90	2	0.000
Marital cohort	19.17	1	0.000
Education × marital cohort	0.56	2	0.570

Key: S.D. = Standard deviation
CRV = Coefficient of relative variation
MANOVA = Multivariate analysis of variance

than in the case of those with lower educational levels.

Let us now turn to the rate of transition to marriage, taking into consideration the (censored) cases of women who have not yet been married, as raised earlier in connection with the interpretation of the results of a survey conducted at a given point in time (Table 3). The analytic method used here is the so-called proportional hazard rate or Cox regression analysis. Starting from the time the women completed their education, the probability of their moving to the stage of marriage (transition rate) is calculated for each point in time by counting the cases of nonoccurrence of this event, which is a useful statistical method to analyze time-dependent variables such as marriage and childbirth. Table 3 shows the coefficients of the variables under given hypotheses in the form of logarithms. In taking the exponents of the coefficients and proportion of their differences, we can assess the influence of each explanatory variable.

Four hypotheses are established in this analysis. First, the family background hypothesis (Equation 1) states that women born into a prosperous family will marry if they believe that such a union will enable them to maintain the same standard of living enjoyed by their own family. Because of this tendency, those born into a family with professional or managerial status have a lower marriage rate than those born into a family of unskilled manual laborers (Yamada 1996). Second, the hypothesis on educational background (Equation 2) maintains that women with a higher education tend to aim for self-realization and that this behavior is inclined to lower the marriage rate. Third, the labor market hypothesis focuses on the type of first employment, suggesting that women

engaged in a professional job are more likely to receive opportunities for promotion, and, because they tend to choose a career over marriage, their probability of marrying is low. The fourth hypothesis, which uses graduation-age cohorts to represent time-series trends in assessing the increase in women with a higher education, is that women who have completed their education in recent years find it more and more difficult to marry; this corresponds with the current trend toward postponement of marriage.

In Equation 1, none of the categories of family background (i.e., using women born into families of unskilled manual laborers as the reference category) shows significant effects. In other words, whether a woman marries or not is not influenced by her family background. Equation 2 on the effects of educational background shows that university graduates and senior high school graduates when compared with junior high school graduates (as the reference category) have a significantly higher marriage rate. Specifically, the probability for university graduates to marry is even twice as high as that for junior high school graduates.

Table 3 Cox regression analysis of the rate of transition to marriage (log. coefficients)

	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5
Family background					
P-M	0.0935				
N-M	0.0940				
S-E	–0.0068				
FARM	–0.1016				
S-M	–0.0834				
Education					
University		0.7157*			0.5481*
High school		0.4328*			0.3238*
First job					
P-M			0.1640		–0.0839
N-M			0.2310*		0.0299
S-E			–0.4642		–0.4575
FARM			0.1086		0.4039*
S-M			–0.1290		–0.0648
Graduation-age cohort					
1976–1995				0.4537*	0.2493*
1961–1975				0.4089*	0.3115*
N	1,217	1,373	1,297	1,373	1,297
% censored	18.1	18.9	18.9	18.9	18.9
–2LL	12785.730	14485.162	13621.280	14501.436	13564.415

Key: P-M = Professional and managerial work
N-M = Nonmanual work
S-E = Self-employed
FARM = Farm work
S-M = Skilled manual work

* Significant at the 0.01 level.

These results thus contradict the hypothesis on educational background, which suggests that women with a higher education tend to face difficulties in marrying because they strive for self-realization; instead, our findings indicate the opposite trend. Third, the influence of the first job after their education was completed was only significant for women in nonmanual positions. That is, those whose first job was nonmanual had a higher rate of marriage than those starting with unskilled manual work. Here, we can cite office work as representative of employment for young women in postwar Japan; according to the study results, to get an office job means to increase the probability of marrying. However, although the working hypothesis pays particular attention to professional work, these show no significant effect. Fourth, with regard to the graduation-age cohorts, women who graduated between 1976 and 1995 and between 1961 and 1975 show a significantly higher marriage rate than the 1940–60 cohort; i.e., those who recently completed their education are more likely to have married. For example, those who graduated after 1976 had a 50 percent higher marriage rate than those who did so before 1960. Based on our examination of the overall effects of each variable, none of the above hypotheses are supported.

Equation 5 includes all those variables that have shown significant effects except family background. The variables with significant influence were education, agricultural work as a first job, and completion of education between 1976 and 1995 and between 1961 and 1975. With regard to the probability of marriage, a significant discovery was the strong influence of education and year of graduation and the limited influence of social stratification variables such as family background and first job after graduation. The decision whether or not to take the big step toward marriage was strongly related to education, i.e., whether a woman had graduated from a university (junior college) was an important factor. However, in the Cox regression analysis, in addition to the likelihood of marriage, we have also considered the length of time between graduation and marriage. The hypothesis that women who have obtained a higher education are older when they marry and tend to postpone marriage has been supported, yet, from the perspective of the rate of transition to marriage, this does not always mean that those with a higher education are less likely to marry. The reason for this is that although the period of schooling is longer, the period until marriage is shorter among young women.

O. N. Tsuya and K. O. Mason (1995) claimed that as a result of conducting a proportional hazard analysis of marriage age as a dependent variable, rather than wiping out the probability of marriage, higher educational attainment would lead to the postponement of marriage. My analysis is generally consistent with their findings, confirming that women with a higher education marry when they are older, but the rate of transition to marriage as such is not low. Therefore, to marry involves two axes—the time of marriage (age) and the timing until marriage

(period)—and these two axes do not necessarily work in the same direction.

Consequently, whether a woman enters the new life stage of marriage is strongly influenced by whether she has attained a higher educational level and the age at which she has completed her schooling. However, there is little indication that whether she has engaged in paid work prior to marriage—i.e., socioeconomic status—is significant. When looking at the distribution of occupations by education, we see that the higher the education, the higher the concentration in a limited number of occupations, a tendency that is stronger for women than for men. According to the 1990 census of Japan, 53 percent of female university graduates worked in professional occupations, among which the job of schoolteacher was representative. But overall, the limited occupations that have been associated with the increase in women with a higher education does not seem to have produced a significant influence on their likelihood to marry.[3]

3.2. Birth of the First Child and Education

We now turn to the timing of the first childbirth after marriage.[4] Table 4 shows the results of multivariate analysis of variance of age at the birth of the first child by education and marital cohort. The more advanced her education, the older the woman at the birth of her first child; the differences by level of education are statistically significant. Also between marriage cohorts we can identify a shift in age at childbirth; the younger the cohort, the older the woman at childbirth. However, this change was not significantly different between educational levels (there was no interaction between both variables). That is, age at the birth of the first child was more advanced for women with higher educational degrees, yet an increase in the age at childbirth could be found at all educational levels.

Table 5 looks at the length of the period between marriage and giving birth to the first child by education and marital cohort. There are no significant differences between educational levels and cohorts with regard to the period until childbirth. That is, although the age at birth of the first child differs by educational background, this is related to the fact that women with a higher education marry at an older age, whereas the period between marriage and childbirth does not differ, regardless of educational background.

At this point let us consider women's rate of transition to childbirth, including the

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[3] Note the fact that, in my analysis, the share of junior college graduates among those with a higher education is high, and that therefore the results do not necessarily apply to women who graduated from a four-year university per se.

[4] In the 1995 SSM data, the question of the presence or absence of children is limited to those who have been married; it therefore does not provide any information on children born outside of marriage.

Table 4 Age at birth of first child, by education and marital cohort

	Marital Cohort	Mean	S.D.	CRV	N
University graduates	Before 1970	25.64	3.02	0.12	28
	After 1971	27.62	3.00	0.11	148
High school graduates	Before 1970	25.33	3.42	0.14	265
	After 1971	26.03	3.66	0.14	381
Junior high school graduates	Before 1970	24.90	3.36	0.13	251
	After 1971	24.89	4.49	0.18	54

MANOVA	F	d.f.	sig.
Education	7.87	2	0.000
Marital cohort	8.14	1	0.004
Education × marital cohort	2.51	2	0.082

Key: S.D. = Standard deviation
CRV = Coefficient of relative variation
MANOVA = Multivariate analysis of variance

Table 5 Length of period between marriage and birth of first child, by education and marital cohort

	Marital Cohort	Mean	S.D.	CRV	N
University graduates	Before 1970	2.90	3.28	1.13	176
	After 1971	3.11	6.10	1.96	27
High school graduates	Before 1970	2.43	3.37	1.39	406
	After 1971	3.93	7.78	1.98	267
Junior high school graduates	Before 1970	3.07	4.99	1.63	54
	After 1971	2.99	5.88	1.97	237

MANOVA	F	d.f.	sig.
Education	0.10	2	0.906
Marital cohort	1.24	1	0.265
Education × marital cohort	1.95	2	0.142

Key: S.D. = Standard deviation
CRV = Coefficient of relative variation
MANOVA = Multivariate analysis of variance

rate of those who had not yet had a child at the time of the survey (censored cases) (Table 6). Our working hypothesis is the same as that used in the analysis of the rate of transition to marriage and includes the occupation of the husband at the time of marriage (Equation 4). Here it is suggested that the birthrate would be low for women who married men in a professional or managerial position. That is, since the educational attainment of the husband in a professional or managerial position

tends to be high, it is likely that he will marry a woman with a higher education. Further, since the hypothesis on educational background suggests that the birthrate is low among highly educated women, we hypothesize that those who marry to men in a professional or managerial position will have a low birthrate. Table 6 shows the results of the Cox regression analysis (Equations 1 through 6); significant effects were found among university graduates, husbands in professional or managerial positions, and the age at marriage. All of these variables depressed the birthrate. For example, as suggested in the hypothesis on educational background, the birthrate was 19 percent lower for women with a higher education than those

Table 6 Cox regression analysis of rate of transition to birth of first child

	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7
Family background							
P-M	–0.2400						
N-M	–0.0790						
S-E	–0.0345						
FARM	0.0726						
S-M	0.0101						
Education							
University		–0.2072*					–0.0773
High school		–0.0043					0.0297
First job							
P-M			0.0347				
N-M			0.0372				
S-E			–0.0884				
FARM			–0.0109				
S-M			0.1088				
Husband's job at marriage							
P-M				–0.2862*			–0.2273
N-M				–0.1599			–0.1370
S-E				–0.1806			–0.1762
FARM				–0.1450			–0.1504
S-M				–0.0744			–0.0536
Age of marriage					–0.0353**		–0.0294**
Marital cohort after 1971						0.0347	
N	945	1,061	1,002	973	1,061	1,061	973
% censored	8.18	8.01	8.08	8.22	8.01	8.01	8.22
–2LL	10971.835	12423.758	11623.308	11218.165	12415.929	12429.667	11206.942

Key: P-M = Professional and managerial work
N-M = Nonmanual work
S-E = Self-employed
FARM = Farm work
S-M = Skilled manual work

* Significant at the 0.05 level.
** Significant at the 0.01 level.

who only completed junior high school; likewise, the probability of giving birth to a child was 25 percent lower for those who married men in professional or managerial positions, compared to those whose husbands held unskilled manual jobs. Moreover, the older the age at marriage, the lower the birthrate. Yet the nature of a woman's job before marriage—for instance, whether she had held a professional position or not—did not significantly influence the birthrate after marriage in any way.[5]

Equation 7, which excludes the occupational variable for family background and the woman's occupation before marriage, shows that the influence of education and the husband's job at the time of marriage becomes insignificant. Only the influence of age at marriage remains significant. Specifically, when considered in relation to age, the influence of education on the birthrate disappears and the influence of age becomes significant. In other words, the question of when or whether a woman is going to have children after marriage is strongly related to her age, and there is no significant difference between someone who has graduated from a university or has only completed junior high school.[6] Therefore, it is possible to suggest that the time of marriage is an important demographic factor in determining the birth of children. The reason why women with a higher education do not experience childbirth is less a question of socioeconomic factors (such as values instilled by a higher education or the likelihood of obtaining a professional job) than it is their tendency to postpone marriage until they are older. If a woman undertakes the life event of marriage, then, reproductive behavior is largely determined by age.

3.3. Attitudes toward the Sexual Division of Labor and Educational Background

The explanation that women's higher education has contributed to a decline in the birthrate is often based on the assumption that attitudinal differences—more specifically, the rejection of the sexual division of labor—is behind this trend. According to this view, as increasingly more women attain a higher education, attitudes are becoming more liberal and negate the normative assumption of the sexual division of labor, which asserts that "men work outside, women in the home"; moreover, higher

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[5] Even if one adds the occupation after marriage instead of at the time of marriage, the results are the same. However, because there were cases where respondents said that they were "not employed" during the time of marriage (i.e., one year before and after marriage), and because these cases decrease the sample of the analysis, I have used the occupation before the first marriage as a variable.

[6] These findings do not correspond with T. Sasai's (1998) conclusions, based on the 11th Japanese National Fertility Survey in 1997, which indicate that the period between marriage and the birth of the first child is longer for those with a higher education. I plan to make this a subject of future investigation.

education may lead to a rejection of marriage or at least delay and strengthen the pursuit of a career equal to that of men. In fact, the 1995 SSM survey shows a trend in negative attitudes toward the sexual division of labor the higher the level of education obtained by both men and women. Thus it can be argued that individuals who have received a higher education tend to more readily reject the normative assumptions of the sexual division of labor. This section explores how these attitudes concretely influence such division by examining husbands' participation in housework. The relationship between attitudes and empirical facts is an important element in the study of changes in young people's attitudes and the declining birthrate; it also relates to the issue of how the attainment of higher education is resolved in everyday life.

The 1995 SSM survey included questions to ascertain the degree of married men's involvement in three major areas of domestic labor: (1) food preparation and table clearing, (2) housecleaning and laundry, and (3) child rearing.[7] Table 7 shows the results of the regression analyses of these three dependent variables. To each dependent variable we added the explanatory variables of the person's attitude toward the sexual division of labor (with high scores for affirmative attitudes), his educational background, and his wife's work and age. The hypotheses used here were that, first, the stronger the man's rejection of the sexual division of labor, the greater the extent of his participation in housework, and, second, a higher level of education attained by his wife will lead to his higher level of participation in housework. With regard to the wife's employment, it was hypothesized that her greater involvement

Table 7 Regression analysis of husbands' participation in housework

	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Constant	1.431*	0.175	1.481*	0.173	2.553*	0.215
Gender division	–0.078*	0.031	–0.103*	0.031	0.001	0.038
Education	0.132*	0.033	0.080*	0.033	0.060	0.041
Wife's work	0.050	0.047	0.063	0.046	–0.009	0.058
Age	0.002	0.002	0.001	0.002	–0.017*	0.003
R^2	0.038		0.033		0.090	
Dependent variable	Food preparation		Cleaning		Child rearing	

* Significant at the 0.01 level.

[7] The degree of involvement was indicated by one of three responses: (a) always, (b) sometimes, and (c) rarely. The highest degree of involvement was scored with 3, the lowest with 1. In addition, to determine the influence of educational attainment generally, education was scored from 3 to 1.

in work outside of the home will reinforce the husband's participation in housework, and that with respect to age, men's resistance to housework will be lower for younger people, while their degree of participation will be greater.

In the regression analysis of the dependent variables of food preparation and table clearing, the variables having a significant influence on men's participation in food preparation were attitude toward the sexual division of labor and educational background, whereas the effects of the wife's work situation and age were insignificant. Therefore, one might conclude that the stronger the husband's rejection of the sexual division of labor and the higher his educational attainment, the higher the degree of his participation in food preparation.

In the case of housecleaning and laundry, it was found that attitudes toward the sexual division of labor and educational background are a significant influence. Whereas attitudes that reject or affirm the sexual division of labor seem to determine a husband's actual participation in domestic labor, external factors such as his wife's job seem to have little influence on the extent of his participation in cooking, cleaning, or laundry. Even if his wife works outside the home, a husband with a conservative attitude will not help with housework. Moreover, it appears that the wife's work situation does not necessarily influence the extent of her husband's participation in housework. In other words, a wife cannot expect her husband to take part in housework simply because she has a job outside of the home.

With regard to a husband's involvement in child rearing, attitudes toward the sexual division of labor and educational background do not have a significant influence. Here, only age is important, while neither the rejection of the sexual division of labor nor university education seem to have a bearing on husbands' participation in this area. The results of the analysis indicate that age is a significant determinant of a man's participation in child rearing. Although involvement was high for better-educated husbands, if one considers that the proportion of university graduates is larger among younger people, the effect of educational background disappears. Based on the study's findings, it is not possible to assert that the degree of participation in child rearing is directly influenced by higher education. In addition, it was surprising to find that a wife's work situation makes no difference in the level of her husband's participation in child rearing.

Having examined husbands' participation in domestic labor, taking into consideration their views on the sexual division of labor, educational background, and age, we can see the extent to which attitudes are more readily reflected in real life. To be sure, the greater the increased participation in food preparation, cleaning, and laundry, the stronger was the tendency to reject the sexual division of labor and the higher the educational attainment; nevertheless, the same pattern could not be identified in the case of child rearing. It thus

seems that rather than higher education and changing attitudes, age differences are of great importance in promoting men's participation in child rearing.

4. Conclusion

In this paper I have discussed the influence of women's increasing higher educational credentials by focusing on the two life events of marriage and birth of the first child. In addition, I have discussed the relationship between husbands' attitudes toward the sexual division of labor and their actual degree of participation in housework in connection with educational background, women's work, and age. One of the most important effects that can be commonly found in this study is age. Although we have confirmed that educational background is of great importance with regard to reaching the life stage of marriage, the decision of whether to give birth or not, which is directly reflected in the declining birthrate, is strongly affected by a woman's age at marriage. Moreover, concerning the idea of promoting men's assistance in housework as a policy to confront the declining birthrate, it appears that the crucial issue of participation in child rearing is more strongly associated with age than with either values or education.

According to M. Brinton (1988), the degree of age-specific timing of life events in Japan is high, and since the spread of the timing of these events is narrow, age has great importance for the Japanese. She concludes that in determining the social status of women, the significance of socioeconomic attributes—e.g., whether a woman has graduated from a university and her occupation—are low compared to the United States, and that, therefore, the demographic factor of age has an important meaning in Japan. That is, it can be said that the presence of a systematically and hierarchically ordered timetable based on age is weakening the influence of socioeconomic factors such as educational background and occupation. To be sure, the prevalence of higher education has played an important role in changing attitudes. Nevertheless, based on the results of this study, we can only confirm its limited influence on reproductive behavior and child-rearing practices.

In other words, it can be argued that the construction of a timetable that lacks flexibility has made the decisions to be taken at each life stage—i.e., whether to marry or not, whether to continue to work or stop, or whether to bear a child or not, a choice over conflicting options—and that this has given rise to a situation where women do not want to have children. The declining birthrate reflects each individual's social choices. If we are seriously concerned about why a woman would choose not to have a child, we should go beyond simply alluding to the harmful effects of her higher education. Instead, it is necessary to take a more

holistic view, one that also considers men's work habits and lifestyles.

In Japan, where the number of children born out of wedlock is extremely low, as is the rate of cohabitation among young people, to have children and to marry are concurrent decisions. In other words, to marry is a precondition for deciding to have children. The more that marriage and childbirth are bound to a specific timetable, the further will young women distance themselves from the marriage state and the more likely that they will be forced into a situation where they will not have any children. The creation of a more moderate social system that is able to accommodate more flexible lifestyles could be the key to confronting the declining birthrate.

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