

# **The Postponement and Recuperation of First Marriage and Its Educational Difference in South Korea: Cohort Analysis**

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## **Abstract**

Marriage is an important social institution associated with the transition into adulthood and childbearing in many societies. Childbearing and marriage are inseparable yet, particularly in East Asia, and aging of childbearing is closely related to the postponement of marriage in this area. A body of literature suggests that women's educational attainment plays an important role in the timing of first marriage and marriage rate. Despite widespread interest in low fertility, research on the postponement and recuperation of first marriage in low fertility context remains unexplored. The sustained increase in age at first marriage without much change in the proportion of never-married among older women implies that considerable proportion of delayed marriage is recuperated later in East Asia. With a series of Korean Census samples data, this study investigates the postponement and recuperation of first marriage in South Korea, one of the lowest-low fertility countries, and also examines how it differs across women's educational levels. The result of this study provides evidence that the pattern of family formation is diverged by women's educational levels in South Korea.

## EXTENDED ABSTRACT

Marriage is an important social institution associated with the transition into adulthood and childbearing in many societies. As the entry into sexual unions is regarded as one of the most important proximate determinants of fertility (Bongaarts 1982; Davis and Blake 1956), timing of first marriage and marriage rate have been of interest in demography. Age at first marriage and marriage rate are closely associated with fertility outcomes. Age at marriage influences number of children, birth timing and birth spacing, the periodical interval between generations. Marriage also affects women's health and welfare (Goldman, Korenman, and Weinstein 1995; Hu and Goldman 1990; Waite 1995). The literature on marriage stresses that understanding marriage timing helps to understand subsequent life course transitions associated with marriage, such as childbearing, parenthood, divorce, educational attainment and labor force participation.

As age at first marriage increases, the effect of women's educational attainment on marriage attracts much attention (Blossfeld 1995; Goldstein and Kenney 2001; Jones and Gubhaju 2009; Ono 2003; Raymo 2003; Raymo and Iwasawa 2005). Empirical studies demonstrate that the relationship between women's education and marriage rate is not static, but dynamic according to socio-cultural context of each society (Blossfeld 1995; Goldstein and Kenney 2001; Ono 2003). According to Blossfeld (1995), the negative effect of education on marriage is stronger in gender-inegalitarian societies. Analyzing educational influence on marriage, a few studies distinguish nonmarriage from late marriage and conclude that educational effect on marriage timing differs from that on lifetime singlehood (Goldstein and Kenney 2001; Raymo 2003). In terms of the education-marriage relation, however, our understanding is still limited. In countries with low fertility, the postponement and recuperation (P & R) of marriage remains unexplored yet. Although a few studies report that recent decline in marriage rate is partly due to the 'tempo effect' of increasing age at first marriage (Schoen and Canudas-Romo 2005; Winkler-Dworak and Engelhardt. 2004; see also Bongaarts and Feeney 1998 for tempo effect), cohort change in P & R of marriage and its educational difference are shrouded in mist.

In this study, I explore educational difference in the P & R process of first marriage in South Korea. This study has several motivations. First, empirical evidence from different cultural contexts contributes to the debates on education-marriage relationship. In terms of the education-marriage relation, the results in previous studies are mixed. In most cases, highly educated women are associated with later and less marriage (ex. Raymo 2003). However, the relationship between education and marriage is often reversed in some countries (Blossfeld 1995; Goldstein and Kenny 2001; Ono 2003). To generalize the relationship, more research is needed.

Second, I am interested in identifying educational difference in the P & R process of first marriage. In the discussion on low fertility, it is well known that transition of childbearing to later age is one of the main causes of low fertility in most countries in Europe and East Asia (Frejka and Sardon 2004; Sobotka and Toulemon 2008). In particular, given the strong connection of marriage with childbearing in East Asia, how childbearing is postponed and how it affects overall fertility are very important issues. However, an increase in age at childbearing is not independent of change in age at first marriage, and in most cases both comes together. Despite widespread interest in low fertility, research on this topic is restricted to only adjusting tempo effect of first marriage (Schoen and Canudas-Romo 2005; Winkler-Dworak and Engelhardt. 2004). This study examines whether postponing first marriage varies with women's educational attainment in low fertility context.

Lastly, first marriage is the most important intermediate for fertility, particularly in countries where most childbearing occurs within marital union, like South Korea. Considerable proportion of fertility decline in a recent couple of decades is attributable to postponement of first marriage (Jun 2005; Kim 2005). Despite its significance of first marriage, the overall trend of changes in age at first marriage is not known yet. Official statistics provided by Korea National Statistics Office contain only the mean age at first marriage for each year, which is often distorted by 'tempo effect'. This study provides not only the overall trend of first marriage, but also demonstrates education-specific P & R of first marriage in South Korea.

## **Timing of marriage and women's educational attainment**

### ***Microeconomic perspective***

Many theories explain why and how education affects marriage. Microeconomic perspective looks at marriage with cost-benefit scheme. In this perspective, people benefit from marriage through specializing men for outside paid work and women for domestic work and childcare, then trading its advantages (Becker 1981). As a consequence, for women with higher education, marriage becomes a less attractive: as higher educated women with high earning potentials gains economic independence on men, they do not need to rely on men's productivity any more. Hence, women are more likely to remain as single as their educational attainment increases.

Basically this economic independence hypothesis is an argument about nonmarriage, but is not supported by empirical studies (Goldstein and Kenny 2001; Oppenheimer 1997). According to Oppenheimer (1997), increased educational attainment does not link to nonmarriage, but only delay the entry age into marriage: When school enrollment is controlled, rather higher education often increases the risk of marriage. Searching for a suitable partner needs substantial time and efforts, women with higher education have more resources to overcome the demanding search process than less educated women (Raymo 1988). Though women's educational gains partly delay first marriage, male partner's economic situation is much important in determining marriage timing yet (Oppenheimer and Lewis 2000).

The individual-level relationship between education and marriage also varies with country, time period, and birth cohort. A few studies report that education-marriage relationship is positive or insignificant in less traditional societies, while it is strongly negative in most traditional societies (Blossfel 1995; Ono 2003). Testing this hypothesis in Japan where is a strong gender-inegalitarian society, Raymo (2003) concludes that the education has strong negative relationship with marriage in Japan, and more educated women are more likely to remain single. However, he also finds that women increasingly marry at later age for all educational levels.

Marriage remains almost universal yet in East Asia, despite serious low fertility. Jones and Gubhaju (2009) report that the proportion of never-married among women ages 45-49 is less than 10% in China (0.3%), Japan (8%), Taiwan (7%), and South Korea (2%) in 2005. By contrast, age at first marriage has continuously increased for recent decades in this area, which suggest considerable recuperation of delayed marriage among older women. The postponement of first marriage without much rise in nonmarriage in this region is consistent to the Oppenheimer's hypothesis that women's education only delays marriage, but does not have negative effect on lifetime singlehood. Notwithstanding, this hypothesis fails to reflect current changes of marriage in low fertility context. For instance, compositional change in women's educational education accounts for only part of change in the timing of first marriage (Jones and Gubhaju 2009). Assuming static relationship between women's education and marriage, micro-economic perspectives have obvious limits in explaining overall increase in age at first marriage across all educational levels in East Asia.

### ***Low fertility context and postponement of marriage***

Changes in marriage timing and levels may reflect broader social transformation. Recent demographic changes in developed countries are closely related to ideational or cultural shift (Lesthaeghe, R. and K. Neels. 2002; Surkyn and Lesthaeghe 2004). According to the theory of Second Demographic Transition (SDT), once the basic demand for materials is satisfied, people tend to prioritize higher order needs, emphasized self-actualization, individual autonomy and recognition. As socio-economic development proceeds, demographic changes, such as sustained low fertility, diversified living arrangement and separation of childbearing from marital union, are inevitable, because family-related institution hinders from realization of individual goals and achievement. In this perspective, marriage becomes less desirable and is not necessary for childbearing. With some exceptions like Sweden (Ohlsson-Wijk 2011), in most countries in Europe the mean age at first marriage has increased, and marriage rate has declined for recent decades (Lesthaeghe and Moors 2000; Sobotka and Toulemon 2008). In East Asia, increasing age at first marriage appears in all educational levels (Jones and Gubhaju 2009; Raymo 2003; Woo 2012). Though its

extent varies with country and region, it is not too much to say that the postponement of childbearing is overall trends in industrialized societies.

The demographic outcomes associated with an increase in marriage timing are different by region. In Western and Central Europe, the postponement of first marriage is connected to increases in nonmarital births, suggesting the trend of deinstitutionalizing marriage. In Europe and the US, considerable proportion of marriage is replaced by cohabitation (Sobotka and Toulemon 2008). Even in Southern Europe where the most traditional family system remains, such as Italy and Spain, births out of wedlock have significantly increased in recent years. Meanwhile, the postponement of first marriage in East Asia is closely linked to the delayed childbearing, rather than nonmarriage (Jones and Gubhaju 2009). As childbearing is not separated from family institution yet, the effect of delaying first marriage on fertility is still substantial in this area.

The literature on the postponement of first marriage is lack in incorporating low fertility context in its discussion yet. Though a few studies differentiate marriage delay from marriage foregone, interpreting the relevance between two in low fertility context remains limited. As shown in the review above, not all delayed marriages are connected to nonmarriage, which indicates considerable P & R of first marriage. The literature on marriage timing tends to focus on only delaying marriage, without considering its recovery. Failure to recognize recuperation of delayed marriage misleads the nature of contemporary demographic phenomenon. In recent years, a few investigate this postponement and recuperation of first marriage in European countries (Schoen and Canudas-Romo 2005; Sobotka and Toulemon 2008; Winkler-Dworak and Engelhardt. 2004). However, the questions, how the P & R of first marriage is like in out of Europe and whether it is differentiated by social strata like educational attainment, remains unanswered.

#### *Research questions*

Is there educational difference in the timing of first marriage and nonmarriage?

Do recent birth cohorts more postponement their first marriage than in the past?

How does educational difference change over time?

Does the extent of postponement and recuperation of first marriage differ across different educational levels?

How does educational difference in nonmarriage differ from that in age at first marriage?

### **Data and Methods**

#### *Data*

This study utilizes Korean Census samples data between 1970 and 2010.

A few Korean censuses ask female respondents about their marital status and age at first marriage. Besides marital status, Census data also provide basic demographics, such as age, sex, and educational attainment. Extracting women ages 40-55 from each available census data, I construct pooled data with birth cohort, age, educational attainment, and first marriage. Utilizing life-table method, I reconstruct marriage schedule for different birth cohorts and different educational levels. Based on the marriage schedules, I examine difference in timing of first marriage.

#### *Methods*

The analytic part of this study consists of three phases: constructing life-table, analyzing P & R process, and projecting further change in first marriage. First, this study begins with constructing cohort life-table of first marriage. Life-table method is originally developed to estimate probability of death at a certain age in mortality studies, which is logically equivalent to survival analysis. Regarding first marriage as a death, I create marriage life-table for all birth cohorts and educational levels.

Second, I employ the cohort analysis of postponement and recuperation, which has been developed by several demographers, mainly by Tomas Frejka (Frejka 2012; Frejka and Calot 2001; Frejka and Sardon 2004; Lesthaeghe 2001). Indeed, 'postponement' is very subjective meaning, and it is difficult to decide how to define it. In the previous studies (see Frejka and Sardon 2004 and Sobotka et al 2011), the

concepts of postponement and recuperation of fertility are measured by contrasting fertility schedule for any cohort of interest to reference cohort, which labeled as the benchmark (*b*). For example, borrowing their terminology, postponement of fertility is assessed by cumulating decline in age-specific fertility rates when fertility has fallen relative to the benchmark, an older reference cohort. Similarly, recuperation is measured by cumulating increases in age-specific fertility rates when fertility has increased relative to the benchmark. Both postponement and recuperation can be either absolute or relative according to researcher's interest. As the objective of this study is to look at the P & R process of first marriage, I apply this cohort analysis method of the P & R of childbearing to the P & R of first marriage. Figure 1 illustrates this approach, using hypothetical benchmark cohort *b* and cohort of interest *c*.

*<Figure 1 is about here>*

In the figure, which contrast cumulated ever-married rate of cohort *c* to that of the reference cohort *b*, final difference in marriage rate ( $FD_c$ ) is decomposed into postponement ( $P_c$ ) and recuperation ( $R_c$ ) parts ( $FD_c = P_c + R_c$ ). A recuperation index ( $RI_c$ ) is also measured by the ratio of recuperation to negative value of postponement ( $RI_c = R_c / -P_c$ ). This approach not only allows us to quantify the postponement and recuperation of first marriage, but also provides some outcomes to be used for projection.

Lastly, based on outcomes from the procedure described above, I conduct projection of first marriage, focusing on estimating remaining single at the end of reproductive age. However, to avoid unrealistic projection, projecting marriage rate is restricted for birth cohorts who already passed the trough (the lowest difference in cumulated marriage rate). This work enables to evaluate the never-married proportion at the end of reproductive age and its educational differential. As a consequence, all these procedures facilitate understanding the P & R of first marriage and how it is related to women's educational attainment.

### **Preliminary results**

The probabilities of remaining single by age for birth cohort 1956-60 to 1981-85 are illustrated in Figure 2. The solid line for birth cohort 1956-60 is located the far left side in the figure, indicating earlier marriage. The proportion of never-married women at age 44 is around 5 % of the birth cohort. The rest all lines for subsequent birth cohorts places in right side, compared to the line for birth cohort 1956-60, suggesting postponement of first marriage. Because most of those cohorts did not reach the end of reproductive period, it is impossible to evaluate lifetime singlehood. Given the trend of marriage schedule across birth cohorts, remaining single may be higher than that for previous cohort. However, in figure 1, it is hard to see how much each cohort postpone and recuperate first marriage.

*<Figure 2 is about here>*

Setting up the birth cohort 1956-60 as the benchmark, differences in cumulated rates of first marriage by age are illustrated in figure 3. It also demonstrates how much each birth cohort postpones marriage and recuperates it according to their age. The extent of postponement and recuperation depends on the marriage schedule of the benchmark cohort. When we say the lowest value of each line 'the trough', it becomes a turning point, which divides between postponement and recuperation. Before the trough, the lines describe the extent of marriage postponement, whereas the lines after the trough indicate the extent of recuperation of delayed marriage. In figure 3, the pattern of first marriage demonstrates recent cohorts delay first marriage more, compared to the benchmark cohort, but also shows considerable 'catch-up' effect among corresponding cohorts once it passes the trough. Figure 4 illustrates educational difference in this P & R of first marriage.

*<Figure 3 is about here>*

*<Figure 4 is about here>*

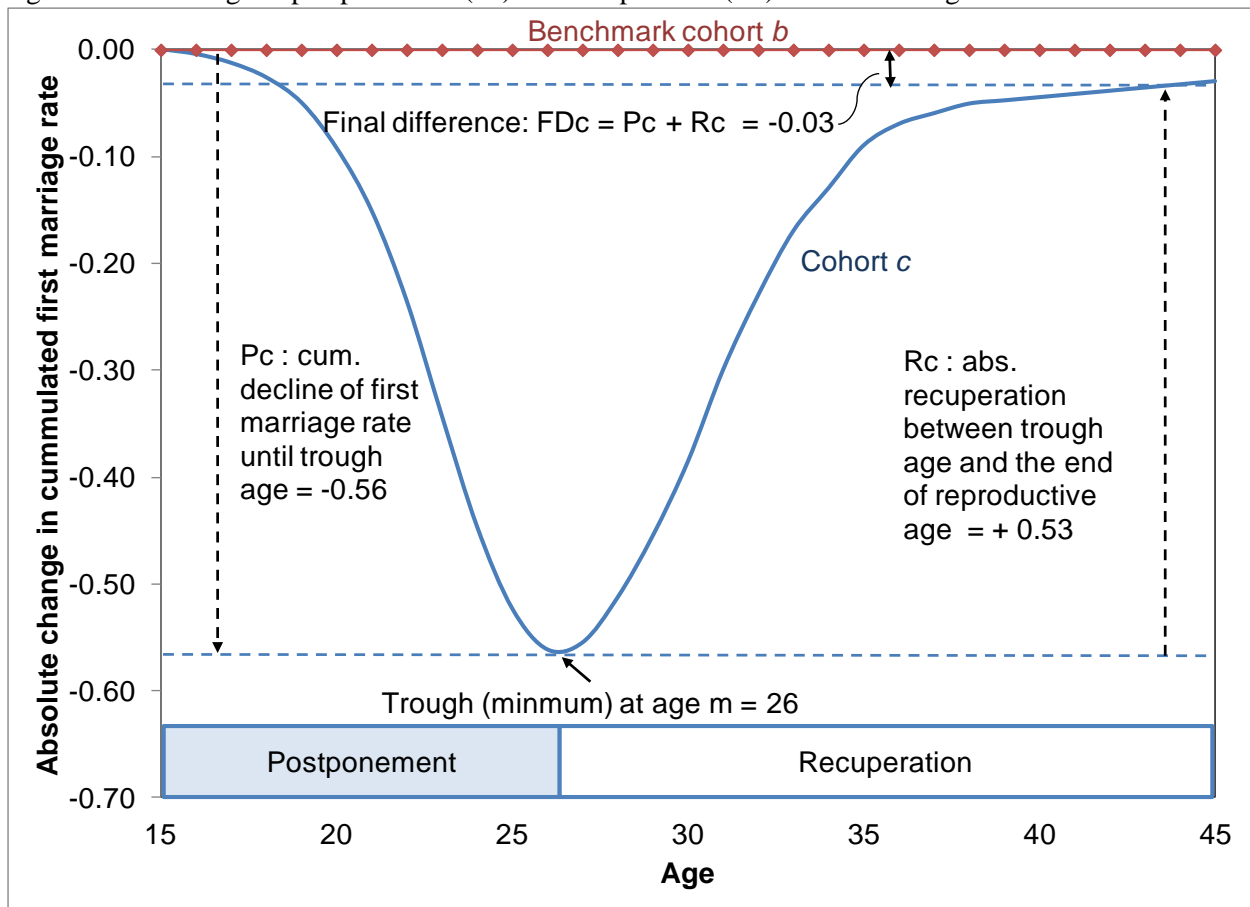
**The Final Version** of this study will contain further analyses on the postponement and recuperation of first marriage including marriage projection, interpretation of results, and detailed discussion on its consequence and policy implications.

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Figure 1. Measuring the postponement (Pc) and recuperation (Rc) of first marriage



Source: Frejka (2012) and Sobotka et al. (2011).



Figure 2. The trend of women's age at first marriage for birth cohort 1956-60 to 1981-85, South Korea

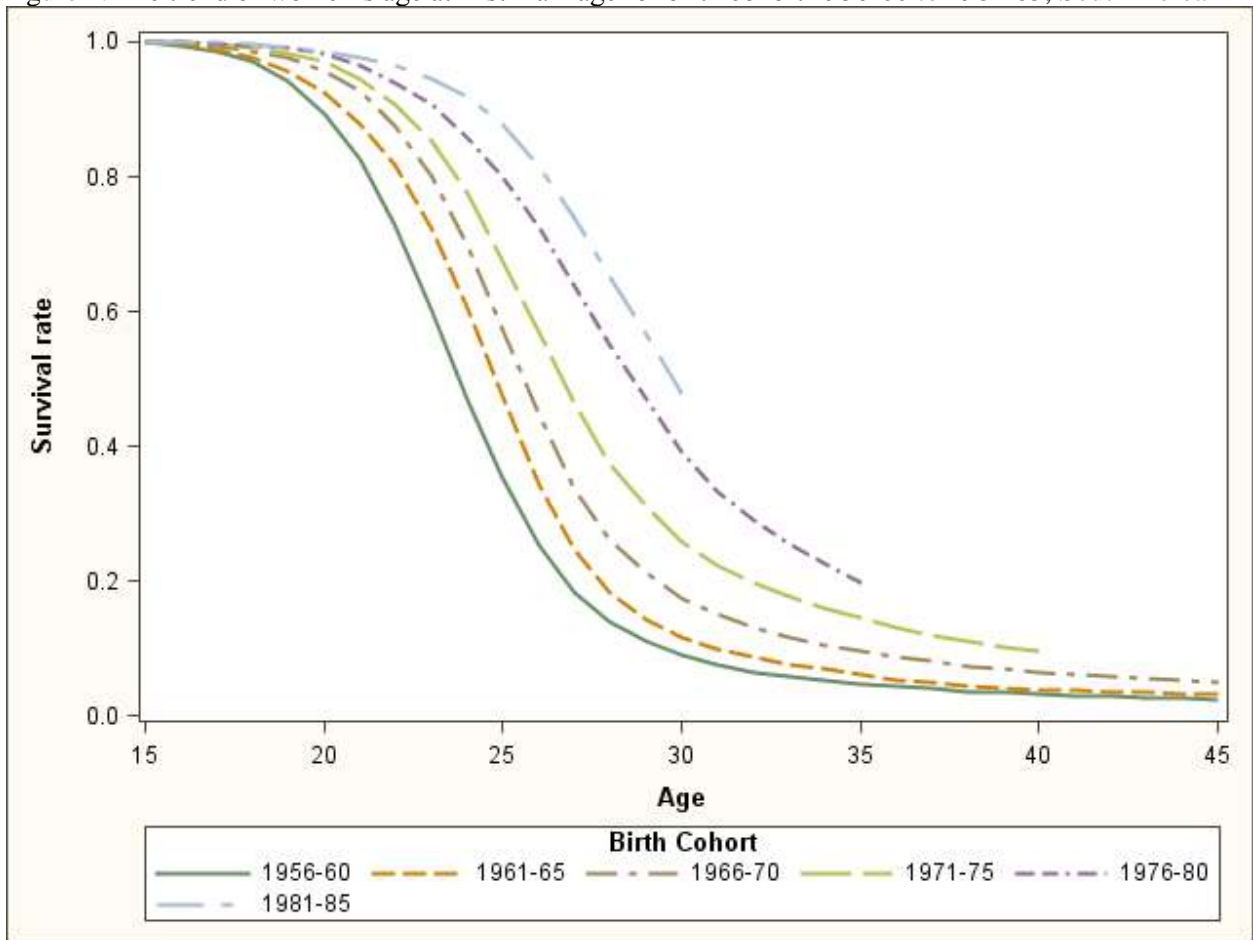


Figure 3. The postponement and recuperation of first marriage for birth cohort 1956-60 to 1981-85, South Korea

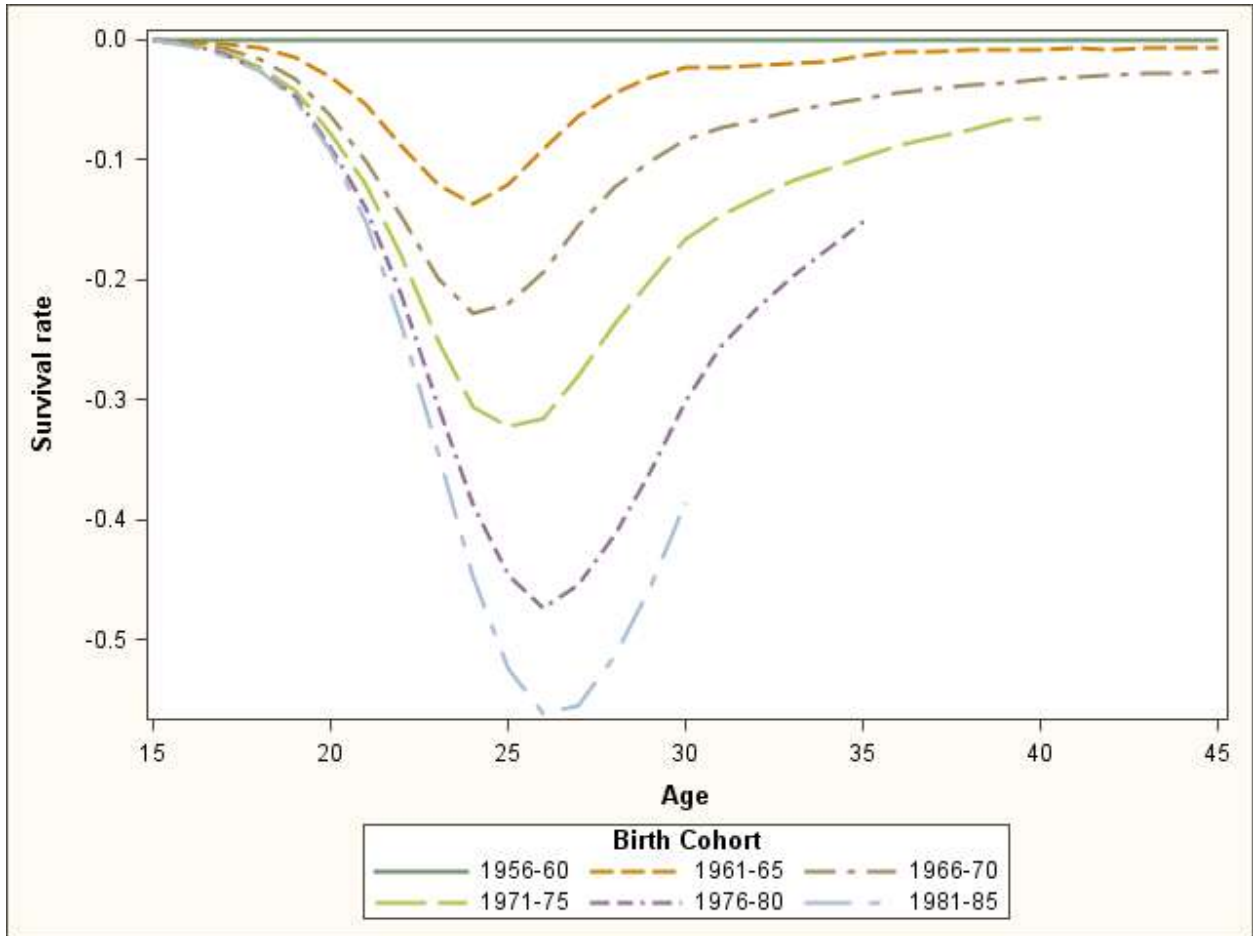


Figure 4. The postponement and recuperation of first marriage for birth cohort 1956-60 to 1981-85 by women's educational levels, South Korea

