New patterns in first marriage formation in South Korea

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Introduction

Since the 1970s, South Korea (or Korea) has experienced dramatic economic development. The country has transformed from a rural, agriculturally based economy into a developed society where 90 percent of workers are employed in non-agricultural sectors (Choe 2006). The country's economic success is accompanied with tremendous social and demographic changes: education has been dramatically expanded; women have become more strongly attached to the labor force; marriage and childbearing have been delayed; pre-marital cohabitation has become more common; and the nation has experienced dramatic fertility decline, with its total fertility rate (TFR) value diving from 5.0 in 1965 to 1.15 in 2009 (Ma 2013). Korea has joined the second demographic transition (SDT), as all features of SDT except one (out-of-wed childbearing) have merged (Lesthaeghe 2010).

Some research (such as Kye 2008, Choe and Retherford 2009, and Choe and Li 2011) has addressed the marriage delay and decline in South Korea. The mean age at marriage for women increased from 23.3 years in 1970 to 28.7 years in 2005. Among women aged 30-34, the proportion of never-married increased from 1% to 19% from 1970 to 2005. The proportion for women aged 35-39 increased from 0.4% to 8% during the same period (Jones and Gubhaju 2009). Education expansion has been mainly argued to be responsible for the delay and decline. Statistics show that the proportion of female high school graduates who advanced to higher education was only 20% in 1975. This number had increased to 34% in 1985, to 50% in 1995, and to 81% in 2005 (Choe and Retherford 2009; Frejka et al. 2010). Tsuya et al. (2009:16) remark that the educational advancement of young Korean women during the last three decades is "nothing but spectacular" and "unprecedented in the recent history of the world".

Apart from education expansion, value change is also argued to have made its contribution to the decline of marriage in Korea. Marriage and procreation to carry on the family line were once women's main obligations. And women have been expected to leave the labor force upon family formation and expansion (Ma 2013). Since the 1990s, marriage and childbirth are no longer women's universal duties (Lee 2009). They are viewed as less necessary for a full and satisfying life for women, younger persons and the more highly educated (Choe 2006).

So far, we have little knowledge about how women's new life behaviors may have contributed to the new patterns in marriage formation. In this study, we explore how the trend of first marriage

formation and assortative mating in Korea has developed by factors such as women's employment and pre-marital pregnancy. We will address these issues by exploring the following research questions.

- How has the first marriage trend developed over time in Korea?
- How does the first marriage trend vary by women's employment status?
- How does the first marriage trend relate to changing patterns in assortative mating?

Theoretical framework

Marriage is not just dependent on personal characteristics such as education and employment, but also shaped by contextual factors such as economic swings and social changes. Individual preferences for different characteristics in a spouse may also contribute to the probability of marriage (Kalmijn 1991a).

The most common predictable pattern of marriage choice is socio-demographic homogamy, a similarity of spouses' characteristics (Stevens et al. 1990). Similarity promotes mutual understanding between couples and long-term intimate relationship (Kalmijn 1998). There also exist other patterns where spouses' characteristics do not match: hypergamy and hypogamy, where women and men "marry up" or "marry down" in regard to education, earnings and so on (Stevens et al. 1990).

Education is an important characteristic to be considered in spouse mating, as it is correlated with other characteristics that are important when forming a union, such as expected earnings, and a potential partner's abilities, general intelligence, values and life styles (Stevens et al. 1990; Schwartz et al. 2005). A lot of research has found that people of similar educational levels tend to be attracted to each other (Kalmijn 1991b; Mare 1991).

Data and methods

Data used for this analysis come from the Korean Labor and Income Panel Study (KLIPS) waves 1 to 10. To address the research questions, a two stage analysis was designed. At the first stage, we apply event history analysis to explore general patterns in marriage formation in Korea. We start observing a woman from the month when she turned 15 years old. Our observation stops at the occurrence of her first marriage. If no marriage event occurs, the observation is censored at the month when a woman turned age 45 or at the last interview time. Calendar years is the main explanatory variable.

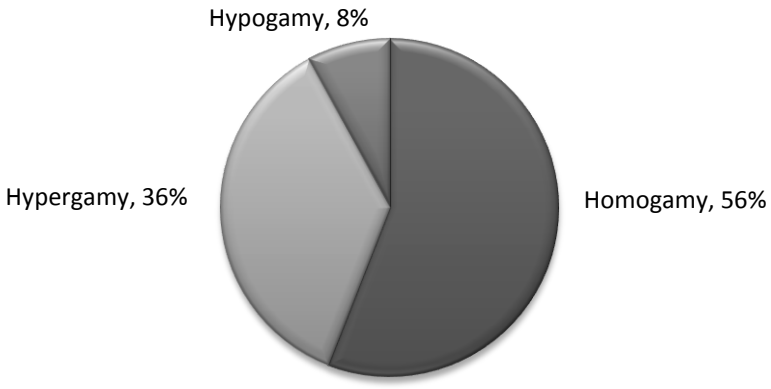
Other factors that may play important roles are held constant, including four time-varying covariates (woman's age, women's education, employment status and pre-marital pregnancy) and four fixed variables (father's and mother's education, childhood residence, and religion).

At the second stage, we estimate the competing risks of a woman marrying someone of similar, higher or lower socio-economic status in three additional hazard regression models based on the same sample as in the first stage. Educational level is used as a key indicator of women and men's socioeconomic statuses. We use the difference in educational level of men and women at the time of marriage as the outcome. An event will be defined as "homogamy" if a woman marries someone of the same educational level; "hypergamy" if she marries someone who has a higher educational level; and "hypogamy" if she marries a less educated man. Within each model, we estimate the transition to one event while censoring for the occurrence of the other two.

Results

Descriptive statistics show that 2738 out of 5796 women aged 15-45 in the sample entered marriage between 1978 and 2006. Figure 1 presents the distribution of educational homogamy, hypergamy and hypogamy of women in their first marriage. It shows that marrying someone of similar educational level is a common marriage pattern in Korea.

Figure 1: Distribution of educational homogamy, hypergamy and hypogamy of women in first marriage in Korea, 1978-2007



Source: Authors' own calculations based on KLIPS

Table 1: Relative risks of first marriage and competing risks of educational homogamy, hypergamy, and hypogamy among women in Korea, 1978-2007, standardized for other factors

	First marriage (Model 1)		Homogamy (Model 2)		Hypergamy (Model 3)		Hypogamy (Model 4)	
	Haz. Ratio	P>z	Haz. Ratio	P>z	Haz. Ratio	P>z	Haz. Ratio	P>z
Age								
15-19	0.22	***	0.06	***	0.14	***	0.03	***
20-24	1		1		1		1	
25-29	2.23	***	2.63	***	2.87	***	3.16	***
30-34	1.21	**	1.45	***	1.78	***	1.22	
35-44	0.29	***	0.25	***	0.36	***	1.40	
Father's education								
Middle school	1		1		1		1	
High school	0.89	***	0.84	***	0.84	**	1.01	
College or above	0.80	***	0.88		0.63	***	0.60	*
Mother's education								
Middle school	1		1		1		1	
High school	1.22	***	1.11		1.20	**	1.19	
College or above	1.03		1.27		0.39	*	1.13	
Childhood residence								
Seoul	1		1		1		1	
Metropolitans	1.20	***	1.14	*	1.19	*	1.51	**
Other provinces	1.45	***	1.44	***	1.42	***	1.88	***
Religion								
None	1		1		1		1	
Buddhist	1.08		1.02		1.25	***	1.01	
Protestant	1.03		0.95		1.15	*	1.04	
Catholic	0.93		0.91		1.08		0.59	*
Other	0.83		0.84		0.98		0.91	
Calendar years								
1978-1982	2.71	***	2.70	***	4.91	***	0.50	*
1983-1987	2.14	***	2.13	***	3.08	***	1.05	
1988-1992	1.89	***	1.98	***	2.04	***	1.35	
1993-1997	1.49	***	1.48	***	1.65	***	0.91	
1998-2002	1		1		1		1	
2003-2007	0.35	***	0.33	***	0.42	***	0.58	***
Employment status								
No employment	1.04		0.83	***	0.78	***	1.23	
Employed	1		1		1		1	
Employment withdrawn	2.99	***	2.92	***	3.06	***	2.41	***
Pregnancy								
No	1		1		1		1	
Yes	1.24	***	1.26	***	1.21	***	1.76	***
Education								
In-education	0.09	***						
Elementary	0.94							
Middle school	1.12	*						
High school	1							
Junior college	1.08							
University or above	1.33	***						
No. of women	5296		5296		5296		5296	
No. of first marriages	2738		1531		991		216	
Time at risk	602980		602980		602980		602980	

Source: Authors' own calculations based on KLIPS

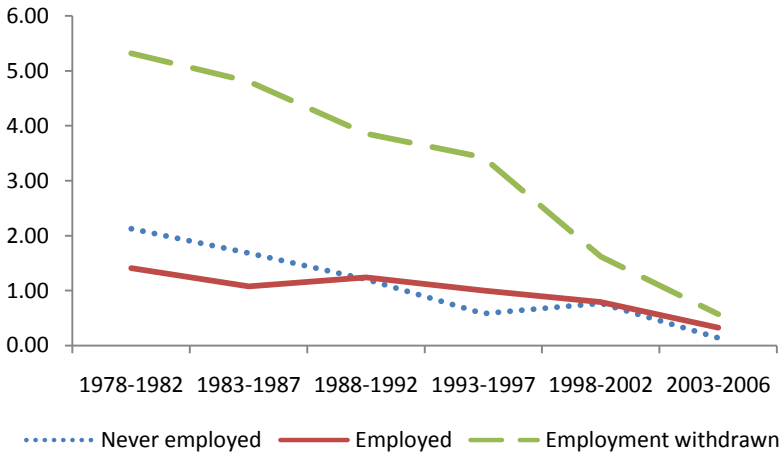
Model 1 in Table 1 presents the relative risks of first marriage in Korea from the main effects model. Estimation of calendar years shows a clear-cut reduction of first marriage rates over time. Women who withdraw from the labor market have higher probability to enter marriage life than those currently employed and women with no work experience. It suggests that leaving jobs for marriage is a common practice among Korean women. Leaving is a signal of family formation. Women who are pregnant have a stronger intensity to form a family than women who are not.

Estimation of other factors show that women who grew up in rural provinces are the most likely to get married and women who grew up in the Seoul Capital Area are the least. Father's educational level plays a negative role in daughter's likelihood to enter marriage; the role of mother's educational level is not as clear. Religion does not make a difference to women's marriage intensity. But still we can see women believing in Buddism have slightly higher likelihood of getting married than others. Ages 25-29 is the peak time of first marriage. Women in education have the lowest rate of marriage; university and middle school graduates have relatively higher marriage rate than others, all else equal.

Results from interaction model between women's employment status and calendar years reveal some remarkable findings. Figure 2 shows that up to the late 1970s, women who had left the labor force had extremely high probability of getting married. After 1997 their marriage intensities declined sharply. The results show that the old practice of quitting jobs before marriage has lost prevalence over time. The Asian financial crisis that broke out in 1997 seems to have triggered a dramatic abandoning of this marriage behavior. In comparison, the marriage trend of currently employed women has remained stable. Women with no employment experience had slightly higher marriage intensity than women in the labor force during the 1970s and 1980s. Starting from the early 1990s, this marriage behavior has the lowest probability to occur. The difference across employment status became very small during the last calendar period of our observation time.

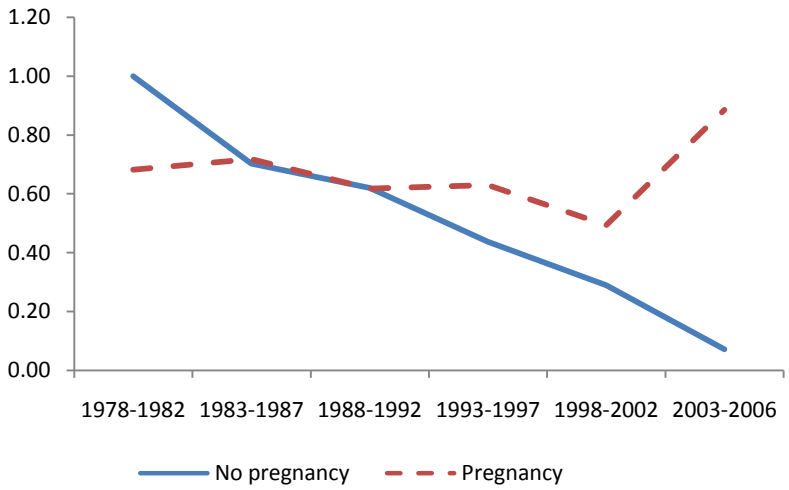
Pre-marital cohabitation has become increasingly common in Korean society. Figure 3 presents the interactive effect of pre-marital pregnancy and calendar years. Entering marriage without pregnancy was a typical marriage behavior in the 1970s. From the 1980s, this marriage pattern started losing its prevalence; instead, the trend of forming a family while pregnant has remained stable during the first few calendar periods. Over the turn of the new century, this marriage pattern gained noticeable prevalence. The result suggests that pre-marital cohabitation and pregnancy has become a much more common preparatory stage of getting married in modern Korean society.

Figure 2: First marriage intensity by calendar years and women's employment status, South Korea, 1978-2007 (Ref: Employed, 1993-1997)



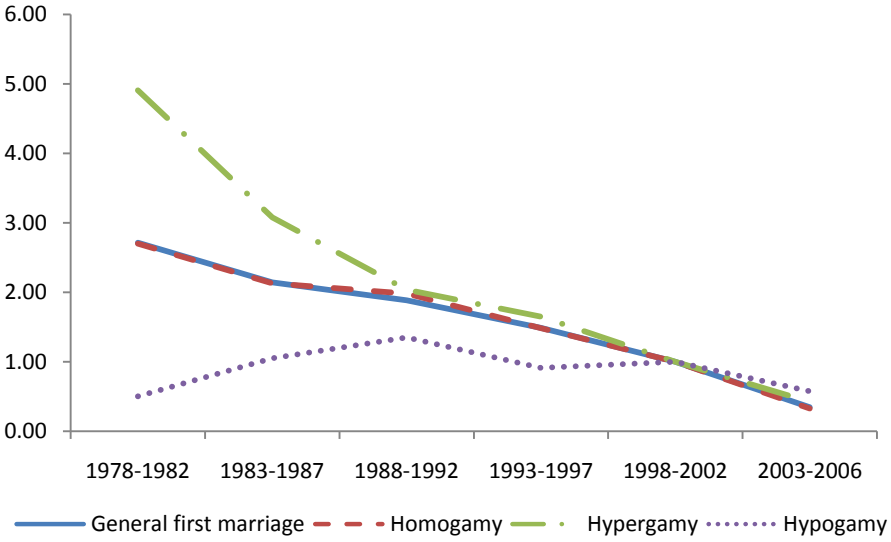
Source: Authors' own calculations based on KLIPS

Figure 3: First marriage intensity by calendar years and pre-marital pregnancy, South Korea, 1978-2007 (Ref: No pregnancy, 1978-1982)



Source: Authors' own calculations based on KLIPS

Figure 4: Over-time trends of first marriage, marrying equal, marrying up and marrying down from four separate models (ref: 1998-2002)



Source: Authors' own calculations based on KLIPS

Models 2 to 4 in Table 1 presents the competing risks for women to marry someone with the same, higher or lower educational level from three separate main effects models. Estimations of most variables are in line with the results from Model 1. Figure 4 shows the general over-time trend of first marriage from Model 1 and the trends of marriage into educational homogamy, hypergamy and hypogamy. It is clear that the trend of homogamy resembles the trend of general first marriage: a clear-cut decline since the 1970s. Hypergamy was very prominent during the early calendar period. However, this pattern of marriage completely lost its prevalence around the 1990s. There was no sign of any resumption at all by the end of our observation time. The probability of marrying a man of lower educational level has been rather low and stable.

Some other findings from the competing models deserve a note. Women believing in Buddhism have a strong tendency to marry upwards. The probability of marrying someone of lower status is especially pronounced among pregnant women. It implies that when a new life is expected, husband's socio-economic status somewhat matters less in the formation of a family.

Conclusion

Previous studies related to family formation in Korea have mainly focused on the role of education expansion on the decline of marriage. This study explored new patterns and trends in first marriage formation in Modern Korea where rise in female educational attainment and increase in female labor

force participation have been noticeable and pre-marital cohabitation has become gradually common.

The results show a clear-cut decline of first marriage trend over time. Withdrawing from the labor force before marriage, which was once a prominent pattern of marriage entry in the 1970s-1990s, has substantially lost its prevalence from the late 1990s. The marriage trend of employed women has remained very stable over time. We also find that pre-marital pregnancy increases the likelihood of getting married. The trend of entering marriage while pregnant was stable up to the late 1990s. At the turn of the new century, there appeared an upsurge in this marriage behavior.

Educational homogamy has been a main-stream marriage behavior in Korea. The probability of hypogamy has been rather low over time. In the 1970s and the 1980s, hypergamy was very prominent in women's marriage. This was probably partly because women at that time were generally less educated and had little economic independence. They has to rely on a man of similar or higher social status who would provide necessary economic resources for the future family. It also reflects that men also relied on a subordinate woman who could take good care of the family while he acted as the sole bread winner of the household. However, since the 1990s the probability for women to marry a man of higher educational level substantially decreased. With women becoming highly educated, the probability for them to marry someone of higher education is disappearing.

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Appendix 1: Descriptive statistics for variables in the main effects model on first marriage

	Person-months		First marriages	
Woman's age				
15-19	239642	40%	97	4%
20-24	230409	38%	1295	47%
25-29	95553	16%	1200	44%
30-34	25270	4%	128	5%
35-44	12106	2%	18	1%
Father's education				
Middle school or below	210666	35%	1406	51%
High school	297656	49%	1052	38%
College or above	94658	16%	280	10%
Mother's education				
Middle school or below	390290	65%	2159	79%
High school	192208	32%	545	20%
College or above	20482	3%	34	1%
Childhood residence				
Seoul	235538	39%	780	28%
Metropolitans	127475	21%	478	17%
Other provinces	239967	40%	1480	54%
Religion				
None	298611	50%	1180	43%
Buddhist	103944	17%	632	23%
Protestant	140537	23%	658	24%
Catholic	51645	9%	233	9%
Other	8243	1%	35	1%
Calendar years				
1978-1982	69483	12%	478	17%
1983-1987	77202	13%	496	18%
1988-1992	93579	16%	526	19%
1993-1997	111459	18%	497	18%
1998-2002	123568	20%	513	19%
2003-2006	127689	21%	228	8%
Employment status				
No employment	330576	55%	656	24%
Employed	199365	33%	996	36%
Employment withdrawn	73039	12%	1086	40%
Pre-marital pregnancy				
No	488904	81%	1894	69%
Yes	114076	19%	844	31%
Education				
In-education	251265	42%	52	2%
Elementary	15839	3%	129	5%
Middle school	42457	7%	303	11%
High school	185493	31%	1433	52%
Junior college	49802	8%	342	12%
University or above	58124	10%	479	17%
Total	**602980**			**2738**

Appendix 2: Descriptive statistics for variables of the competing models on educational homogamy, hypergamy and hypogamy

	Homogamy				Hypergamy				Hypogamy			
	Person-months		Marriages		Person-months		Marriages		Person-months		Marriages	
Age												
15-19	239642	40%	41	3%	239642	40%	53	5%	239642	40%	3	1%
20-24	230409	38%	743	49%	230409	38%	462	47%	230409	38%	90	42%
25-29	95553	16%	670	44%	95553	16%	421	42%	95553	16%	109	50%
30-34	25270	4%	70	5%	25270	4%	49	5%	25270	4%	9	4%
35-44	12106	2%	7	0%	12106	2%	6	1%	12106	2%	5	2%
Father's education												
Middle school or below	210666	35%	773	50%	210666	35%	542	55%	210666	35%	91	42%
High school	297656	49%	576	38%	297656	49%	369	37%	297656	49%	107	50%
College or above	94658	16%	182	12%	94658	16%	80	8%	94658	16%	18	8%
Mother's education												
Middle school or below	390290	65%	1203	79%	390290	65%	801	81%	390290	65%	155	72%
High school	192208	32%	301	20%	192208	32%	186	19%	192208	32%	58	27%
College or above	20482	3%	27	2%	20482	3%	4	0%	20482	3%	3	1%
Childhood residence												
Seoul	235538	39%	447	29%	235538	39%	277	28%	235538	39%	56	26%
Metropolitans	127475	21%	262	17%	127475	21%	171	17%	127475	21%	45	21%
Other provinces	239967	40%	822	54%	239967	40%	543	55%	239967	40%	115	53%
Religion												
None	298611	50%	687	45%	298611	50%	385	39%	298611	50%	108	50%
Buddhist	103944	17%	336	22%	103944	17%	254	26%	103944	17%	42	19%
Protestant	140537	23%	356	23%	140537	23%	250	25%	140537	23%	52	24%
Catholic	51645	9%	133	9%	51645	9%	89	9%	51645	9%	11	5%
Other	8243	1%	19	1%	8243	1%	13	1%	8243	1%	3	1%

Appendix 2: Continued

	Homogamy				Hypergamy				Hypogamy			
	Person-months		Marriages		Person-months		Marriages		Person-months		Marriages	
Calendar years												
1978-1982	69483	12%	240	16%	69483	12%	228	23%	69483	12%	10	5%
1983-1987	77202	13%	268	18%	77202	13%	200	20%	77202	13%	28	13%
1988-1992	93579	16%	315	21%	93579	16%	167	17%	93579	16%	44	20%
1993-1997	111459	18%	294	19%	111459	18%	166	17%	111459	18%	37	17%
1998-2002	123568	20%	300	20%	123568	20%	154	16%	123568	20%	59	27%
2003-2006	127689	21%	114	7%	127689	21%	76	8%	127689	21%	38	18%
Employment status												
No employment	330576	55%	357	23%	330576	55%	242	24%	330576	55%	57	26%
Employed	199365	33%	562	37%	199365	33%	353	36%	199365	33%	81	38%
Employment withdrawn	73039	12%	612	40%	73039	12%	396	40%	73039	12%	78	36%
Pre-marital pregnancy												
No	488904	81%	1066	70%	488904	81%	681	69%	488904	81%	147	68%
Yes	114076	19%	465	30%	114076	19%	310	31%	114076	19%	69	32%
Total	602890		1531		602890		991		602890		216	