

Early Marriage in Taiwan: Evidence From Panel Data

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Abstract

Using data from the TYP (Taiwan Youth Project) panel survey, we examine factors associated with early marriages in Taiwan and the subsequent risks for negative outcomes in family life and career trajectories. About 7% of Taiwanese people marry early, that is, before the age of 28 years. Among those who marry early, more than 60% report the birth of a child within the first 8 months of marriage (i.e., they form postconception “shotgun” marriages). Compared with the never married respondents, individuals in both preconception and postconception early marriages are likely to come from families of low socioeconomic status. Nonworking young adults and those experiencing parental divorce or parental death during adolescence are at higher risk of entering postconception marriages than those remaining single. Particularly for nonemployed young people and those from lower socioeconomic status background, early marriage means taking on adult responsibilities in a disadvantaged state.

Keywords

early marriage, postconception, preconception

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The widespread second demographic transition that features delayed first marriage, declining fertility, rising marital dissolution, and nonmarital births seems to obscure the future of family. Cherlin (2004), seeing the plunging marriage and birth rates, suggests that "the interesting question is not why so few people are marrying, but rather, why so many people are marrying . . ." (Cherlin, 2004, p. 854). Nevertheless, contradicting the powerful trend of delayed marriage and childbearing, many people still marry young. For example, based on data from a U.S. survey collected between 1994 and 2002 (Uecker & Stokes, 2008), at least 25% of American women and 16% of American men entered marriage before age 23.

Although the second demographic transition has taken place in most societies, the extent to which marriage is delayed and childbearing is declining varies by country. For instance, during the early 2010s, the average age at first marriage for women in India was 22 years, while in Sweden it was 33 years (United Nations Economic Commission for Europe, 2016). Interestingly, societies that have been traditionally considered family-oriented, such as those in Southern Europe and East Asia, are among those that now have the lowest marriage and fertility rates. Taiwan is one of the most dramatic examples of these trends. For most of the 20th century, one of the most significant duties of filial piety in Taiwan was to continue the family line; thus, marriage occurred early and fertility was high. However, by 2010, Taiwan recorded the lowest total fertility rate in the world: 0.9 (Ministry of the Interior, 2016). Taiwan has become a laboratory for examining the causes and consequences of these trends.

While a disproportionately large part of research in Taiwan and other East Asian countries is focused on late marriage and low fertility (e.g., Cheng, 2014; Jones, 2007; Yang, Li, & Chen, 2006), very few studies have investigated early marriage. Extending the concern for early marriage indicated by Uecker and Stokes (2008) to the East Asian social setting, this research aims to examine early marriage in Taiwan for at least two reasons. First, the family formation pattern in Taiwan has some unique features that may provide insight into why some young people deviate from the trend toward delayed marriage and childbearing. For example, in Western societies nonmarital cohabitation and out-of-wedlock births are common, but in Taiwan, like several other East Asian societies, childbearing mainly takes place within marriage. A nonmarital pregnancy is likely to be "legitimated" by a quick legal marriage or followed by an abortion (Raymo & Iwasawa, 2008). This and other normative pressures may result in unique correlates of early marriage in Taiwan.

Second, young people who enter early marriages because of pregnancy have particular needs that should be taken into account by policy makers. A

large proportion of these individuals come from disadvantaged groups (Gibson-Davis & Rackin, 2014; Lichter, Sassler, & Turner, 2014; Wu, 2015); and their pathways into marriage and parenthood can lead to even more severe levels of disadvantage (Rackin & Gibson-Davis, 2012). As Arnett (2000) suggests that young adulthood is usually packed with life transitions, including the completion of education, leaving parental home, and entering the labor market. When a preconception or postconception marriage is squeezed into this period, young adults are likely to be overloaded with financial and child care responsibilities, which in turn may lead to interruptions of the young parents' educational plans, and ultimately may have a cumulative negative impact on their career development and lifetime income (Budig & England, 2001). In other words, forming a family at young ages may embark on a process of cumulative disadvantage and increasing inequalities over time (Dannefer, 2003). Thus, it is important that we understand the factors that lead young people to marry and begin childbearing early.

Our research questions are as follows:

Research Question 1: What are the factors associated with entering a marital union and beginning childbearing at a young age in Taiwan? (a) Are the factors associated with early marriage and parenthood in Taiwan different from those found in Western societies? (b) To what extent is premarital pregnancy an important factor leading to early marriage in Taiwan?

Research Question 2: Are postconception and preconception marriages among Taiwanese young adults associated with different determinants?

Redefining Early Marriage in Taiwan

In reports by the World Health Organization, early marriage has often been considered as being synonymous with child marriage (Human Rights Watch, 2017; United Nations International Children's Emergency Fund, 2001). Although early marriage is not explicitly defined as a marital union in which one or both spouses are younger than 18 years, 18 years is frequently cited as a cutoff age in definitions of early marriage. A number of other studies have used a more flexible definition, describing "early" marriages as those who enter marriage in their late teens or early 20s (South, 2001; Uecker & Stokes, 2008).

In fact, whether a marital union is defined as occurring early or late is relative, usually depending on the norms or general trend of marital timing in a given society. To gain a better understanding of early marriage in Taiwan, we must closely examine the trend of marital timing in contemporary Taiwan. In recent decades, the age of first marriage has been significantly postponed.

For example, in 2016, the median age of first marriages reached 32 years for Taiwanese men and 30 years for Taiwanese women (Ministry of the Interior, 2016). Furthermore, in 2013, about 79% of females and 85% of males aged 25 to 29 years had never been married (Directorate-General of Budget, Accounting, and Statistics, 2013). Thus, today in Taiwan, it is reasonable to view as early marriages marital unions by people in their mid-20s.

We note that early marriage does not necessarily refer solely to age. A marital union may be considered to be early if the physical, psychological, and sexual development of an individual is such that the person is unready to establish his or her own family. Marriage may also be labelled as early if the timing of the union interrupts personal educational attainment or limits one's career opportunities (Women Living Under Muslim Laws, 2013).

Extending the definition of early marriage to those getting married in their mid-20s or even late 20s has important implications for the study of family change and policy making. As previous studies have revealed (South, 2001; Uecker & Stokes, 2008), early marriage is usually associated with various forms of disadvantage. The pursuit of higher education suggests a later but steady progression in one's work career. On the other hand, having a family in one's mid-20s, when most young adults are still engaged in schooling or just starting their careers, will likely interrupt the accumulation of personal capital. In light of this, although much of the research on early marriage has focused on marriages formed by the ages of 18 years or early 20s, in this study, we slightly extend that age range to consider individuals who enter their first marriage by their mid-20s (i.e., 24-27 years) as entering into early marriages.

Macro Factors Affecting Family Formation in Taiwan

Traditionally, marriage was early and universal in Taiwan (Thornton & Lin, 1994). In 1905, more than 99.8% of Taiwanese women aged 24 years were already married. Today, Taiwanese young people not only postpone first marriage and childbearing but they also are less likely to marry at all. Those that do marry have fewer children than in the relatively recent past. Like their Western counterparts, Taiwanese young people delay marriage and childbearing; but unlike Westerners, Taiwanese are unlikely to choose nonmarital cohabitation or nonmarital childbearing. In 2010, the cohabitation rate among 20- to 34-year-olds was estimated to be only 4% (Yang, 2014), much lower than the 28.6% in Denmark or 21.8% in France (Organization for Economic Co-operation and Development, 2016). Concomitant with this low rate of cohabitation, the nonmarital fertility rate in Taiwan rose only slightly, from

2.3% of all births in 1994 to 4.0% in 2013 (Ministry of the Interior, 2016). In contrast, over the same time period, the percent of births to unmarried U.S. women rose from approximately 32% to 42% (Solomon-Fears, 2014). These observations indicate that, despite the increasing trend of decoupling marriage and childbearing in Western societies, in Taiwan births are still closely linked to legal marital unions.

Low incidences of nonmarital cohabitation and births are in part a reflection of social disapproval of nonmarital union formation and childbearing in Taiwan. Female cohabitants are especially stigmatized (Chang, 2009; Yang, 2014). According to some investigations of the cohabitation pattern of college students (Chang, 2009), most cohabiting students do not reveal their partnership status to their parents because their parents tend to disapprove of nonmarital coresidence.

In Western societies, a substantial increase in female employment as well as the expansion of higher education appear to be driving the second demographic transitions (Becker, 1991; Kalmijn, 2013; Lesthaeghe, 1983). Not surprisingly, these factors are also the major structural mechanisms leading to postponed first marriage and childbearing in Taiwan (Cheng, 2014; Yang et al., 2006). Macroeconomic factors also play a part in shaping the marriage market. Since the mid-1990s, the country has been mired in stagnant economic growth and rising unemployment. This economic stagnation has consequences for the marriage market. A study based on county-level data (Chiu, 2009) shows that regional unemployment rates are negatively correlated with women's marriage rate. Economic recession, high unemployment, and income inequality all contribute to a diminishing pool of attractive marriage partners.

Social policy is another institutional factor affecting union formation and fertility patterns. As documented in Sweden, a family-friendly social policy is likely to encourage marriage and fertility (Björklund, 2006). Such policies are not well developed in Taiwan. For instance, in Taiwan public child care is not available to most families with children younger than 2 years of age (Wang, 2014). These gaps in institutional support contribute to the reluctance of young people to take on the burdens of family life.

Bucking the Trend to Delay Marriage and Childbearing

Although the majority of Taiwanese young people delay first marriage and childbearing, some Taiwanese still marry early and have children at young ages. In 2015, 13% of the brides and 6% of grooms were 24 years old or younger. Besides, 10% of all births delivered in 2015 were to

mothers aged 24 or younger (Ministry of the Interior, 2016). Because of prejudice against nonmarital births, early marriage is often a solution to an unanticipated pregnancy.

As discussed previously, disadvantaged individuals are usually overrepresented in early or postconception marriages. Given that structural and institutional factors do not appear conducive to family formation in Taiwan, individuals transitioning to marriage and parenthood at young ages are relatively unusual, and they may be in particular need of familial and social support.

Micro Factors Leading to Early Marriage

Despite divergent early marriage patterns and social contexts across societies, similar micro effects on marital timing are observed in a wide range of countries (Raymo & Ono, 2007; Uecker & Stokes, 2008). The socioeconomic characteristics of an individual's family of origin are salient determinants of one's marital timing. Both men and women from families of higher socioeconomic status (SES) are less inclined to marry early (Axinn & Thornton, 1992; Uecker & Stokes, 2008), most likely because parents with higher educational attainment and more economic assets can provide their children with more resources to pursue advanced education or other opportunities outside of marriage (Waite & Spitze, 1981).

The family of origin affects children's marital timing not only in terms of their socioeconomic resources but also through its structure, familial interactions, and parental attitudes. In comparison with children in other family structures, children from stable, two-parent families in general have more financial resources and emotional support to complete higher education, and thus, they are likely to stay with or receive support from their parents until they have established a career. Having fewer siblings to compete for family resources may accentuate this pattern, leading to later departure from home (Goldscheider & Goldscheider, 1998). On the other hand, family disruption during adolescence and the subsequent reduced economic resources or inconsistent parenting may push children to leave home or marry early (Axinn & Thornton, 1992, 1996; Goldscheider & Goldscheider, 1998).

Apart from the effects of family background, a young adult's own SES and aspirations affect the likelihood of early marriage. While enrollment in higher education usually exempts a person from the pressures of adulthood while they acquire human capital and skills for adult roles (Thornton, Axinn, & Teachman, 1995), marriage accelerates the transition to adulthood and independence. The expectations surrounding early marriage and family are usually incompatible with expectations of the student role.

However, completion of education is usually associated with improved economic standing and higher earning capacity, and thus raises the expectation of marriage (Thornton et al., 1995). Thus, both men and women are likely to delay marriage while pursuing higher education and to marry after they complete education and have stable career trajectories (Oppenheimer, 1988; Sweeney, 2002). In the meantime, there are gender differences in the effects of higher education on marriage. In both Taiwan and Japan, higher education and employment delays entry into marriage for men, but higher education and SES diminishes the likelihood of women marrying at all (Cheng, 2014; Chiu, 2009; Yang et al., 2006).

Family ideoculture, including gender attitudes and family values, also affect marital timing. According to Barber and Axinn (1998), less-educated women with more traditional attitudes toward gender roles are more likely to marry early and have children early, possibly because they are less interested in market success than they are in family life and children.

Demographically, women generally marry earlier than men (Goldscheider & Goldscheider, 1998). Geographic location is another predictor. People living outside of metropolitan areas tend to marry earlier than do residents of large cities (Bramlett & Mosher, 2002; Uecker & Stokes, 2008). Possible explanations accounting for regional differences are that outside of cities, marriage is perceived as more desirable for women because alternative arrangements, such as employment, are less available.

Finally, it is important to note that adolescent developmental experiences influence marital timing. Notably, sexual history is strongly associated with marital timing (Brückner & Bearman, 2005). Teenage sex and pregnancy are likely to lead to early marriage, especially in Taiwan, where childbearing mainly occurs within marriage (Wu, 2015).

Micro Factors Leading to Postconception Marriage

Several decades ago, because of social disapproval of and even sanctions against nonmarital unions and births, a nonmarital pregnancy was often legitimated by a shotgun wedding. For example, in the early 1960s, two thirds of American couples who experienced a nonmarital pregnancy had a postconception marriage (Bachu, 1999). Today, in Western societies there has been a substantial decline in postconception marriages, mainly due to the widespread adoption of contraceptive methods and less stigmatization of nonmarital births (England, Wu, & Shafer, 2013; Raymo & Iwasawa, 2008). In the meantime, postconception cohabitation has emerged as an alternative to marriage following nonmarital pregnancy. As a consequence in the United States, for example, the percentage of first births to married mothers declined from

68% in 1985-1989 to 46% in 2005-2010. Over the same time period, the percentage of first births by cohabiting mothers rose from 10% to 30%, and the percentage of first births conceived prior to marriage fell from 8.7% to 6% of all births (Gibson-Davis & Rackin, 2014). Conversely, first births in postconception cohabitation unions increased from 2% in 1985-1989 to 5% in 2005-2010. According to another study based on the 2006-2008 NSFG (Lichter, 2012), only 16% of pregnant women in cohabiting unions married by the birth of the child, whereas among unmarried pregnant women, one fifth of them transitioned to nonmarital cohabitation during pregnancy.

Despite the trend in many Western societies toward social acceptance of pregnancy and birth outside of marriage, in many Asian societies, postconception shotgun marriages still account for a significant proportion of legal marital unions. In Japan, for example, almost one third of first births were conceived prior to marriage in 2005 (Raymo & Iwasawa, 2008); and in Taiwan in 2004, at least 30% of all pregnancies began before marriage. Premarital pregnancy is especially common among young women who marry. As noted above, in 2004, nearly 70% of married respondents aged 24 years or younger reported premarital pregnancy compared with slightly less than 30% of individuals aged 35 to 39 years (Wu, 2015).

Given that postconception marriage is likely to be "event driven" rather than "relationship driven" (Raymo & Iwasawa, 2008), a marriage precipitated by an unanticipated pregnancy tends to be less selective and less satisfying to the couple. Raymo and Iwasawa (2008) found that bridal pregnancy is correlated with a significantly higher likelihood of nonnormative educational pairing. Pregnancy-driven family formation and poorly matched relationships may contribute to the instability of postconception marriage (Teachman, 2002).

As fertility patterns shift from preconception marital births toward first births outside of marriage, the correlation between types of union formation and social class seems to accelerate. Postconception marriage is more prevalent among less-educated couples (Gibson-Davis & Rackin, 2014; Raymo & Iwasawa, 2008). A marital union is more stable and has a better socioeconomic profile than a cohabiting relationship in the United States (Rackin & Gibson-Davis, 2012). In Taiwan, postconception marriages are also associated with social deprivations. In 2004, more than 70% of premarital births were to individuals with no more than a secondary education.

In the meantime, a pattern of either linking or decoupling marriage and fertility is often passed on from generation to generation. For example, Lichter et al. (2014) shows that people from intact families are more likely than people from nonintact families to marry after pregnancy than to remain cohabiting.

In summary, although there is an increasing body of literature examining the factors and consequences of early marriage, most of the studies have been focused on the United States and other Western societies. Not many studies have investigated early marriage patterns in East Asian societies. Thus, this research examines early preconception and postconception marriages in Taiwan. We expect the majority of early marriages to follow a pregnancy. We also anticipate that young adults who are in postconception marriages are more disadvantaged than those in preconception marriages and unmarried and childless young adults.

Data and Method

This research relies on data from the Taiwan Youth Project (TYP; Academia Sinica, 2017). The TYP study, conducted by the Institute of Sociology, Academia Sinica, Taiwan, is a long-term panel survey following two cohorts of teenagers (i.e., J-1, or first-year students of junior high schools, with an average age of 13 years, and J-3, third-year students of junior high schools, with an average age of 15 years). Follow-up surveys have been conducted every 1 to 3 years. From 2000, when both cohorts were first surveyed to the most recent survey wave (2017) when the J-1 cohort reached an average age of 30 years and the J-3 cohort reached 32 years, 12 survey waves have been collected.

The participants were recruited through a two-stage stratified and cluster sampling procedure. At the first stage, the TYP research team selected two areas of Northern Taiwan (Taipei City, New Taipei County) and one area from the Eastern Taiwan (Yilan County). The three areas represent essential regional differences in urbanization, economic production, and population composition. The residents of these three areas make up one third of the Taiwanese population (Ministry of the Interior, 2016).

Next, three strata for Taipei City and Taipei County respectively and two strata for Yilan county were chosen to reflect differential levels of urbanization. Furthermore, in each stratum, cluster sampling was applied. Specifically, the number of schools and students to be sampled from each stratum was calculated to represent the ratio of students registered in each stratum to the entire student body in that area. In each of the selected schools, the research team randomly assigned classes and recruited all students in selected classes to participate in the survey. The final sample sizes of the two cohorts (J-1 and J-3) in Wave 1 were 2,696 and 2,851, respectively (Lin & Yi, 2015).

To investigate early marriage and associated factors, including family and individual characteristics during adolescence and young adulthood, we used data from Waves 1 and 10 (surveyed in 2000 and 2011). The data from Wave

I include essential variables related to individual and family characteristics during adolescence. The data from Wave 10 are ideal for investigating early marriage because, by then, the respondents were 24 to 27 years of age and their marital status and many other variables had been collected. In total, 3,129 respondents were surveyed in 2011, including 1,537 respondents from the J-3 cohort and 1,592 respondents from the J-1 cohort. We deleted 159 cases due to missing data with respect to essential individual and household characteristics, such as marital status, so the final analytic sample consists of 2,970 respondents, including 1,571 men and 1,399 women. Each cohort accounted for about half of the respondents.

Given that more than 43% of the original respondents had exited the survey by Wave 10, a major concern in this long-term panel study is that the effect of attrition may lead to biased estimates. Thus, we tested for the potential nonignorable selection on observables included in the data (Alderman, Behrman, Kohler, Maluccio, & Watkins, 2001). Specifically, we conducted a logistic regression analysis to predict the probability of staying in the study (=1) using the personal and family characteristics considered to affect the risk of the respondent's withdrawing from the survey, including the SES and structure of their family of origin reported in Wave 1, as well as the respondent's birth year and gender. Then, we estimated a complete case analysis, weighting subjects by the inverse of their probability of being observed (IPW: inverse probability weight). That is, we assigned a greater weight to those subjects who had a smaller risk of having their data observed, which would give more influence to similar subjects who had dropped out of the survey (Bartlett, 2012). Because few existing statistical methods could correct selection on unobserved data, we are aware that the adjustment method we employ may not reduce biased estimates due to selective attrition on unobserved characteristics (Alderman et al., 2001).

Measures

The dependent variable is marital status (married = 1, never married = 0). To consider differential routes into marriage, in the second set of analysis, marital status is trichotomized as respondents in postconception marriage, preconception marriage, and being never married (omitted category). Although the average length of pregnancy is around 9 months, considering the time needed to be aware of pregnancy and varying pregnancy length (Lichter et al., 2014; Rackin & Gibson-Davis, 2012; Raymo & Iwasawa, 2008), we define respondents whose first child was born within the first 8 months of marriage or earlier as being in a postconception marriage. A preconception marriage consists of married respondents who were either without children or

who married more than 8 months before the birth of their first child. Preliminary analyses were conducted with postconception marriage defined as a first birth within the first 7, 8, or 9 months of marriage. The results based on different definitions of pregnancy periods are very similar. Nevertheless, we realize that a few respondents who had conceived prior to marriage might have been assigned to the category of preconception marriage or vice versa. About 4% (119) of the respondents were married following a pregnancy, 3% (79) were either married before pregnancy or childless, and 93% (2,772) were never married and had no children. Seven unmarried respondents with children were excluded from analysis because the number is too small to be classified as one category.

Several measures are employed to evaluate the family structure reported at Wave 1, including whether either parent was deceased, whether the biological parents were divorced, and the number of siblings. Those who reported parental death or parental divorce at Wave 1 was coded as 1 (nonintact = 1, intact = 0).

Following Hollingshead (1975) and Huang (2003), we constructed a composite indicator to measure the SES of the family of origin using the father's and mother's educational attainment and their occupational status. The constructed SES score ranged from 11 to 55. The socioeconomic scores were further categorized into five levels; "1" represents the lowest status (scores ranging from 52 to 55) and "5" represents the highest status (scores ranging from 11 to 18).

In addition to family background characteristics, individual attributes likely to influence early marriage were measured. The demographic characteristics are age (continuous), gender (female = 1, male = 0), and the geographic location of school at Wave 1 (Taipei City = 0, Taipei County, Yi-Lan County = 1). To measure the respondent's employment before marriage, we included a variable indicating the work status prior to marriage or the work status in 2011 for never married respondents. The work status of the respondent prior to marriage was coded as nonworking and working (omitted category). The respondent's educational attainment was classified as upper secondary or lower, some college, and university completed or graduate programs (omitted category).

To gauge the respondent's gender attitudes at Wave 1, an average score was calculated based on three statements (alpha value: 0.8): (a) A preschool child is likely to suffer if his or her mother works; (b) A man's job is to earn money, a woman's work is to look after the family; and (c) A woman should choose the family over work when there is a conflict between family and work responsibilities. Original responses ranged from *strongly agree* (1) to *strongly disagree* (4). Higher scores reflect more egalitarian attitudes toward

gender roles. Finally, the respondent's sexual history was assessed with a question about whether the respondent had sexual experiences prior to the age of 18 (yes = 1, no = 0).

Analytical Strategy

Two subsets of analysis were estimated in this study. In the first set of analysis with the dichotomized outcome variable being "married" or "never married," binary logistic regression was used to relate family and individual factors to early marriage. In the second set of analysis, considering differential pathways to marriage, we used multinomial logistic regression to model the likelihood of being in a postconception or preconception marriage relative to remaining single.

Additionally, considering that the SES and structure of the family of origin are likely to affect offspring's marital timing through their effects on offspring's educational attainment and employment, we estimated two steps of analysis with the first model including only family and individual characteristics reported at Wave 1, and the second model including the respondent's education, work status prior to marriage, and teenage sexual experience in addition to the Wave 1 predictors.

Results

Descriptive Statistics

Table 1 summarizes the descriptive statistics for all of the selected respondents and for the respondents in each of the three marital categories (i.e. postconception, preconception, and never married). Reflecting the trend of delayed first marriages, only 198, or nearly 7%, of respondents were married. Of these, 119 (4% of the sample; 60% of those who married) had their first child within the first 8 months of marriage. The other 79 (3% of the sample; 40% of those who married) either reported childbirth after the first 8 months of marriage or no children. As expected, the majority of early marrieds observed in this study were in postconception marriages. The mean age of the respondents in 2011 was 25.32. Of these married respondents, the age of their first marriage ranged from 18 to 27, with 70% them entering marriage at no later than 25 years of age. The mean age at first marriage for respondents in postconception marriage is significantly lower than that of respondents in preconception marriage (23.13 vs. 24.74, $p < .001$).

As expected, compared with never married young adults, a larger proportion of married respondents (in both postconception and preconception

Table 1. Distribution of Individual and Family Characteristics by Marital Status.

Variable	Entire sample				(a) Postconception		(b) Preconception		(c) Never married		Significance level (two-tailed)
	Mean/percentage	SD	Min	Max	Mean/percentage		Mean/percentage		Mean/percentage		
N	2,970				119		79		2,772		
Marital status (binary), %											
Being married	6.67				—		—		—		
Marital status (trichotomized), %											
Being in postconception marriage	4.01				—		—		—		
Being in preconception marriage	2.66				—		—		—		
Being never married	93.33				—		—		—		
Age	25.32	1.15	24	29	25.67		26.06		25.29		a < b**, b > c***
Age at first marriage	23.76	2.35	18	27	23.13		24.74		—		a < b***
Egalitarian gender attitudes at Wave 1	2.63	0.56	1.00	4.00	2.43		2.43		2.64		a < c***, b < c**
Family socioeconomic status of origin	2.75	1.06	1.00	5.00	2.31		2.38		2.78		a < c***, b < c**
Family structure											
Number of siblings at Wave 1	1.66	0.87	0	5	2.06		1.95		1.64		a > c***, b > c**
Parents passed away or divorced at Wave 1 (%)	7.10				14.29		6.33		6.82		a > c**
Gender (%)											
Female	47.10				61.34		56.96		46.21		a > c**
Location of school at Wave 1 (%)											
Taipei City	35.66				14.29		17.72		37.09		a < c***, b < c**
Taipei County	37.31				42.86		50.63		36.69		b > c*
Yilan County	27.04				42.86		31.65		26.23		a > c***
Respondent's education (%)											
Secondary or lower	16.26				56.30		35.44		14.00		a > b***, a > c***, b > c***
Some college	13.06				21.01		16.46		12.63		a > c*
University or above	70.68				22.69		48.10		73.37		a < b***, a < c***, b < c***
Respondent's work status prior to marriage (%)											
Nonworking	21.31				33.61		15.19		20.96		a > b**, a > c**
Working	78.69				66.39		84.81		79.04		—
Sexual experience prior to 18 years (%)	13.77				35.29		22.78		12.59		a > b*, a > c***, b > c*

*p < .05. **p < .01. ***p < .001.

marriage) came from families of lower SES ($p < .01$). In terms of family structure, a higher percentage of respondents (14.29%) in postconception marriages reported parental divorce or parental death at Wave 1, as compared with their never married counterparts (6.82%). The married respondents also have more siblings than their never married counterparts ($p < .01$). In addition, individuals adhering to traditional gender roles and those who had sexual experiences before the age of 18 years tended to marry early. Nonworking young adults and those with secondary or lower education are clearly over-represented in postconception marriages. Finally, with respect to demographic attributes, a higher proportion of females and a lower fraction of respondents from metropolitan Taipei City, relative to those from the other two areas, had entered into postconception marriages.

Multivariate Analyses

All Early Married Versus Never Married Respondents. Table 2 presents the results of our binary logistic multivariate analyses for predicting the likelihood of entering into marriage. The first two models show the unweighted/unadjusted results and the last two models illustrate the weighted/adjusted results. Model 1 is focused on the family and individual characteristics reported at Wave 1. Consistent with previous studies, we found the respondents from high-status families to be less prone to marry at young ages ($p < .01$). In addition, young adults who experienced parental divorce or parental death by the time of the Wave 1 survey were more likely to marry young ($p < .05$). Also, the number of siblings is positively correlated with the probability of being married ($p < .01$), suggesting that the competition for family resources between siblings may be a factor leading to early marriage entry. Gender ideology is another influential predictor. Respondents who held more egalitarian gender views at Wave 1 were less inclined to marry young ($p < .001$). Demographic characteristics matter as well. As expected, females, older respondents, and those from less urbanized areas were at higher risk of entering into marriage at young ages.

Model 2 includes the additional variables of personal educational attainment, work status prior to marriage, and teenage sexual experience. Not surprisingly, personal educational achievement and employment status are highly significant predictors of the likelihood of being married at young ages. Compared with university graduates and employed respondents, those with less education and nonemployed respondents were more likely to marry young ($p < .001$). Interestingly, when we control for personal education and employment, the significance levels of family SES and nonintact household experience during childhood are reduced considerably. These findings

Table 2. Binary Logistic Regression Results for Individual and Family Effects on Early Marriage.

Variable	Unweighted		Weighted	
	Model 1	Model 2	Model 3	Model 4
Constant	0.000***	0.000***	0.000**	0.000***
Family socioeconomic status of origin at Wave 1	0.755**	0.845 ⁺	0.755**	0.841 ⁺
Family structure				
Living with both biological parents (ref.)				
Parents passed away or divorced at Wave 1	1.882*	1.521	1.837*	1.472
Number of siblings at Wave 1	1.268**	1.208*	1.276**	1.215*
Egalitarian gender attitudes at Wave 1	0.470***	0.570***	0.471***	0.570***
Gender (Male = ref.)				
Female	2.112***	2.787***	2.080***	2.749***
Age	1.665***	1.681***	1.635***	1.653***
Location of school at Wave 1 (Taipei City = ref.)				
Taipei County	2.282***	2.341***	2.338***	2.419***
Yilan County	2.610***	2.433***	2.668***	2.478***
Respondent's education				
Secondary or lower		5.464***		5.363***
Some college		2.667***		2.673***
University or above (ref.)				
Respondent's work status prior to marriage				
Working (ref.)				
Nonworking		2.363***		2.468***
Sexual experience before 18 years old		2.511***		2.567***
N		2,970		
Pseudo R	.115	.211	.114	.212
Log likelihood	-643.924	-573.861	-1171.913	-1041.899

Note. The coefficients reported in the table are odds ratios.

⁺ $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

suggest that the effects of family structure and SES on early marriage may partially translate into later educational and employment achievements by young adults. That is, those coming from nonintact families and families with lower SES tend to leave school early and remain nonemployed. As a

consequence, those who leave school early and those who do not work are likely to enter marriage early. Finally, having sexual experience before age 18 is positively related to being married young ($p < .001$).

In addition, the weighted results shown in Models 3 and 4 are very similar to those illustrated in Models 1 and 2, suggesting that the selection on observables is ignorable. It is worth noting that the weight factor only possibly adjusts selection on the observed data.

Postconception and Preconception Marriage Relative to Being Never Married. In the following analyses, we examine the effects associated with the entry into postconception and preconception marriages relative to being never married. Table 3 illustrates the results of our multinomial analyses.

The upper panel in Table 3 shows the likelihood of entering postconception marriage relative to remaining single and the lower panel presents the likelihood of reporting preconception marriage relative to remaining single. As in Table 2, Models 1 and 2 are based on the unweighted data, whereas Models 3 and 4 adjust the estimates with a weighting factor. According to Model 1, young adults from families with lower SES backgrounds ($p < .05$) and those reporting parental death or parental divorce during childhood ($p < .01$) were more likely to enter postconception marriage at young ages. Other variables yielded similar effects with respect to both postconception and preconception marriage. That is, young adults holding more egalitarian gender role attitudes were less prone to enter either postconception or preconception marriage. Females, older respondents, and those attending schools in Taipei County and Yilan County (compared with those in Taipei City) were at higher risk of marrying young.

Similar to the results shown in Table 2, when we add personal educational attainment, work status prior to marriage, and teenage sexual experience to Model 2, the SES of the family of origin becomes nonsignificant for both postconception and preconception marriage. At the same time, growing up in a nonintact household and the number of siblings continue to be positively correlated with postconception marriage ($p < .05$). Nonemployed individuals were more inclined than working respondents to enter into postconception marriage ($p < .001$), but the work status prior to marriage does not predict preconception marriage. Individuals having sexual experiences before 18 years were more likely to enter both postconception and preconception marriages ($p < .001$ and $p < .05$, respectively).

Also, the adjusted estimates listed in Models 3 and 4 are similar to those presented in Models 1 and 2, suggesting minimum biases due to selection on observed data.

Table 3. Multinomial Logistic Regression Results for Individual and Family Effects on Early Marriage.

Variable	Unweighted		Weighted	
	Model 1	Model 2	Model 3	Model 4
<i>Postconception vs. never married</i>				
Constant	0.000***	0.000***	0.000***	0.000***
Family socioeconomic status of origin at Wave 1	0.752*	0.876	0.760*	0.881
Family structure				
Living with both biological parents (ref.)				
Parents passed away or divorced at Wave 1	2.505**	1.944*	2.422**	1.851*
Number of siblings at Wave 1	1.320**	1.250*	1.335**	1.263*
Egalitarian gender attitudes at Wave 1	0.486***	0.623*	0.485***	0.623*
Gender (Male = ref.)				
Female	2.249***	3.093***	2.236***	3.068***
Age	1.474***	1.469***	1.439***	1.433***
Location of school at Wave 1 (Taipei City = ref.)				
Taipei County	2.281**	2.265**	2.316**	2.314**
Yilan County	3.067***	2.735**	3.226***	2.858**
Respondent's education				
Secondary or lower				
Some college		9.504***		9.380***
University or above (ref.)		4.443***		4.572***
Respondent's work status prior to marriage				
Working (ref.)				
Nonworking		3.437***		3.580***
Sexual experience before 18 years old		2.873***		2.921***
<i>Preconception vs. never married</i>				
Constant	0.000***	0.000***	0.000***	0.000***
Family socioeconomic status of origin at Wave 1	0.757*	0.809	0.744*	0.792+

(continued)

Table 3. (continued)

Variable	Unweighted		Weighted	
	Model 1	Model 2	Model 3	Model 4
Family structure				
Living with both biological parents (ref.)				
Parents passed away or divorced at Wave 1	1.019	0.896	1.031	0.905
Number of siblings at Wave 1	1.187	1.150	1.185	1.148
Egalitarian gender attitudes at Wave 1	0.451***	0.509**	0.454***	0.510**
Gender (Male = ref.)				
Female	1.924**	2.315**	1.868*	2.261**
Age	2.025***	2.019***	2.015***	2.009***
Location of school at Wave 1 (Taipei City = ref.)				
Taipei County	2.282*	2.340**	2.356**	2.437**
Yilan County	2.021*	1.969*	1.954*	1.913*
Respondent's education				
Secondary or lower		2.717***		2.675***
Some college		1.486		1.431
University or above (ref.)				
Respondent's work status prior to marriage				
Working (ref.)				
Nonworking		1.212		1.272
Sexual experience before 18 years old		1.972*		2.029*
N			2,970	
Pseudo R	.104	.200	.104	.201
Log likelihood	-771.013	-688.919	-1404.326	-1251.902

Note. The coefficients reported in the table are relative-risk ratios.

* $p < .1$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

Finally, to address the question whether postconception and preconception marriages are associated with different factors, we have estimated additional analyses that contrast the respondents in postconception marriage with those in preconception marriage and never married respondents (see the appendix). The findings confirm that those in postconception marriage are generally the most disadvantaged group relative to those in preconception marriage and the never married respondents. Compared with young working adults and those with university or higher degrees, young adults not at work before marriage and those with some college or lower education were at higher risk of entering postconception marriage than entering preconception marriage or remaining single.

In summary, early marriages, especially early postconception marriages, are concentrated in a disadvantaged population. Compared with their never married counterparts, a higher proportion of young marrieds experienced parental death or parental divorce during adolescence and came from families with lower SES. Nonemployed and low-education young adults were overrepresented in postconception marital unions. Meanwhile, those who were neither married nor had children by 2011 seemed to be the most advantaged group.

Discussion and Conclusions

Our investigation of the early marriage patterns in Taiwan has revealed a familial landscape that departs from a pattern often observed in Western societies. Although Taiwan has one of the lowest marriage and fertility levels (Ministry of the Interior, 2016), our results show that nearly 7% of the respondents marry at young ages. Of the married respondents, at least 60% reported postconception marriages, that is, their first birth occurred within the first 8 months of marriage. These findings suggest that in Taiwan early marriage is most likely to be a response to a nonmarital pregnancy.

Our study indicates that family resources, including access to financial resources and growing up in a two-parent household, are highly influential factors in offspring marital formation and other life outcomes. Families with few SES resources have an increased likelihood of early marriage. Young adults who experienced parental divorce or parental death during adolescence are more inclined to enter postconception marriage than to remain single. Living in a single-parent household may be associated with reduced assets, a less desirable neighborhood, and changes in parenting practices (McLanahan & Sandefur, 1994), which may push children to leave home early or marry young.

Our findings also suggest that stable parenting and sufficient financial support have a beneficial impact on the development of offspring's personal capital (Waite & Spitze, 1981), which may further lead young adults to avoid the paths leading to early marriage (South, 2001). The results of our additional analyses (results not shown) indicate that family SES is positively correlated with young adults' education and employment. In addition, the significance levels of family SES and family structure are reduced substantially when we control for personal education, work status prior to marriage, and teenage sexual experience, showing that the connection between family resources and offspring's early entry into marriage can be at least partially explained by young adults' educational attainment and employment status. Thus, we also expect that family resources influence the offspring's marital timing through their effects on the offspring's educational achievement and employment trajectory.

In summary, this research makes important contributions to the study of early marriage and overall family formation. First, this research expands the scope of the cross-cultural literature on early marriage by investigating the pattern of early marriage in Taiwan, a social context in which first marriage is postponed, fertility is declining, nonmarital union formation is less socially acceptable, and social policy is less supportive of families with minor children (Wang, 2014). A systematic examination of the distinct patterns of family formation in Taiwan as an alternative scenario to the trends seen in Western societies is essential to gain a better understanding of family change. Our findings suggest that early marriage, and especially postconception early marriage, is associated with higher levels of disadvantage in Taiwan than in Western societies. In Taiwan, nonmarital cohabitation and single parenthood are less socially approved (Yang, 2014) and, as a consequence, a legal marital union is the most likely solution to premarital pregnancy (Wu, 2015). In contrast, in the United States, a premarital pregnancy may be followed by either cohabitation or single parenthood (Lichter et al., 2014), so early marriage is not as likely to be associated with a premarital pregnancy. The implications are that those who enter early marriage in Taiwan may be doing so because they see few options; consequently, these marriages may be less satisfying, and these individuals are likely to be burdened by disrupted educations and low SES.

Second, this study provides essential empirical evidence for policy making and further research. Given the accelerating ageing of population worldwide, much research is focused on delayed marriage and declining fertility. This research calls for more attention to young marrieds and young parents. Varied marital timing and differential pathways to family formation may be reinforcing economic inequalities in Taiwan. As the perspective of cumulative advantage/disadvantage suggests (Dannefer, 2003), those who delay marriage may benefit from sufficient preparations for their career launch and

experience cumulative advantages over time, whereas those who marry early and thus discontinue education or work may experience increasing disadvantages along their life course. This study also suggests a serious concern regarding an emerging vulnerable population. Disadvantages that had previously been associated with marriage and childbearing in the late teens are now observed among individuals who marry in their mid to late 20s. Thus, it is important to provide support for young parents to resume their education and find employment.

Our study is not without limitations. The TYP study, with data collected in three areas in Taiwan, is not a nationwide representation. Thus, we do not intend to generalize our findings to the entire Taiwanese population. Yet, the three areas—Taipei City, Taipei County, and Yi-Lan County—were selected for data collection because they represent essential regional differences in Taiwan in terms of urbanization levels, economic production modes, and population composition. Thus, our research based on the TYP data still portrays important dimensions of family formation in Taiwan.

Furthermore, because this research is focused on the marital behavior of young adults in their mid-20s, the number of coupled respondents is relatively small. Accordingly, we do not have enough cases to further differentiate pathways to parenthood, such as postconception cohabitation, preconception cohabitation, and single parenthood.

Nonetheless, our empirical findings have demonstrated early marriage as an important but understudied social issue in Taiwan. Further research should explore the ways in which different pathways to marriage and various marital timing affect marital outcomes, such as relationship stability, economic security, and the psychological well-being of young marrieds and their children.

Appendix

Multinomial Logistic Regression Results for Individual and Family Effects on Early Marriage.

Variable	Unweighted	
	Model 1	Model 2
<i>Preconception vs. Postconception</i>		
Constant	0.000*	0.002
Family socioeconomic status of origin at Wave 1	1.008*	0.924

(continued)

Appendix (continued)

Variable	Unweighted	
	Model 1	Model 2
Family structure		
Living with both biological parents (ref.)		
Parents passed away or divorced at Wave 1	0.407 ⁺	0.461
Number of siblings at Wave 1	0.899	0.920
Egalitarian gender attitudes at Wave 1	0.928	0.816
Gender (Male = ref.)		
Female	0.855	0.749
Age	1.374 [*]	1.374 [*]
Location of school at Wave 1 (Taipei City = ref.)		
Taipei County	1.001	1.033
Yilan County	0.659	0.720
Respondent's education		
Secondary or lower		0.286 ^{**}
Some college		0.334 [*]
University or above (ref.)		
Respondent's work status prior to marriage		
Working (ref.)		
Nonworking		0.353 ^{**}
Sexual experience before 18 years old		0.686
<i>Never married vs. postconception</i>		
Constant	21.137 ^{***}	24.467 ^{***}
Family socioeconomic status of origin at Wave 1	1.330 [*]	1.142
Family structure		
Living with both biological parents (ref.)		
Parents passed away or divorced at Wave 1	0.399 ^{**}	0.514 [*]
Number of siblings at Wave 1	0.757 ^{**}	0.800 [*]
Egalitarian gender attitudes at Wave 1	2.059 ^{***}	1.604 [*]
Gender (Male = ref.)		
Female	0.445 ^{***}	0.323 ^{***}
Age	0.678 ^{***}	0.681 ^{***}
Location of school at Wave 1 (Taipei City = ref.)		
Taipei County	0.438 ^{**}	0.441 ^{**}
Yilan County	0.326 ^{***}	0.366 ^{**}
Respondent's education		
Secondary or lower		0.105 ^{***}
Some college		0.225 ^{***}

(continued)

Appendix (continued)

Variable	Unweighted	
	Model 1	Model 2
University or above (ref.)		
Respondent's work status prior to marriage		
Working (ref.)		
Nonworking		0.291***
Sexual experience before 18 years old		0.348***
N		2,970
Pseudo R	.104	.200

* $p < .1$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

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