Traditions Die Hard: Effects of Lunar Calendar Use on Marriage and Fertility Decisions of Youth in South Korea

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Abstract

This paper examines how family cultural values, proxied by lunar calendar use for birthday, affect young individuals' marriage and fertility outcomes in South Korea. The lunar calendar is widely used together with the western calendar in everyday life, and is expected to represent well the family cultures. Using the Youth Panel surveyed in 2001, we find that young people aged between 21 and 29 with lunar birthday, regardless of their gender, are more likely to be married, even after controlling for individual characteristics and family background variables including father's education and household income. More interestingly, young married men with lunar birthday are more likely to have children, while young married women are not influenced by the tradition. These results are consistent with the hypotheses that young men from more traditional families enter into early marriage and that they are more likely to have offsprings at the earlier age.

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Timing of first marriage and childbearing is one of the important issues in demographic studies because of its fertility implication. In recent decades, many studies have documented significance of the timing of marriage in relation to the demographic outcomes, such as fertility transition and decline of fertility rate (Morgan and Rindfuss, 1999; Kohler, 2002). As some researchers addressed, however, timing of marriage and childbearing also have important meaning in its own right because marriage pattern reflects how family life is organized and functions in a particular culture (Mensch and Casterline, 2005). Furthermore, it implies various family and gender relationships within society, revealing the social and cultural value about family and marriage (van de Walle, 1993; Malhotra, 1997).

In most countries, family formation and productive behavior are influenced by traditional value, and religion is the symbol of the legacy of traditional society (Goldscheider, 1999). In South Korea, lunar calendar was the principle with which all social and economic life is organized and scheduled. Although life style have changed fundamentally due to influence of western culture and economic development, value and cultural norms rooted in this astrological system can be easily found in everyday life of Koreans even nowadays. The lunar calendar is widely used together with western calendar. For example, the official New Year's Day or Korean Thanksgiving Day is based on the lunar calendar, while many other holidays are based on western calendar.[1] The most interesting feature of lunar calendar use is that a significant number of Koreans use lunar birthday as their official date of birth, while it is not used (or rarely if any) in any other East Asian countries that share legacy of Chinese culture and zodiac system. Not only old generation but also young people employ lunar calendar as their official birthday. In 2001, almost 44% of youth in their 20s are using lunar calendar for their official birthday.

Individuals are expected to report whether their birthday is based on lunar calen-

[1]Furthermore, every memorial service day of the deceased family members is also based on the lunar calendar.

dar or western calendar in many official documents, and many people calculate their age based on the lunar calendar birthday. This selection of birthday is determined by parents usually at the birth of child, following their family tradition. For this reason, lunar calendar birthday could be a good indicator whether individual's family is oriented to traditional value, and it provides us unique opportunity to employ it as a proxy of cultural value in South Korea.

Few studies have been conducted concerning cultural factors contributing to family formation and fertility decision in South Korea due to the difficulties of measuring cultural value. These difficulties mainly attribute to characteristics of religious belief system of Korea.[2] Confucianism is not considered as a religion although Confucian tradition penetrates many aspect of Korean life. Only small number of Confucian scholars and their followers (about 0.2 percent of total population) report Confucianism as their religion.[3] In fact, it is lack of basic components as a religion (such as a concept of gods), and it had been characterized as a ruling principle rather than religion. Usually, cultural indicator is inferred from religious categories (Goldscheider, 1999). However, religion variable in South Korea does not reflect the cultural values of Korean population properly, especially traditional norms about family. Thus, lunar calendar use reflects the traditional value about marriage and family formation better than religious category as a cultural indicator in this situation.

In this paper, we examine how lunar calendar use, as a proxy of carrying traditional family values, affects the decision about nuptiality and fertility of young individuals in South Korea. First, we estimate the probability model of getting married of young men and women and find that young men with lunar birthday are more likely to be married controlling for individual characteristics as well as family background variables. Second, we investigate the probability of having children of the sub-sample of married

[2]It also inscribes to nonexistence of race and ethnicity division in South Korea which is usually employed as indirect indicator of cultural characteristics in societies composed of various ethnic groups.

[3]In 2005, 54 percent of Korean population over 15 years old have religion. Among these religious people, Buddhism counts for 43 percent, Protestantism 35 percent, and Catholic 21 percent, while people who report Confucianism as their religion is only 0.4 percent (Korea National Statistical Office).

youth and find that the young married men with lunar birthday are more likely to have children. Also, along with the findings from the two results, we will examine the effect of lunar calendar use on the age of first marriage and childbearing for young men.

Marriage, Family, and Son Preference

For this study, we have two basic assumptions. First, traditional values play a significant role in decision of marriage and childbearing of youth and this cultural factor have some independent effect from other socio-economic factors. Second, timing of marriage and childbearing is closely related to son preference in South Korea.

Marriage formation and fertility decision are influenced by various social, economic, and cultural factors. According to Becker, marriage is a manifestation of utility-maximizing behavior. In other words, marriage occurs when a person gets into marriage market and assesses that the utility of being married exceeds that of being single (Becker, 1973; Boulier and Rosenzweig, 1984; Mensch and Casterline, 2005). From this perspective, the relationship between individual, family background and marriage formation is well documented. Disadvantaged family situation, such as low family income, low parental education level, a large number of siblings, and a non-intact family, is positively related to marriage at an early age because these factors tend to higher the cost of being remained as single (Michael and Tuma, 1985; Lam and Schoeni, 1993). On the contrary, parental resources increase children's ability to attain their educational goals. Education of children, in turn decreases the likelihood of early marriage because investments in education increase the opportunity costs of early marriage and constrain the time available for family roles (Landale and Forste, 1991; MacDonald and Rindfuss, 1981; Goldscheider and Waite, 1986).

Other important factor influencing marriage and fertility is cultural value, usually inferred by religious affiliation. Often, the relationship between religious affiliation and fertility is maintained spurious. The main point of this perspective is that effect of

religion on the fertility outcome may disappear when controlling socioeconomic factors and family background such as income, education, and place of residence. However, several researchers emphasize the role of religious value (or cultural value) in that the association between religious affiliation and fertility persists even after taking account of the groups differing socioeconomic profiles (McQuillan, 1999; Goldscheider, 1999). Their argument is based on the idea that the demographic behavior could be accounted for by the teaching of the religion related to childbearing. Also, members of the various religious groups make a choice about marriage and fertility that are consistent with the differences in perceived benefits and costs based on their distinctive value system (Lehrer, 2004; Inglehart and Baker, 2000).

As other East Asian Confucian societies, ancestor worship has been an important duty of offspring in South Korea.[4] Male offspring are expected to perform the rituals of ancestor worship in order to ensure the welfare of afterlife of ancestors as well as good luck in current life of themselves as rewards (Gupta et al., 2003). This traditional belief emphasized the duty of sons - especially the oldest son- for respecting their parents, and enforced son preference in South Korea.[5] The family is the fundamental unit of society, incorporating the economic functions of production and consumption creating the norms and ethical principles of their own family (Park and Cho, 1995*b*). These family norms were inherited to the other generation through the line of male offspring. Combined with the culture of agricultural society that considered the sons as important labor resource and valued a large family, early marriage was encouraged and son preference was enforced in traditional Korean society.

Thus, the marriage and fertility decisions by individuals are closely related to the son preference based on Confucian belief in South Korea. There are numerous studies about the son preference and fertility outcome. Most of studies focus on that son pref-

[4]Following Goodkind (1996), we refer the countries that share the common heritage of the Chinese language and the influences of Confucianism, Buddhism, and Taoism as Confucian society.

[5]The influence of this tradition does not apply only to the families living in these countries. In their study, Kamo and Zhou (1994) show that the practice of primogeniture by Chinese and Japanese immigrant families still persist in the U.S these days.

erence in South Korea results in imbalance of sex ratio at birth and social segregation by sex (Lee and Paik, 2006; Park and Cho, 1995*a*; Edlund, 1999). In the same context, son preference embedded in traditional value is also likely to influence the timing of marriage and fertility on men and women differently, because sons are more expected to form a family and have a male offspring to serve for their parents or ancestors.

Based on this consideration, we have two hypotheses in this study. 1) Youth with lunar calendar birthday will marry at earlier age and thus more likely to be married than those with western calendar birthday. 2) Lunar calendar use will have more effect on the decision of childbearing of male youth than females.

Data and Descriptive Statistics

The data used in the research are the Youth Panel surveyed in 2001 by the Work Information Center in the Human Resources Development Service of Korea. The Youth Panel was designed as a longitudinal data set, and initially surveyed more than 8,000 young individuals aged 15-29 from about 10,000 households in 2001. However, since teenage marriage is hardly observed in South Korea, this study restricts the sample to individuals aged between 21 and 29, though the original dataset includes younger persons.[6]

There exist several advantages in exploiting the Youth Panel. Firstly and most importantly, it asks explicitly whether an individual's birthday is based on the western calendar or the lunar calendar, while various official records requiring date of birth such as the Census and Birth Report only instruct repliers to use the western calendar, which result in incorrect information on date of birth (Lee and Paik, 2006). Secondly, since it is designed as a panel dataset to examine young individuals' schooling and labor market transitions, we can take an advantage of using various personal information as

[6]The legal minimum age for marriage is 18 in South Korea, and the marriage requires the consent of parents or guardians if a person is younger than 20.

controls. Thirdly, it also provides various household characteristics, thus enabling us to separate out the effects caused by the variations in household or family background.

Lunar Calendar Use

We choose to use the birthday type as a proxy for family cultures or traditions. In other words, we believe that an individual from more traditional families, which are not easily observed in a dataset, are more likely to use lunar birthday. This can also be shown by the relationship between lunar birthday use and other individual characteristics. Table 1 reports the fractions of persons with lunar birthday by age and sex. Both men and women show similar patterns across age. Older men and women are more likely to have lunar birthday. Though the faction varies from 34 percent up to 52 percent and its trend declines, this shows that a large number of young people still use lunar calendar for their birthday. When considering that lunar calendar must be used for traditional holidays and memorial service days of the deceased, the widespread use of lunar calendar implies that many people still value the traditions.[7]

The differences in lunar birthday use by family background also show that the lunar birthday use is related to valuing traditions and the possibility that it can capture some variations in family culture not observed nor proxied by other characteristics. Table 2 reports the relationship between lunar birthday use and three family background characteristics. Both father's education and mother's education are negatively related to the lunar birthday use as shown in the first and second panels. The usual perception of adverse relationship between education and valuing traditions is confirmed from this distributions. As expected, persons whose parents are more educated are less likely to have lunar birthday.

Since the data on individuals' birth place are not available, we use residence re-

[7]Preparing family events in the traditional holidays and memorial service days of the deceased is considered as the responsibility of the eldest son. This may be one of the reasons of son preference in South Korea.

gions at age 14 in order to look at regional variations in calendar use. The fraction of lunar birthday users is smaller in Seoul/Inchon/Kyunggi that is the most prosperous area including the national capital. An interesting finding is that the fraction is highest in Gwangju/Jonnam/Jonbuk instead of Taegu/Kyungbuk or Pusan/Ulsan/Kyungnam, though the difference is not large. Usually Taegu/Kyungbuk and Pusan/Ulsan/Kyungnam are considered as the most conservative regions in South Korea. This seems related to the fact that Gwangju/Jonnam/Jonbuk has been the main agricultural area harvesting rice while the government have started to locate industries firstly in Taegu/Kyungbuk and Pusan/Ulsan/Kyungnam.

Summary Statistics

Table 4 shows descriptive statistics by sex and birthday type. As expected, the demographic outcomes are much different by birthday type. The fraction of married men with lunar birthday is about 6 percent higher than that with solar birthday. In case of female the difference increases to more than 11 percent. The probability of having a child also show similar patterns. However, the difference is much larger in case of men.

The sample means and standard deviations of other individual characteristics are also reported. Ages of lunar birthday users are older, but the difference is not large. The fractions of persons who have attended college, are currently enrolled as a student, and attend church are higher for western calendar users than lunar calendar users. Looking at household information, the household income is lower in case of lunar calendar users, and father's education level is also lower in lunar calendar users. However, the difference between men and women seems not notable.

Probability Models and Estimation Results

In order to estimate the effects of lunar birthday use on demographic outcomes, we exploit the following probability models with controlling various observable information.

$$Prob(M_i = 1|Lunar_i, \mathbf{X}_i) = \Phi(\alpha_M Lunar_i + \mathbf{X}_i\beta),$$
$$Prob(F_i = 1|Lunar_i, \mathbf{X}_i) = \Phi(\alpha_F Lunar_i + \mathbf{X}_i\beta).$$

In these estimation equations, M_i and F_i are dummy variables representing individual i's demographic outcomes, marriage and having a child respectively, and $\Phi(\cdot)$ is the cumulative distribution function of normal distribution, following the probit specification. $Lunar_i$ indicates whether or not individual i uses lunar birthday, and $\mathbf{X}_i$ represents a vector of control variables. To control variations by individual, we firstly include an individual's demographic information in $\mathbf{X}_i$ and then additionally use family background variables such as household income, father's education, and residence region when young. Furthermore, several observed demographic information of an individual's spouse are also controlled to estimate the probability of having a child.

Thus, α_M and α_F are the coefficients of main interest. However, we report the difference in probability between lunar calendar users and western calendar users for easy interpretation. Similarly, for other covariates, the differences in probability are reported for dummies, and the marginal effects are reported for continuous variables. The difference in probability by birthday type is computed as $\Phi(\hat{\alpha}_M + \bar{\mathbf{X}}_i\hat{\beta}) - \Phi(\bar{\mathbf{X}}_i\hat{\beta})$, and similarly for other dummy covariates. The marginal effect of continuous variables are calculated as $\hat{\beta}_k\phi(\hat{\alpha}_M\overline{Lunar}_i + \bar{\mathbf{X}}_i\hat{\beta})$, where $\hat{\beta}_k$ is the estimated coefficient of an independent variable and $\phi(\cdot)$ represents the density function of normal distribution.

Early Marriage

Among the demographic outcomes of interest, when deliberating family cultures or traditions, the first and foremost expectation is that young people from the families valuing traditions might get married at their earlier age to expand their family to the next generation. Table 5 reports the estimation results of the probability of getting married of young men and women aged between 21 and 29, and we find that the family culture has an significant influence on marriage decision. The differences in probability of being married between lunar birthday users and solar birthday users are about 3 percent for men and about 5 percent for women regardless of controlling family background variables. The large estimates for women seem to caused by the gender difference in marriage-age distribution. As confirmed by various reports, the average age of getting married is higher for men.[8] The significant difference of women is also propelled by another traditional perception on women's role or duty in a family. To control family background, we include the natural logarithm of household income, father's education years, and five residence region dummies when young.[9] And the results are not much different after these controls as reported in Table 5.

The effects of individual characteristics are similar to previous researches. Since examining only persons aged under thirty, the marginal effect of age looks different by sex. The marriage probability turns out nonlinear to men's age, while the nonlinearity is unclear in case of women. Men and women who have attended a college including occupational college (junior college) are less likely to be married. The difference in probability is about 3 percent for men, and it is a little bit less than 2 percent for women. These results seem to be caused by two reasons. Firstly, post-secondary

[8]According to the National Statistical Office, the average age at marriage is 30 for men and 27 for women in 2001, and it has increased steadily for the last several decades. In particular, the increase in women's marriage age is considered as one of the major reasons of extremely low fertility rate in South Korea.

[9]We do not include mother's education here since there are some missing values. However, only using the sub-sample with observed mother's education, we estimated all empirical models and obtain the very similar results with the reported values.

education requires young people to spend more time at school, and thus decreases the likelihood of getting married early in terms of both time and finance. Secondly, higher education may also change an individual's preferences or tastes. Considering the general perception that education level is adversely related to valuing traditions, a person with post-secondary education may postpone marriage and choose to spend more time for other activities such as career development. Similar results are also found when we look at the other education-related variable. The dummy variable indicating whether an individual is currently enrolled in a school, mostly in a college, has no significant effect on the probability of men, while female students are significantly less likely to be married than their counterpart. The difference in estimated probability is about 2 percent.

The effect of employment status is very interesting in that men and women show opposite patterns in the probability. Employed men are more likely to be married than unemployed men, while employed women are less likely than unemployed women. On the one hand, this implies that the economic ability of men may be considered as a prerequisite for marriage, while women's working status may be thought of as a hindrance of forming a family. Thus, this finding also supports that traditional values still prevail in South Korea despite rapid economic development and modernization process. On the other hand, it may also reflect young women's selection into self-development through social activity instead of marriage, given that traditional values are still crucial when entering marriage and forming a family.

We also need to consider personal experience or environmental factors in marriage decision. When considering that the traditional Korean society is based on Confucianism, the effect of religion cannot be ignored in demographic decisions. Two religions from the western culture, Christianity and Catholic, are identified by the dummy variable, Christian.[10] However, it turns out insignificant in marriage probability for both

[10]The reference group is persons whose religion is Buddhism or other traditional religions and those who do not have any specific religion. Including more detailed religion dummies does not change the results significantly.

men and women. In order to control environmental factors, we include an indicator of currently residing metropolitan areas as well as five residence region dummies. Though the dummy of metropolitan residence is not significant for men, young women who live in metropolitan areas are about 4-5 percent less likely to be married. The included family background variables, household income and father's education have no significant effect on marriage. However, though not reported in Table 5, both men and women who have grown up in other regions when young have significantly higher probability of being married against those who have lived in Seoul/Inchon/Kyunggi, the most prosperous area in South Korea.

Fertility

Early marriage is very closely related to fertility decision. To examine whether the findings as described above are extended to fertility outcome, we also estimate the probability model of having a child, and report the results in Table 6. In these regressions, the sub-sample of married youth is used.

Contrary to marriage decision, the fertility patterns are different by sex. As specified earlier in the hypothesis, married men with lunar birthday turns out about 31 percent more likely to have a child than those with solar birthday. Even after controlling family background, the difference in probability is as large as about 27 percent. However, the birthday type has no significant effect on married women's fertility decision. These results imply that a considerable number of young men, especially from more traditional families, are still under the influence of patriarchal traditions and try to have a child to extend their family to next generation. In that the continuity of a family can be maintained only through male offspring in traditional Korean society, the insignificancy of women's family tradition can be considered as a reasonable result. However, the fertility decision within a family is made by both husband and wife. Thus, without considering the variations in demographic characteristics of spouse, the estimates may be biased. The columns (3) and (6) in Table 6 include spouse's birthday type, age and

its quadratic term, and college experience dummy for controlling these effects. The estimated differences in probability of having a child are qualitatively the same as the previous results. An interesting finding is that, in case of married women, husband's lunar birthday has significant effect on the probability of having a child. This result is consistent with the estimation result of married men.

Among various demographic characteristics, employment status are positively related to fertility decision of married men. Since having and rearing a child demands considerable economic resources and the financial responsibility within a family are usually imposed on men, this large difference in probability, about 44 percent, can be understood. Married women's employment status turns out insignificant after controlling various factors. Similarly to marriage decision, an individual's religion has negative effect on early fertility decision. Both married men and women whose religion is Christianity or Catholic are less likely to have a child at their earlier age. The differences are about 30 percent for men and about 11 percent for women.

Since the fecundity of women is restricted in terms of age, the estimates of age and its quadratic term reflect the nonlinear relationship between age and the probability of having a child. In case of men, the nonlinearity in age is not clear. The effect of college experience is also not notable. When ignoring household background and spousal characteristics, married women with experience of attending college look less likely to have a child. However, additional controls eliminate the significancy as well as the size of estimates.

Contrastive estimation results between men and women are also found in the effects of household background variables. Household income lowers the men's probability of having a child, while it does not affect the women's probability.[11] One year increase in father's education drops the married women's probability by about 2 percent, while it has no influence on married men.

[11]When including spouse's demographic characteristics, the coefficient of men is only significant at 10 percent level, but very close to 5 percent level

Conclusion

In spite of the common recognition that heterogeneous family cultures or traditions might affect an individual's marriage and fertility decisions, we can hardly find an empirical research focusing on individuals' demographic behavior originated from the variations by family. Exploiting an idiosyncratic social practice in South Korea that is believed to have no notable cultural differences within a society, this research sheds light on empirical studies on the effects of cultural values on demographic outcomes.

Our findings that young people from more traditional families are more likely to enter into early marriage and that young married men with lunar birthday are more likely to have children. These results show that traditional values still have significant effects on various demographic decisions and, possibly, on various social and economic outcomes such as employment. Thus, the policies to affect demographics in South Korea need to consider the implications addressed in this research.

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Table 1: **Fraction of Lunar Birthday Users by Age**

	Male		Female		Total	
Age	Fraction	Obs.	Fraction	Obs.	Fraction	Obs.
21	0.297	118	0.363	300	0.344	418
22	0.354	189	0.382	259	0.371	448
23	0.432	185	0.392	227	0.410	412
24	0.395	223	0.452	250	0.425	473
25	0.513	226	0.462	212	0.489	438
26	0.481	185	0.497	193	0.489	378
27	0.486	214	0.489	221	0.487	435
28	0.519	154	0.519	185	0.519	339
29	0.458	144	0.533	135	0.495	279
Total	0.443	1,638	0.444	1,982	0.443	3,620

Table 2: **Family Background and Lunar Birthday Use**

	Male		Female		Total	
	Fraction	Obs.	Fraction	Obs.	Fraction	Obs.
By Father's Education						
Elementary School or less	0.572	472	0.651	481	0.612	953
Middle School	0.511	364	0.489	497	0.498	861
High School	0.369	582	0.376	721	0.373	1,303
College Experience	0.245	220	0.187	283	0.213	503
By Mother's Education[a]						
Elementary School or less	0.582	643	0.608	684	0.595	1,327
Middle School	0.427	445	0.447	627	0.438	1,072
High School	0.310	451	0.300	567	0.305	1,018
College Experience	0.191	68	0.111	90	0.146	158
By Residence When Young (at 14)						
Seoul/Inchon/Kyunggi	0.256	507	0.265	671	0.261	1,178
Pusan/Ulsan/Kyungnam	0.402	331	0.469	407	0.439	738
Taegu/Kyungbuk	0.500	238	0.537	285	0.520	523
Gwangju/Jonnam/Jonbuk	0.674	270	0.625	291	0.649	561
Daejon/Chungnam/Chungbuk	0.584	226	0.578	232	0.581	458
Other Regions	0.439	66	0.438	96	0.438	162
Total	0.443	1,638	0.444	1,982	0.443	3,620

[a] In the second panel, total observations are smaller because of missing values in mother's education.

Table 3: **Religion Distribution of Youth**

	Male	Female	Total
No Religion	898 (54.8%)	1,021 (51.5%)	1,919 (53.0%)
Buddhism	282 (17.2%)	334 (16.9%)	616 (17.0%)
Christian	340 (20.8%)	459 (23.2%)	799 (22.1%)
Catholic	99 (6.0%)	151 (7.6%)	250 (6.9%)
Other	19 (1.2%)	17 (0.9%)	36 (1.0%)
Total	1,638 (100.0%)	1,982 (100.0%)	3,620 (100.0%)

Table 4: **Comparison of Sample Means by Sex and Birthday Type**

	Male			Female		
	Solar	Lunar	Total	Solar	Lunar	Total
Demographic Outcomes						
Married	0.085	0.148	0.113	0.211	0.325	0.261
	(0.280)	(0.355)	(0.317)	(0.408)	(0.469)	(0.439)
Have Child[a]	0.346	0.617	0.503	0.461	0.490	0.477
	(0.479)	(0.488)	(0.501)	(0.500)	(0.501)	(0.500)
Individual Characteristics						
Age	24.79	25.29	25.01	24.26	24.85	24.52
	(2.431)	(2.288)	(2.381)	(2.511)	(2.530)	(2.535)
College Expr.	0.768	0.670	0.725	0.738	0.623	0.687
	(0.422)	(0.470)	(0.447)	(0.440)	(0.485)	(0.464)
Employed	0.392	0.466	0.425	0.432	0.431	0.431
	(0.488)	(0.499)	(0.494)	(0.496)	(0.495)	(0.495)
Curr. Student	0.402	0.328	0.369	0.211	0.141	0.180
	(0.491)	(0.470)	(0.483)	(0.409)	(0.348)	(0.384)
Christian	0.314	0.210	0.268	0.360	0.242	0.308
	(0.465)	(0.407)	(0.443)	(0.480)	(0.429)	(0.462)
Household Information						
Log of H. Income	16.81	16.69	16.76	16.88	16.76	16.83
	(0.616)	(0.655)	(0.636)	(0.631)	(0.606)	(0.622)
Father's Educ.	10.70	8.95	9.93	11.17	9.12	10.26
	(3.661)	(3.744)	(3.797)	(3.466)	(3.286)	(3.536)
N	913	725	1,638	1,102	880	1,982

[a] "Have Child" is conditional on marital status (Married=1).

Notes. Standard deviations are in parentheses.

Table 5: **Probability Models of Marriage**

	Male		Female	
	(1)	(2)	(3)	(4)
Lunar Birthday	0.028**	0.027**	0.050*	0.045*
	(0.010)	(0.011)	(0.020)	(0.020)
Age	-0.086	-0.090	0.040	0.038
	(0.049)	(0.056)	(0.089)	(0.088)
$Age^2/100$	0.208*	0.214*	0.067	0.071
	(0.097)	(0.112)	(0.179)	(0.177)
College Expr.	-0.032**	-0.031**	-0.168**	-0.164**
	(0.013)	(0.013)	(0.025)	(0.026)
Employed	0.105**	0.106**	-0.236**	-0.240**
	(0.022)	(0.019)	(0.019)	(0.017)
Curr. Student	-0.015	-0.013	-0.176**	-0.177**
	(0.020)	(0.021)	(0.018)	(0.019)
Christian	0.000	0.000	0.016	0.021
	(0.011)	(0.010)	(0.021)	(0.022)
Metro	-0.015	-0.015	-0.046*	-0.044*
	(0.009)	(0.010)	(0.020)	(0.019)
Log of H. Income		-0.007		0.009
		(0.006)		(0.016)
Father's Educ.		0.001		-0.002
		(0.001)		(0.003)
Region at 14	No	Yes	No	Yes
Curr. Region	Yes	Yes	Yes	Yes
Log likelihood	-404.9	-402.4	-679.4	-675.4
Pseudo-R^2	0.299	0.303	0.403	0.407
N	1,638	1,638	1,982	1,982

Notes. Marginal effects are reported and robust standard errors are in parentheses, * significant at 0.05; ** significant at 0.01. "Region at 14" and "Current Region" have six categories, Seoul/Inchon/Kyunggi, Pusan/Ulsan/Kyungnam, Taegu/Kyungbuk, Gwangju/Jonnam/Jonbuk, Daejon/Chungnam/Chungbuk, and other regions.

Table 6: **Probability Models of Child Birth**

	Male			Female		
	(1)	(2)	(3)	(4)	(5)	(6)
Lunar Birthday	0.311**	0.273**	0.314*	-0.006	-0.036	-0.075
	(0.086)	(0.093)	(0.122)	(0.052)	(0.054)	(0.058)
Age	-0.424	-0.649	-1.007	-0.580*	-0.614*	-0.507
	(0.477)	(0.530)	(0.566)	(0.291)	(0.298)	(0.314)
$Age^2/100$	0.850	1.300	1.919	1.196*	1.260*	1.048
	(0.915)	(1.022)	(1.096)	(0.562)	(0.575)	(0.603)
College Expr.	0.047	0.064	0.172	-0.126*	-0.096	-0.047
	(0.091)	(0.101)	(0.117)	(0.051)	(0.054)	(0.062)
Employed	0.435**	0.441**	0.453**	-0.040	-0.050	-0.054
	(0.123)	(0.114)	(0.110)	(0.060)	(0.063)	(0.065)
Christian	-0.244*	-0.278*	-0.312**	-0.112*	-0.109	-0.113*
	(0.106)	(0.110)	(0.117)	(0.055)	(0.056)	(0.057)
Metro	0.001	-0.002	-0.064	0.041	0.055	0.045
	(0.090)	(0.099)	(0.104)	(0.052)	(0.053)	(0.054)
Log of H. Income		-0.262*	-0.225		0.008	0.003
		(0.123)	(0.122)		(0.056)	(0.059)
Father's Educ.		-0.004	-0.001		-0.021*	-0.019*
		(0.013)	(0.013)		(0.009)	(0.009)
Spouse Lunar Birthday			-0.056			0.116*
			(0.130)			(0.057)
Spouse Age			0.885*			-0.462*
			(0.371)			(0.196)
Spouse $Age^2/100$			-1.647*			0.828*
			(0.716)			(0.335)
Spouse College Expr.			-0.176			-0.061
			(0.125)			(0.059)
Region at 14	No	Yes	Yes	No	Yes	Yes
Curr. Region	Yes	Yes	Yes	Yes	Yes	Yes
Log likelihood	-93.9	-89.8	-86.6	-292.0	-288.7	-281.0
Pseudo-R^2	0.138	0.175	0.205	0.061	0.072	0.096
N	158	158	158	449	449	449

Notes. Marginal effects are reported and robust standard errors are in parentheses, * significant at 0.05; ** significant at 0.01. "Region at 14" and "Current Region" have six categories, Seoul/Inchon/Kyunggi, Pusan/Ulsan/Kyungnam, Taegu/Kyungbuk, Gwangju/Jonnam/Jonbuk, Daejon/Chungnam/Chungbuk, and other regions.