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**Trends in
Female and Male
Age at Marriage
and Celibacy
in Asia**

**Peter Xenos
and Socorro A. Gultiano**



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HONOLULU, HAWAII

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ABSTRACT This paper examines trends across Asia in the female and male mean ages at entrance to marriage. The female singulate mean age at marriage (SMAM) has been the object of considerable attention, while the male age at marriage has not. We show that with few exceptions the long-term trend to later female marriage continued into the 1980s and in many countries has produced quite high percentages single among the young. With the exceptions noted, there is no indication that the trend has abated. Trends for males are in sharp contrast. There has been less change and the pace of change has been slower. In fact, the underlying components of change have been different for females and males. The essential difference is that female ages at marriage have become more diverse, while there has been a homogenization of male marriage ages. A research agenda is offered stressing examination of differences among countries and between the sexes and how these differences reflect the disparate trends in economic growth that have been experienced.

Asia is in the midst of social transformations that are dramatic by any standard. Family, school, labor market, and other institutions are all changing, generally in ways that extend the options available to the younger generation. An important element of this transformation is the pattern of delayed marriage that has emerged throughout much of the region, as well as the adolescent and youth subcultures that have developed along with it. A report published over a decade ago (Peter C. Smith 1980), based on marital status data from censuses and national surveys, examined the Asian "nuptiality transition" up to about 1970 and demonstrated that the shift to later marriage ages was virtually universal across countries and among socioeconomic groups within countries. (Other studies providing additional evidence include Peter C. Smith 1978, David P. Smith 1980, United Nations 1990, and Xenos 1991.)

During the past decade additional data have become available covering the decade of the 1970s and, for some countries, through the mid-1980s. This paper offers highlights from the analysis of an updated and enlarged assemblage of basic nuptiality indicators for 17 Asian countries spanning the twentieth century through the early 1980s. Table 1 indicates the coverage of countries and dates. These materials encompass all the marital status data that could be gleaned from all Asian censuses and some national surveys or secondary compilations—107 data sources in all, yielding 110 observations by country and year.¹

1. We do not show data for Bhutan, Cambodia, the Korean Democratic People's Republic, the Lao People's Democratic Republic, Macau, Mongolia, or Sikkim. Tibet is included in the People's Republic of China; Taiwan is shown separately. East Timor is included in Indonesia. Most sources are national censuses. Survey data are employed for Pakistan in 1973 and Indonesia in 1976 and 1986. The China series through 1980 was estimated retrospectively from the 1981 1/1,000 Fertility Survey (Coale 1984). The 1987 estimate for China is from the 1987 1/100 sample survey (unpublished tabulation).

Table 1. Available data on marital status for the countries of Asia

| Country | Years covered | | | Length of series (years) |
|-----------------|---------------|----------|-------------|--------------------------|
| | No. of years | Earliest | Most recent | |
| Bangladesh | 4 | 1951 | 1981 | 30 |
| Brunei | 2 | 1971 | 1981 | 10 |
| China | 8 | 1955 | 1987 | 32 |
| Hong Kong | 7 | 1931 | 1986 | 55 |
| India | 10 | 1891 | 1981 | 90 |
| Indonesia | 5 | 1964 | 1985 | 21 |
| Japan | 13 | 1920 | 1985 | 65 |
| Korea | 11 | 1925 | 1985 | 60 |
| Malaysia | 5 | 1947 | 1980 | 33 |
| Myanmar (Burma) | 2 | 1953 | 1983 | 30 |
| Nepal | 3 | 1961 | 1981 | 20 |
| Pakistan | 7 | 1921 | 1981 | 60 |
| Philippines | 7 | 1903 | 1980 | 77 |
| Singapore | 4 | 1957 | 1980 | 23 |
| Sri Lanka | 7 | 1901 | 1981 | 80 |
| Taiwan | 11 | 1915 | 1985 | 70 |
| Thailand | 4 | 1947 | 1980 | 33 |

Note: The China series was estimated retrospectively from the 1981 1/1,000 Fertility Survey (Coale 1984; Smith and Wei 1986) and the 1/100 sample survey (unpublished tabulations). The sources for Korea describe South Korea only from 1960 onward.

The earlier effort was restricted to data for females, but here we provide data for both sexes. Indicators of nuptiality are presented as well, based on new methods that yield additional insight into underlying processes. A detailed analysis of the data is to appear elsewhere. (For a preliminary report, see Xenos 1991.) This report includes a concise survey of the trends that are revealed, stressing the most recent developments by country, the historical nuptiality trend among males, and some important and heretofore unrecognized contrasts between the marriage patterns of females and those of males.

A rich body of research points to the key processes producing marriage delay. (See Cochrane 1979 and Peter C. Smith 1983 for reviews; see also McDonald 1981, 1985; United Nations 1990.) Prominent among these processes are (1) urbanization, an analytic construct that embraces a host of lifestyle and economic influences focused on urban dwellers and particularly those in the largest cities; (2) changes in rural family systems, particularly changes relating to pressures on agricultural resources and their

transmission across generations; and (3), in both urban and rural areas, the spread and extended duration of formal schooling.

These social transformations are associated with economic development. Another explanation for long-term change is the altered demography of Asian marriage markets. Underlying population growth rates have risen markedly over time. Combined with prevailing, sometimes quite substantial, age gaps between wives and husbands at marriage (Casterline, Williams, and McDonald 1986), shortages of males at appropriate marriage ages can result (Preston and Strong 1986), creating pressure for later female marriage, earlier male marriage, or both. The nuptiality trends presented here for both sexes are not inconsistent with such a purely demographic effect, but we conclude that changing demography has not been as important as other social and economic changes. Our analysis instead links sex ratio changes to short-term perturbations in marriage timing, particularly for males, and to shifting levels of celibacy, or proportions of persons who never marry.

NUPTIALITY DATA AND INDICATORS

The basic information taken from each of the censuses or surveys is the distribution by marital status of the population in each age group and gender. The indicators of nuptiality based on these data are discussed at length elsewhere and, because they have come into widespread use, are described only briefly here.

The singulate mean age at marriage (SMAM) is a synthetic cohort measure obtained from a single census—a cross-section of age-specific percentages single (Hajnal 1953; Peter C. Smith 1978). It is the mean number of years lived in the single state as implied by a schedule of age-specific percentages single. The formula is as follows:

$$\text{SMAM} = \frac{(\sum_{x=0}^{50} S_x) - (50S_{50})}{100 - S_{50}}$$

In practice data are most often available for five-year age groups from age 10 or 15 onward. For data in five-year age groups starting at age 15 the formula becomes:

$$\text{SMAM} = \frac{1500 + 5 (\sum_{x=15}^{50} {}_5S_x) - (50S_{50})}{100 - S_{50}}$$

Here it is presumed that no marriages occur before age 15. The percentage single at age 50 is approximated by the average of ${}_5S_{45}$ and ${}_5S_{50}$.

The same schedule of percentages single has been parameterized by Coale (1971), employing a double exponential formula with the parameters a_0 , the "onset" or earliest age at which marriages begin to occur, and k , the "tempo" or rapidity with which the curve of percentages ever married departs from zero toward its maximum level. That maximum level or proportion ever marrying is denoted by C . For given levels of a_0 and C , the k parameter is proportional to the dispersion of the underlying distribution of ages at marriage. The relationship linking SMAM, a_0 , and k is $SMAM = a_0 + 11.37(k)$, where the constant is a function of the variance of ages at marriage in the nuptiality schedule used as the standard for comparison (Coale 1971; Trussell and Rodriguez 1980).

Synthetic cohort measures of nuptiality presume an unchanging age-specific nuptiality function over time, though change is in fact the commonplace situation all across Asia. Faced with this problem in his analysis of Indian nuptiality some years ago, S. N. Agarwala developed a two-census variation on the singulate mean age at marriage that applies the same formula to a set of "intercensal" percentages single, isolating the force of first marriage entrance within a well-defined period (Agarwala 1962). Table 2 illustrates the calculation of the two-census (Agarwala) intercensal percentages single.

Among Thai men recorded in the censuses of 1970 and 1980 (columns 1 and 2) rising percentages were single at ages 20-24 onward. But both these schedules of percentages single are influenced by the higher nuptiality rates of the decades before 1970, so that our understanding of nuptiality in the 1970s is obscured somewhat. In this example the two-census measure isolates the force of nuptiality during the single decade. This is apparent if one compares the estimated percentages single in 1970 and 1980 by age group with the percentages single for the true decadal period, as estimated by the Agarwala method (column 4 of Table 2). From age 30 onward the Agarwala percentages single are higher at each age than either of the observed census percentages. The Agarwala method isolates the period of the 1970s by estimating the age-specific probabilities of first marriage through comparison of actual cohorts in the two censuses.

Agarwala's method is very useful but requires a pair of censuses separated by precisely ten or, preferably, five years so that the same five-year cohorts can be identified across pairs of censuses. For many populations, however, the available census series have irregular sequences of dates. In the series for the Philippines, for example, the available dates are 1903, 1918, 1939, 1948, and then five or ten-year intervals from 1960 onward. A new intercensal approach for estimating SMAM based on the "variable r " method has been developed by Preston (1987), so that intercensal intervals of any length can be employed. Table 3 illustrates the Preston two-census calculation with the same data for Thai males in 1970 and 1980. The two results are very similar.

Table 2. Calculation of decadal percentages single for Thailand males, 1970-80, by the Agarwala method

| Age group | Census (observed) percentages single | | Agarwala two-census calculations | |
|-----------|---|-------|--|----------------------------|
| | 1970 | 1980 | $\frac{5S_x^{1980}}{5S_{x-10}^{1970}}$ | Decadal percentages single |
| 10-14 | 1.000 | 1.000 | 1.000 | 100.0 (1.000 × 100) |
| 15-19 | 0.962 | 0.957 | 0.957 | 95.7 (0.957 × 100) |
| 20-24 | 0.638 | 0.657 | 0.657 | 65.7 (0.657 × 100) |
| 25-29 | 0.240 | 0.264 | 0.274 | 26.3 (0.274 × 95.7) |
| 30-34 | 0.099 | 0.110 | 0.172 | 11.3 (0.172 × 65.7) |
| 35-39 | 0.052 | 0.056 | 0.233 | 6.1 (0.233 × 26.3) |
| 40-44 | 0.031 | 0.037 | 0.374 | 4.2 (0.374 × 11.3) |
| 45-49 | 0.023 | 0.027 | 0.519 | 3.2 (0.519 × 6.1) |
| 50-54 | 0.019 | 0.021 | 0.677 | 2.9 (0.677 × 4.2) |

A more detailed report will compare the Preston and Agarwala two-census results and the Hajnal one-census results in full.² In this brief presentation only Preston's two-census SMAMs and related results are shown (Appendix Tables 3 and 4). The Preston two-census results are central to our analysis of celibacy.

DELAYED MARRIAGE: WOMEN AND MEN COMPARED

Nearly all of the demographic literature on marriage is about women: about their ages at marriage, about how they choose their partners or have them chosen for them, and, especially, about how their marriage patterns influence their subsequent childbearing. We have remarkably little comparable information, and still less historical information, about the marriage patterns of men. This constitutes a practical as well as an intellectual gap in our understanding of a social transformation of considerable importance. Certainly there is reason to be wary of any presumption that socioeconomic forces such as schooling and labor force changes or urbanization will influence female and male marriage patterns in a similar fashion.

The historical series of (one-census) mean ages at marriage for females and males are shown in Figure 1. The presentation is in three parts: for South

2. The Preston and Agarwala estimates are virtually identical when the intercensal interval is five years, but they show some deviation, with the Agarwala estimates generally higher than the Preston estimates, at longer intervals. The differences are greatest when the SMAM is lowest.

Table 3. Calculation of decadal percentages single for Thailand males, 1970-80, by the Preston method

| Age group | Preston two-census calculations | | | | | |
|-----------|--------------------------------------|-------|---|--|--|---|
| | Census (observed) percentages single | | Average annual growth rate of proportion single | Exponential of sum of growth rates to midpoint of interval | Geometric mean of proportions single in two censuses | Estimated proportion single based on intercensal experience |
| | 1970 | 1980 | | | | |
| 10-14 | 1.000 | 1.000 | 0.00000 | 1.000000 | 1.000000 | 1.0000 |
| 15-19 | 0.962 | 0.957 | -0.00052 | 0.998700 | 0.959497 | 0.9582 |
| 20-24 | 0.638 | 0.657 | 0.00293 | 1.004700 | 0.647430 | 0.6505 |
| 25-29 | 0.240 | 0.264 | 0.00953 | 1.036500 | 0.251714 | 0.2609 |
| 30-34 | 0.099 | 0.110 | 0.01054 | 1.089900 | 0.104355 | 0.1137 |
| 35-39 | 0.052 | 0.056 | 0.00741 | 1.139900 | 0.053963 | 0.0615 |
| 40-44 | 0.031 | 0.037 | 0.01769 | 1.213700 | 0.033867 | 0.0411 |
| 45-49 | 0.023 | 0.027 | 0.01603 | 1.320500 | 0.024920 | 0.0329 |
| 50-54 | 0.019 | 0.021 | 0.01001 | 1.409300 | 0.019975 | 0.0282 |

Figure 1. Trends in the mean age at marriage (SMAM)

A. South Asia

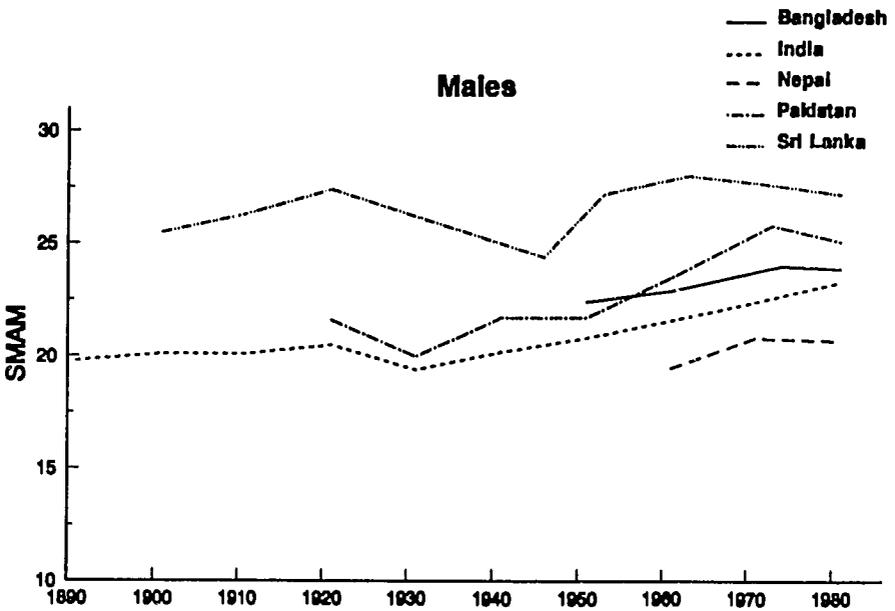
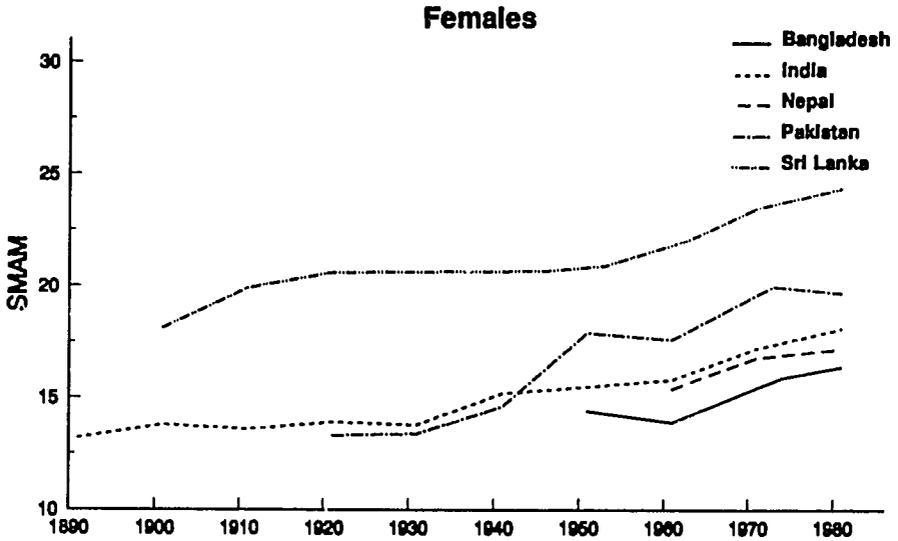


Figure 1. (continued)

B. Southeast Asia

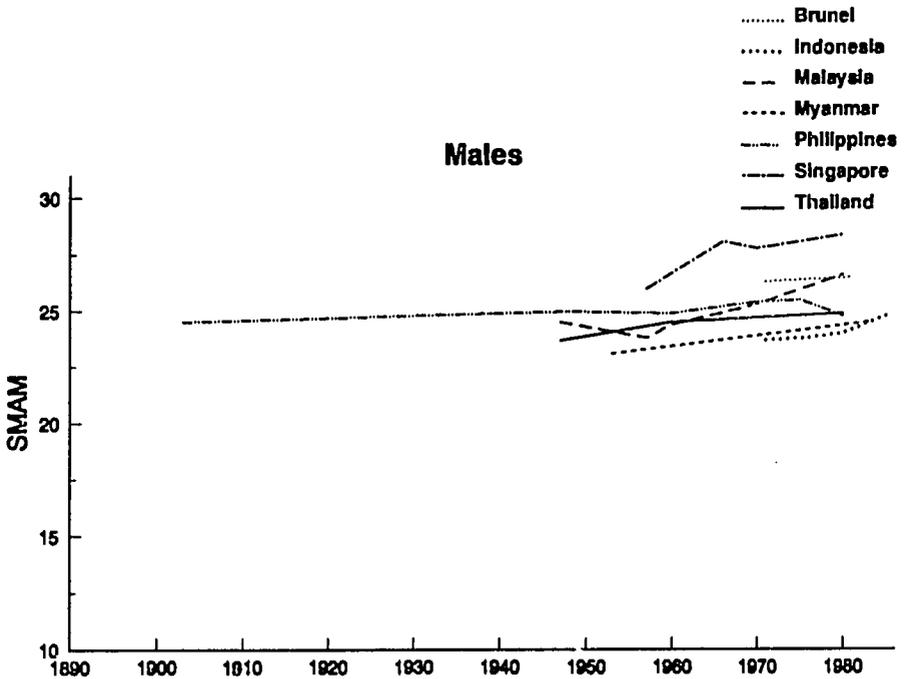
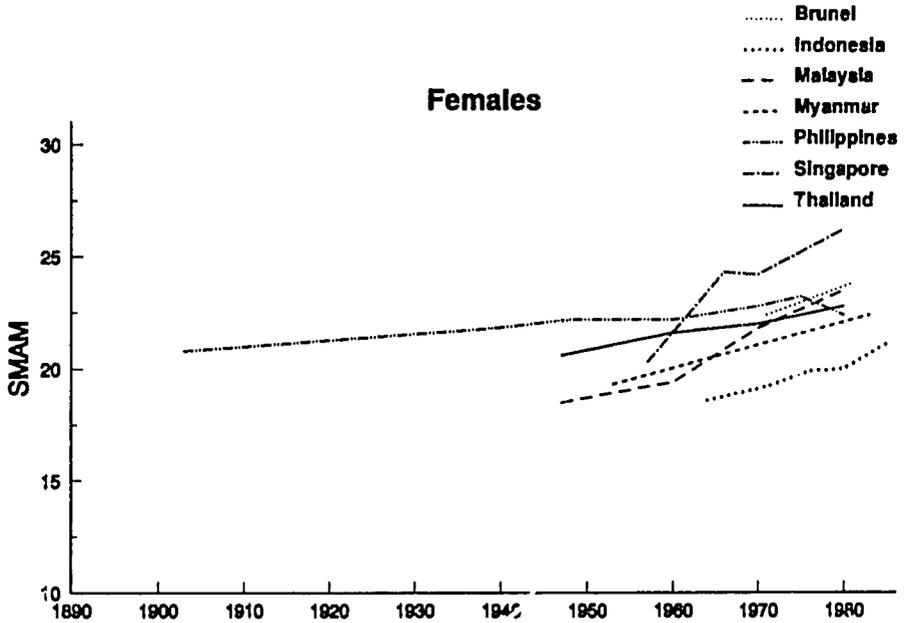
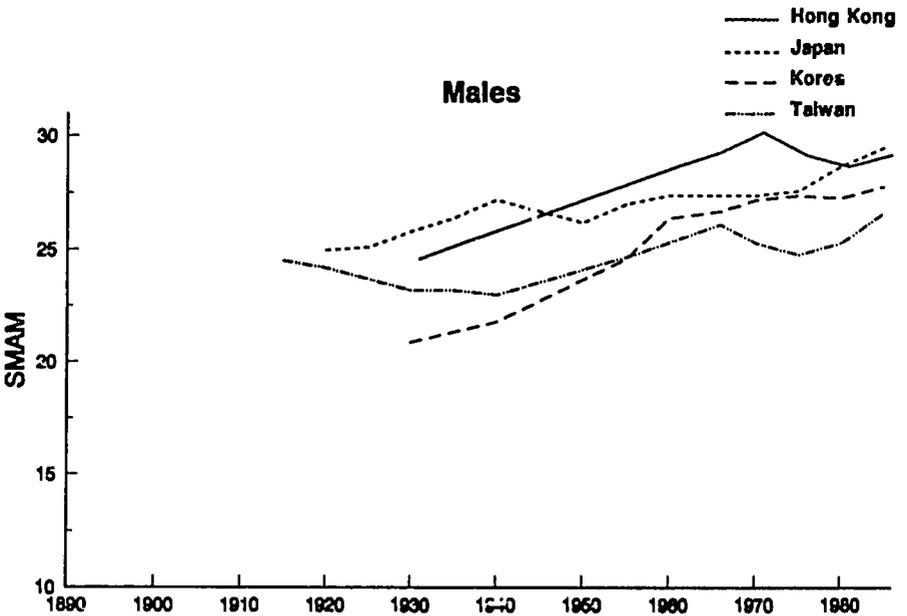


Figure 1. (continued)

C. East Asia



Asia, Southeast Asia, East Asia. The underlying data are provided in the same format in Appendix Tables 1 and 2. Visual comparison in Figure 1 has been facilitated by setting each panel to the same vertical and horizontal ranges. A comparison of one-census and two-census (Preston) estimates of SMAM are given for each country and each sex in Figure 2. Again, there are three panels for the three subregions.

In a remarkably uniform manner, with only occasional faltering, all the countries of Asia show a continuing shift to later female marriage. The new data provided here indicate a continuation of the historical upward trend through the most recent available date in every country with only two exceptions: the Philippines during 1975–80 and the People's Republic of China during 1980–87³

The South Asian countries, which boast the longest time series of marital status data, have female SMAMs rising from levels under 15 to well above 15 or even near 20 years of age by the 1980s. In India the female marriage age (as measured by the SMAM) has increased by nearly five years, from 13.2 to 18.1; Pakistan experienced an even greater delay, while in Nepal and Bangladesh the changes have been less spectacular. Sri Lanka, as in so many other features, is the exception among South Asian countries, with a much later age at marriage at the beginning of the century and a SMAM in 1981 much older than elsewhere in South Asia. In Southeast Asia the available time series are generally much shorter. The earliest levels are somewhat under 20 in the 1950s, rising to well over 20 or even near 25 by the 1980s, with Brunei as somewhat of an exception. The pace of change varies: Malaysia and Singapore have experienced rapid change in SMAMs, much faster than the other Southeast Asian countries. In broad terms, the female South Asian levels of the 1980s approximate the Southeast Asian levels of the 1950s. East Asia is distinguished by very rapid change in the female SMAM—from levels near 20 before World War II (or well below in the cases of Korea and China) to levels near or even over 25 by the 1980s. All these countries except the People's Republic of China have seen upward shifts of four or more years, with South Korea's level rising remarkably from 16 to 24 or so over only six decades.

For most countries the magnitudes of these shifts are of considerable social and even demographic significance (see Xenos 1990). One corollary is the dramatic rise in percentages single among youth age groups (see Appendix Tables 1 and 2). In South Asia recently (excluding Sri Lanka) from one-third to two-thirds of the 15–19 age group has been single, compared with negligible percentages single at mid-century or earlier. There are even

3. There is a slight decline for Pakistan over 1973–81, but we are inclined to discount this because it involves comparison of the 1973 survey with a census. Survey and census series frequently are inconsistent: (see Smith, Alcantara, and De Guzman 1984; Trussell 1981).

Figure 2. One-census and two-census SMAMs

A. South Asia

One-Census Two-Census

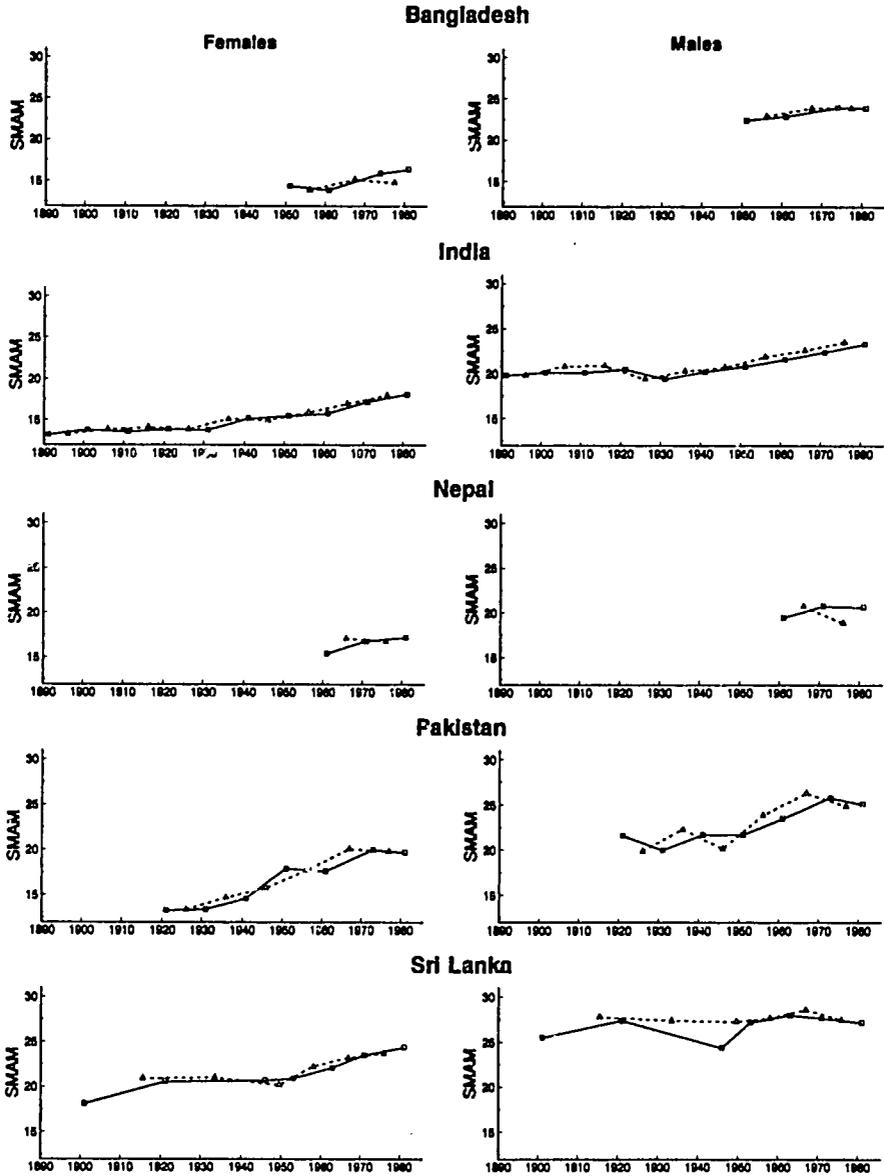


Figure 2. (continued)

B. Southeast Asia

One-Census — Two-Census - - -

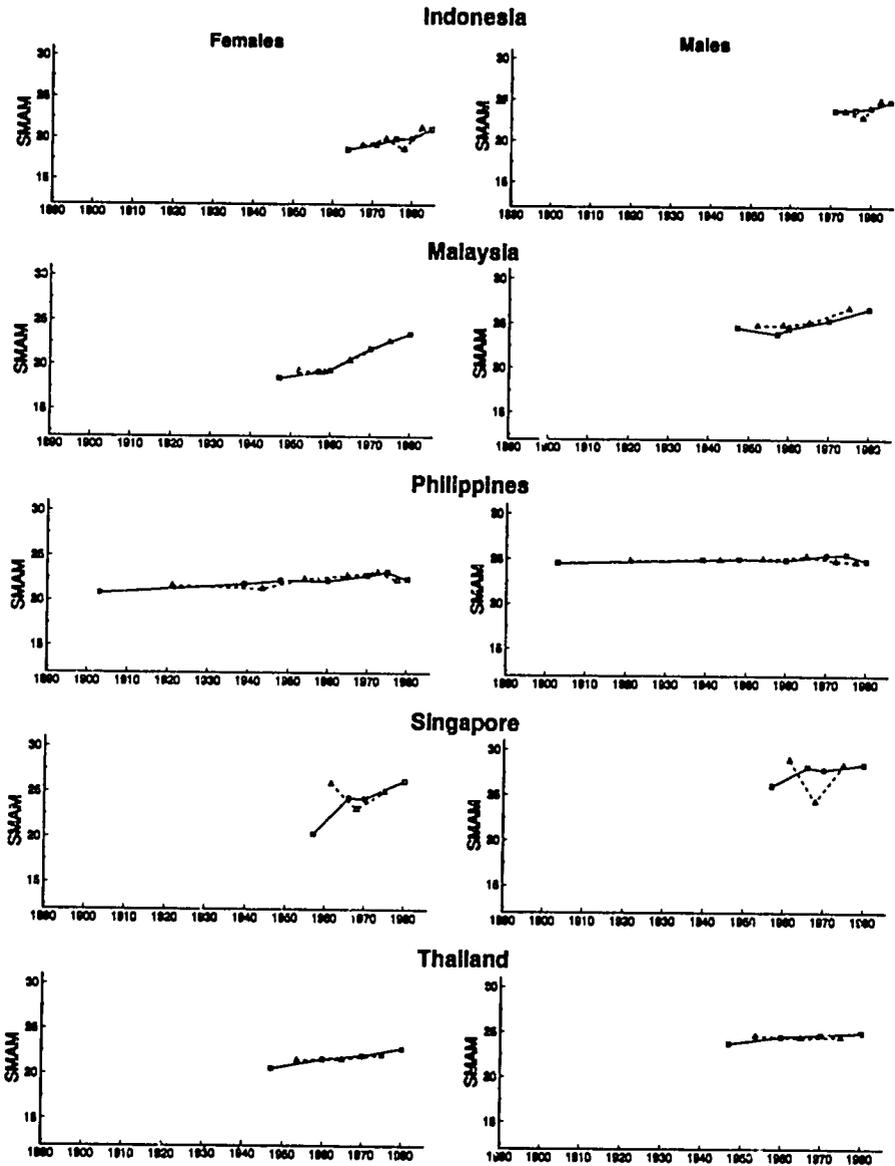
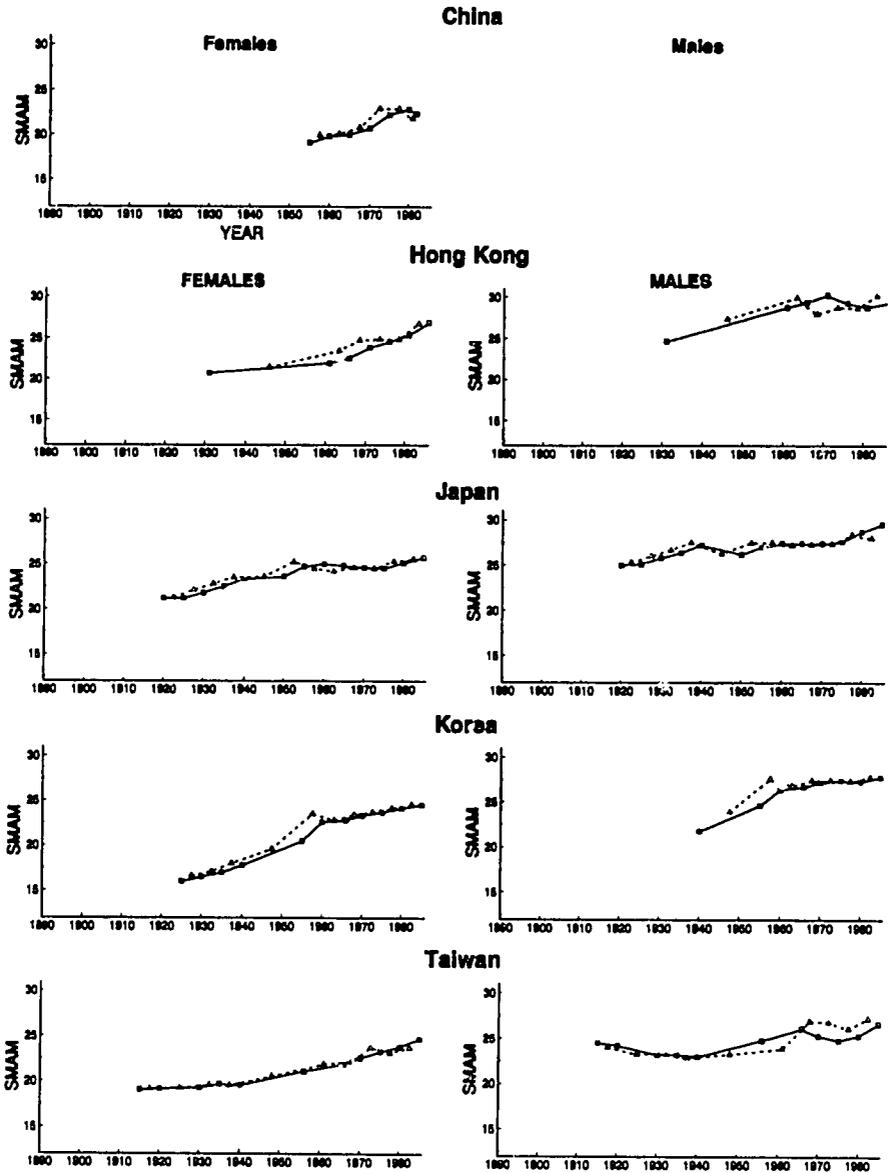


Figure 2. (continued)

C. East Asia

One-Census Two-Census



emerging minorities of women aged 20–24 who are single, reaching 21 percent in 1981 in Pakistan. This transformation is less dramatic in Southeast Asia, because in those countries (except Indonesia) single status at ages 15–19 has long been common. The greatest changes have occurred at ages 20–24, where from 30 to 74 percent of women have been single recently. In East Asia the percentage single at ages 15–19 has long been high, though the transformation in South Korea, from 27.8 to 99.1 percent single, is remarkable. Changes in the 20–24 age group are pronounced throughout East Asia. In Hong Kong the rise was from 26.1 to 78.7 percent over less than six decades; a similar shift occurred in Japan over seven decades; the single 20–24 population approaches one-half in the People's Republic of China, while in South Korea and Taiwan single women of ages 20–24 have gone from being a rarity to constituting the large majority of the age group.

Male trends in age at marriage present interesting contrasts with these female patterns. Nowhere is the contrast greater than in South Asia, where there has been less change for males than for females, but where relatively late male marriage ages and associated large age gaps between spouses can be seen in the early decades of each series. Single male youth have long been commonplace in South Asian society, in a way that single female youth have not until recently. In Southeast Asia the upward male trends have been moderate to very slight in comparison with those of Southeast Asian females. Throughout much of Southeast Asia single youth of both sexes have been common for a long time. In East Asia, as well, single youth have long been prevalent among both sexes, but in that subregion married male teens or even married men under age 25 have become scarce in recent years.

While male ages at marriage have risen along with female, though often less, males have experienced a much less regular nuptiality trend than have females. Figure 1 shows that there are substantially more downturns in the male trends. Downturns occur in 21 out of 83 (25 percent) of available intercensal intervals. In South Asia downturns occur for Indian, Pakistani, and Sri Lankan males in the 1920s and for Sri Lankan males since the mid-1960s. Across Southeast Asia the upward trends are all of negligible magnitude except for Singapore. In East Asia downturns occur at a number of points: in Japan during the 1940s, in Hong Kong during the 1970s, and in Taiwan during the decades preceding 1940 and again between 1966 and 1975.

These downturns among males are often associated with notable (albeit temporary) disruptions in demographic structure. Thus in Hong Kong, Taiwan, and Singapore ages at marriage for males declined during periods when artificially high sex ratios at the marriageable ages (due to previously male-dominant in-migration) were disappearing as a consequence of the aging of in-migrant cohorts. Japan's pattern during the 1940s reflects wartime disruptions as well as postwar demography including large-scale repatriation from overseas.

It seems that the male marriage pattern is far more responsive to disruptions of this kind—to short-run changes generally—than is the female pattern. The data suggest a process of underlying structural change in female marriage patterns—a change that is not much affected by short-run influences—accompanied by much smaller changes in male marriage patterns; some of the largest changes among males are short-run responses to immediate conditions. This important gender difference has been concealed by the tendency of demographers to focus almost exclusively on female trends, even when the topic is an obviously “two-sex” issue such as marriage.

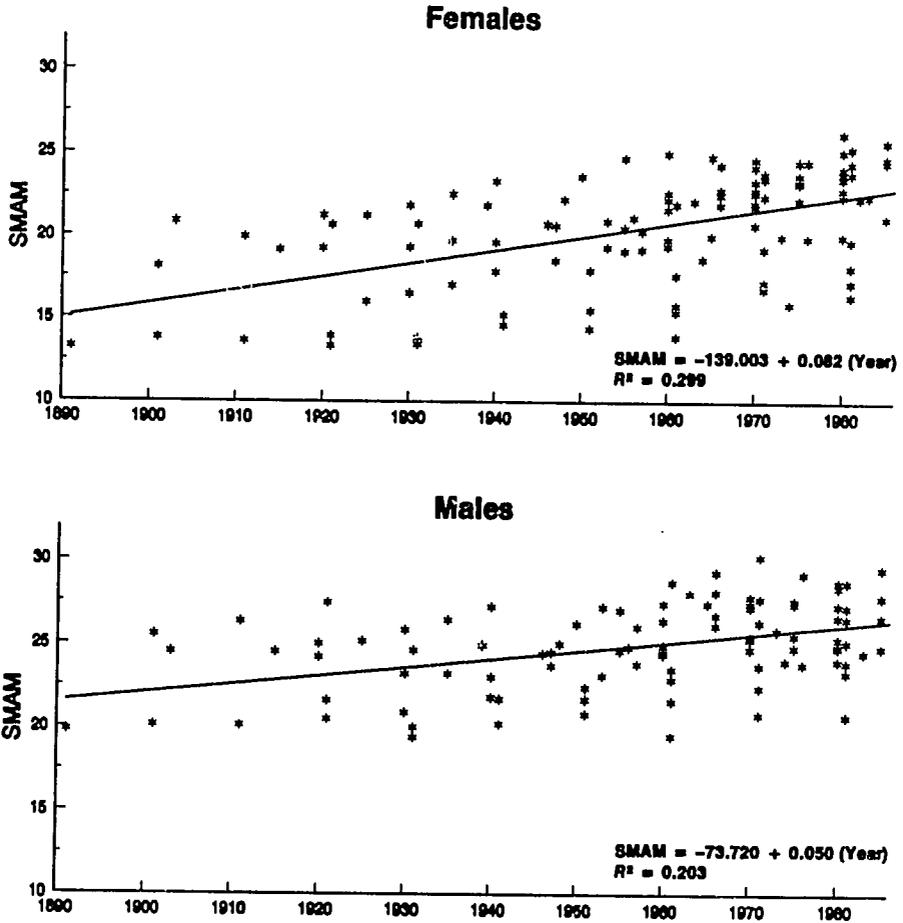
Another important gender difference is in the rate of change in marriage timing. The notably less rapid pace of change among males than among females is expressed in a summary fashion by regression coefficients relating the SMAM to census year. For males we obtain for all countries combined a regression slope of 0.053, compared with 0.082 for females (Figure 3). These coefficients correspond to changes per decade of about 0.8 year for females but only 0.5 year for males. One implication, already noted, is that female and male ages at marriage are gradually converging.

Why is the pace of change notably slower for males? We can offer two reasons. Most obvious is the occurrence of so many disruptions to the upward trend in male marriage age. Sustained upward movement probably would have produced greater marriage delay overall. But another reason lies in a deeper gender difference best seen by examining two additional indicators of nuptiality: the “onset” (a_0) and “tempo” (k) components of these trends (see Appendix Tables 1 and 2). To interpret these two measures it is necessary to recall that the distribution of ages at marriage is a function of the age at onset or a_0 and the tempo or k parameters, where the latter is really a measure of dispersion of ages at marriage, given a particular mean of the distribution and age at onset.

The age at onset data (see Appendix Tables 1 and 2) follow closely the trends in age at marriage and are by far the major component of those trends. For example, virtually all of the very large changes in the SMAM for women in India and Pakistan are due to shifting ages at onset; in these instances the rising a_0 's reflect the gradual elimination of child marriage. Nonetheless, many societies have undergone changes in both age at onset and the tempo of marriage. Among females in Singapore, for example, only two of the six years of change in SMAM are due to a_0 . Many women are waiting until their early twenties to marry, but some others are waiting until their late twenties or even early thirties.

Among males in most countries, a_0 accounts for virtually all the change in SMAM. In general, but particularly for males, the tempo or age dispersion of marriage does not follow the trend in SMAMs very closely and is much more variable over time. The basic data in Appendix Tables 1 and 2 show that the subregions and sexes differ substantially and that k values

Figure 3. Regressions of SMAM on year



fluctuate within each series. Moreover, k values for males move indecisively or trend downward rather than upward, often counteracting the effect of the rising a_0 on SMAMs, while among females both the onset and the tempo components contribute to rising SMAMs. Figure 4 depicts this key difference between males and females (This is also seen in the across-country zero-order correlations between k and SMAM: -0.468 for males and 0.352 for females.) The diagonals indicate levels of SMAM associated with various combinations of a_0 and k . Female shifts toward higher SMAMs involve both later onset of marriage and slower tempos (higher dispersions of marriage ages). Male shifts toward higher SMAMs occur despite downward movements in k (reduced dispersions of marriage ages). The only exceptions to this generalization are Nepal, Myanmar (formerly Burma), and Japan.

Figure 4. Levels of the components of SMAM: a_0 and k

A. South Asia

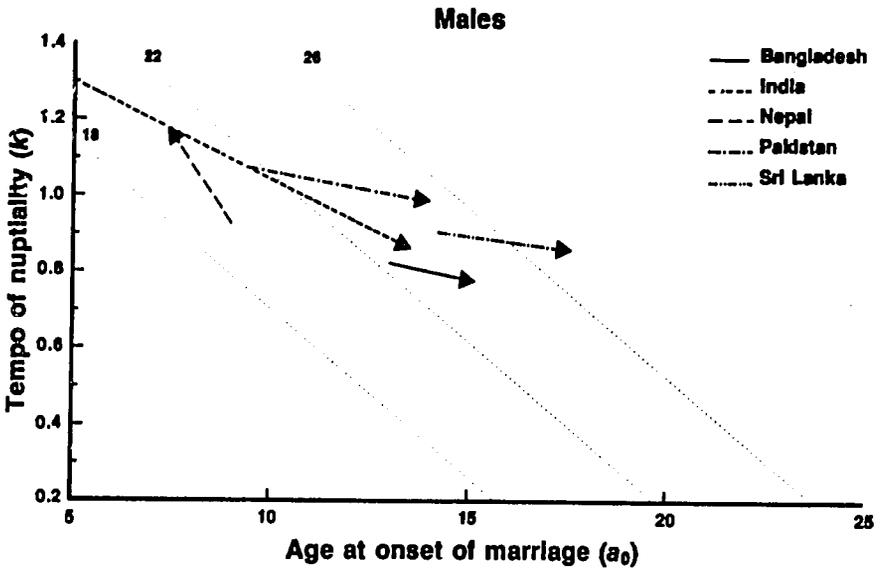
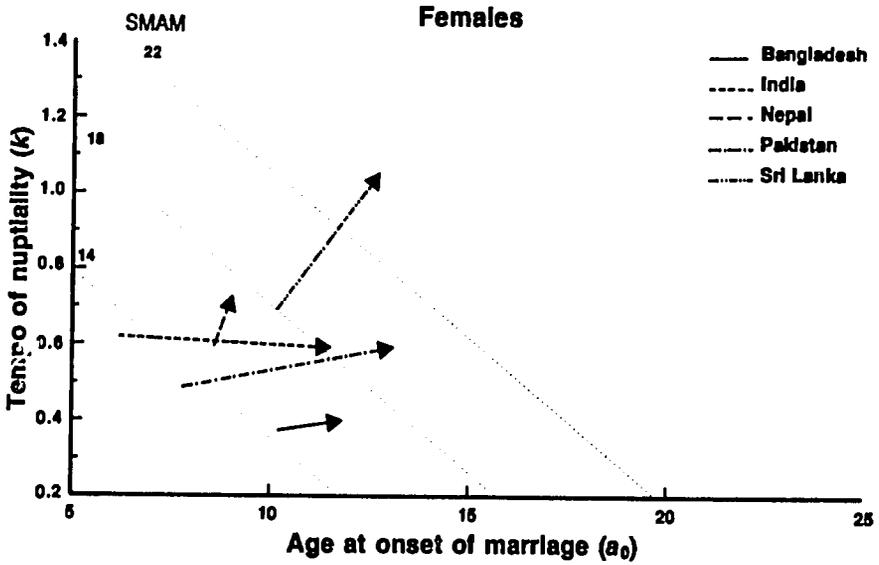


Figure 4. (continued)

B. Southeast Asia

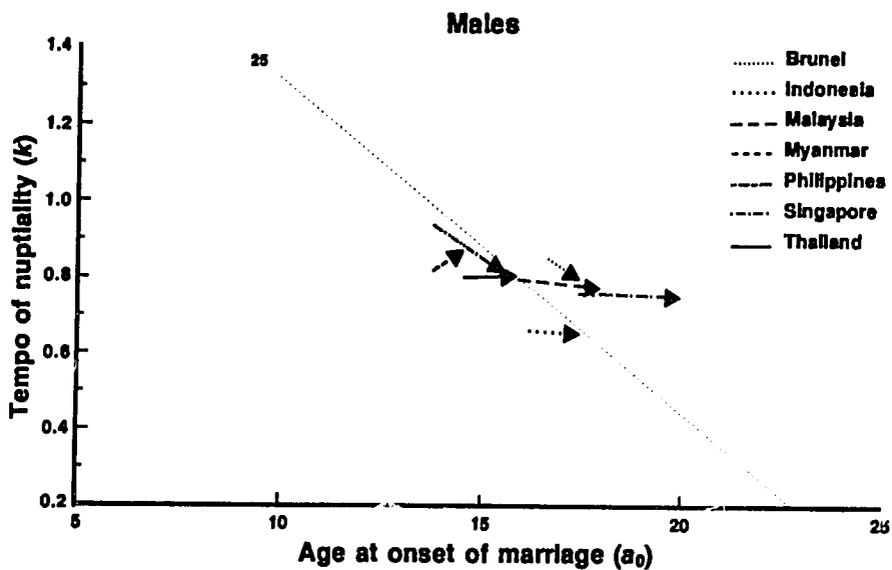
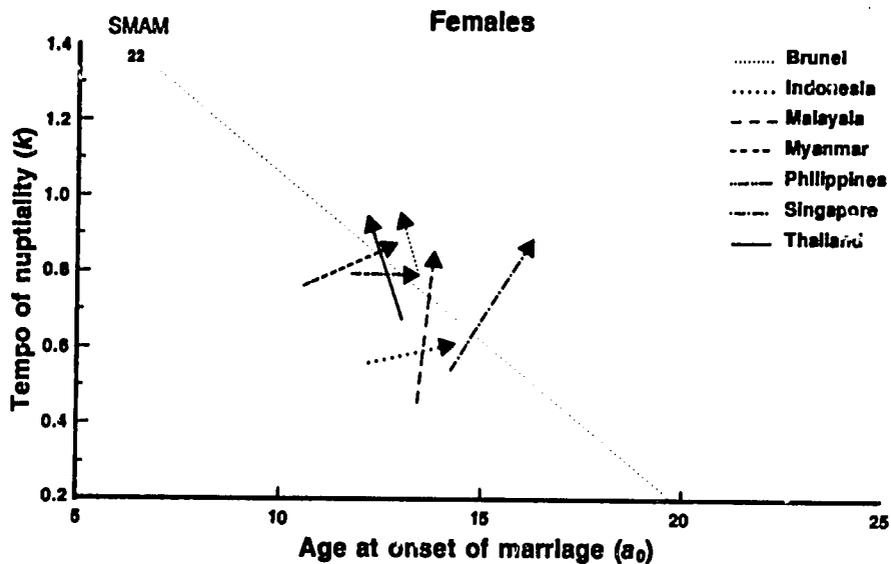
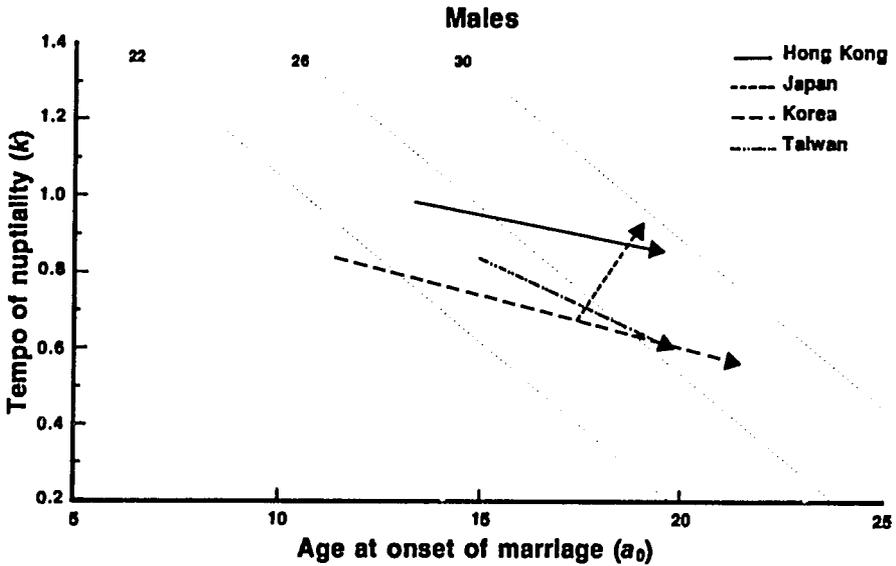


Figure 4. (continued)

C. East Asia



Among females the first marriage process has been spread over time across a greater range of the life course. Although fewer marriages are now occurring at the earliest ages, a proportionally greater number of marriages are occurring at later ages. But we also find a sharply contrasting pattern for males. As females have had a more diverse experience, males have seen greater homogeneity in marriage ages. The female element of this pattern does not seem difficult to explain. Social change has opened to women adult roles outside the family, and this has created categories of women for whom late marriage is an acceptable or even a desirable option. But men have experienced these same social changes, though to a lesser degree. We suggest that the homogenization of male marriage ages must in addition reflect the reduction or disappearance of important impediments that existed in the past to marriage near the modal age. In many settings, for example, sex ratio distortions due to sex-selective migration have diminished over time. This is true of Hong Kong, Malaysia, and Taiwan. Still, some countries that have not experienced such disturbances also show a progressive age homogenization among males; examples include Indonesia, the Philippines, South Korea, and Thailand. Apparently there have been impediments other than the short-term unavailability of potential spouses that now operate less forcefully for males than in the past.

The relative homogeneity of male marriage ages compared with female marriage ages is evident at the aggregate (cross-national) as well as micro levels. Two aggregate comparisons are provided by multiple classification analysis results for variations in national SMAMs across units classified by broad subregion (South, Southeast, East Asia) and by predominant religion (Table 4). These are different ways to express underlying cultural differences with the limited data at hand. In both classifications the country/date units show greater female than male group differences and greater proportions of the total variance in female SMAMs accounted for by the classifications.

These results indicate an underlying gender difference in marriage patterns that manifests itself in a variety of ways. Compared with females, male marriage timing has changed more slowly; male age homogeneity within populations or cohorts is greater and is increasing (whereas women have moved toward less homogeneity); and across populations male marriage timing is less closely linked with underlying cultural features than is female marriage timing. These and other differences between male and female nuptiality warrant more intensive investigation than can be provided here. For example, we would like to know whether male marriage timing was more closely linked with underlying cultural features in the past and whether female marriage timing was as closely linked as it has been recently. Our data do not provide sufficient cases in different time periods to explore these questions.

At the outset we commented briefly on the role of demographic structure in Asian nuptiality. Whatever the significance of sex ratio patterns may

Table 4. Multiple classification analysis of the singulate mean age at marriage: countries of Asia, 1891-1986

| Classification | Female | | Male | |
|-------------------------|------------|-----------------------|------------|-----------------------|
| | Unadjusted | Adjusted ^a | Unadjusted | Adjusted ^a |
| Overall mean | 21.6 | | 25.8 | |
| Zone | | | | |
| South Asia | -3.28 | -2.93 | -0.18 | -1.42 |
| Southeast Asia | 0.58 | 0.63 | -0.26 | -0.11 |
| East Asia | 1.81 | 1.54 | 1.42 | 1.04 |
| Eta | 0.26 | | 0.58 | |
| Multiple R ² | | 0.60 | | 0.65 |
| Religion | | | | |
| Hindu | -5.52 | -5.22 | -3.08 | -2.77 |
| Buddhist | -0.38 | -0.31 | -0.71 | -0.44 |
| Confucian | 1.99 | 1.80 | 1.52 | 1.24 |
| Muslim | -1.46 | -1.29 | -1.18 | -0.99 |
| Christian | 1.01 | 1.19 | -0.16 | 0.05 |
| Eta | 0.85 | | 0.71 | |
| Multiple R ² | | 0.88 | | 0.61 |

Note: Zone and religion analyses were run separately. Units of analysis are 110 country/date combinations.

a. Adjusted for year and GNP per capita.

be for the gender divergence in tempo trends—and we have suggested that the purely demographic effect is relatively unimportant—we can show a significant impact of sex ratios on another important aspect of nuptiality: the celibacy pattern.

PERMANENT CELIBACY

It has long been a commonsense deduction that celibacy emerges in association with a late marriage pattern—that late marriage and nonmarriage result from the same underlying changes (Watkins 1984; Dixon 1978). But Asian celibacy levels have been quite low heretofore with virtually no evidence of any increase over time,⁴ despite the great increases in age at marriage that have occurred. An overview a decade ago reported national female celibacy levels of only 1 or 2 percent with only three exceptions: Sri Lanka, Myanmar, and the Philippines (Peter C. Smith 1980:74-80).

4. In the demographic literature celibacy is generally indexed by the percentage never married among persons around age 50, for convenience at ages 45-49.

That earlier analysis was limited to females and to one-census techniques. We can now elaborate and to a degree revise this picture by examining measures of celibacy for males as well as for females based on two-census measures. Since they reflect the age-specific nuptiality of well-defined time periods, these measures are better suited than are one-census measures for identifying an emergent pattern of permanent celibacy if indeed there is one. The one-census measure suffers from the fact that observed percentages single at the older ages often reflect high marriage probabilities in the past.

Here we illustrate only for Japan and Thailand (see Appendix Tables 3 and 4) what is apparent in our two-census results for many countries. The same patterns are observed, for females, in 11 of the 15 countries for which two-census estimation is possible and, for males, in 5 of these countries. First, we note that among males there were a few earlier periods of relatively high celibacy—for example, in Pakistan in the decade after partition, in Hong Kong recently, and in Taiwan after the retreat of the Kuomintang from the Chinese mainland. These are clear examples of sex ratio effects, short run in character. As for the recent past, the data for Japan in Figure 5 suggest rising celibacy levels recently for both males and females, but this rather slight trend is the only example in the observed (one-census) distributions. Yet the two-census results suggest the possibility of emerging celibacy patterns in a number of countries. Figure 5 illustrates the rising celibacy trend among males in Japan. Many other countries have the same kind of trend, though nowhere does the level reach as high as it does in the two-census estimates for Japan, describing the decade of the 1970s. Thailand (Figure 5) illustrates a different pattern: here the trend toward rising celibacy is clear for females but absent among males. Bangladesh and Hong Kong also reflect this pattern. These results are especially notable considering that they describe the whole of each national population. There is substantial evidence that celibacy is common in segments of urban or educated populations—for example, in Singapore (Quah 1989), Thailand (Chamrathirong 1985), and the Philippines (unpublished results)—where college-educated women have very high levels of permanent celibacy. But the results reported here suggest that in some societies a more extensive pattern may be emerging.

CONCLUSION

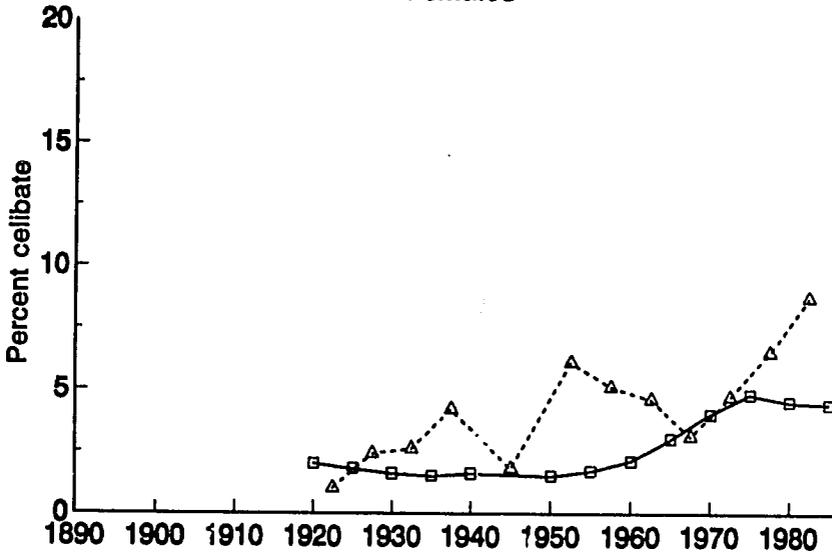
This brief survey has examined trends across Asia in the female and male mean ages at entrance to marriage. The female SMAM has been the object of considerable attention, while the male age at marriage has not. We have shown that with few exceptions the long-term trend to later female marriage continued into the 1980s and in many countries has produced quite high percentages single in the young age groups. With the exceptions noted,

Figure 5. Trends in celibacy: comparison of one-census and two-census estimates

A. Japan

One-Census Two-Census

Females



Males

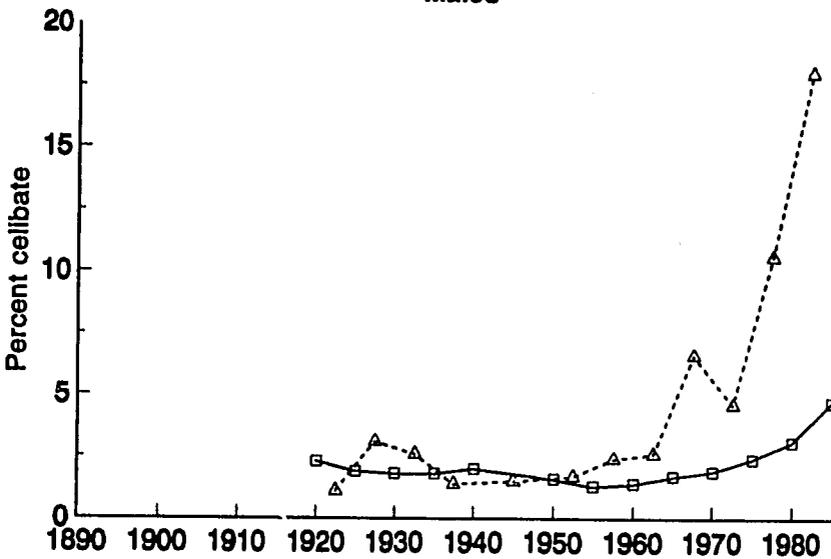
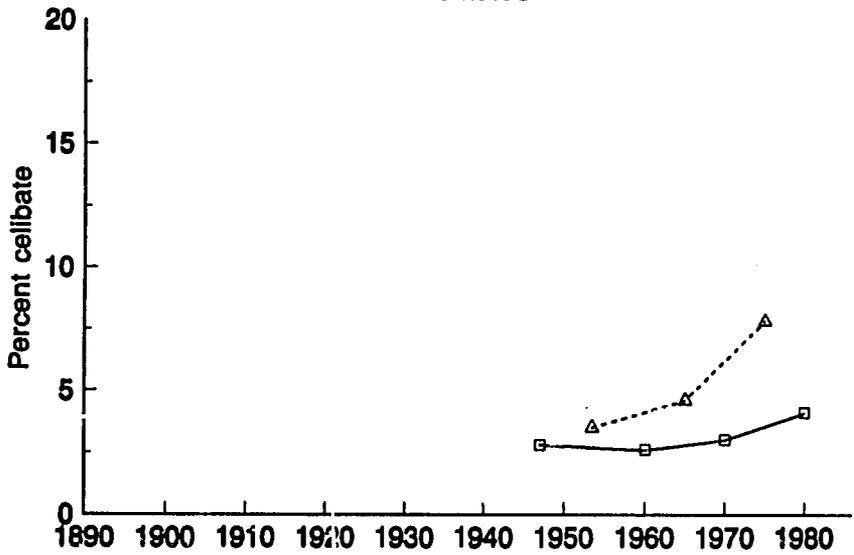


Figure 5. (continued)

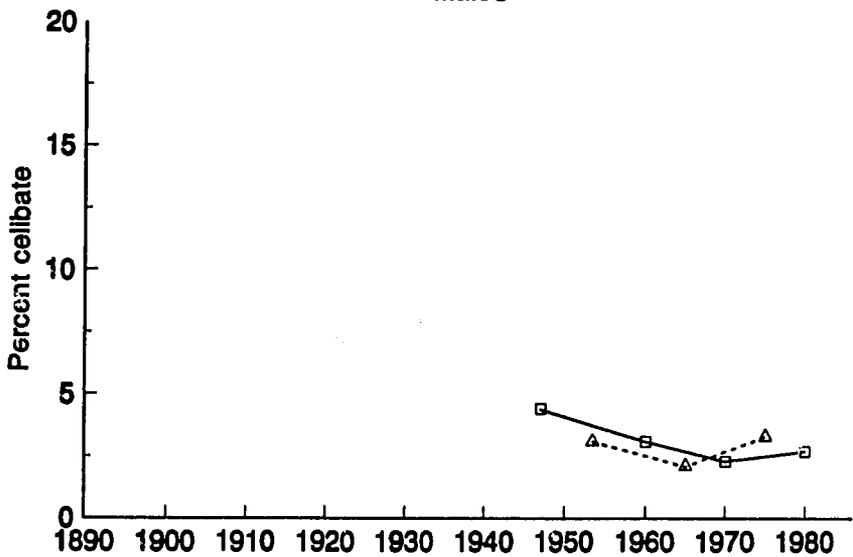
B. Thailand

One-Census  Two-Census 

Females



Males



we see no indication that the trend has abated. Trends for males are in sharp contrast. There has been less change and the pace of change has been slower. In fact, the underlying components of change have been different for females and males. The essential difference is that female ages at marriage have become more diverse, while there has been a homogenization of male marriage ages. In ongoing research we are investigating how these differences among countries and between the sexes reflect the disparate trends in economic growth that have been experienced and are exploring differences in the impacts on women and men.

APPENDIX: BASIC DATA

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Appendix Table 1. Trends in census indicators of nuptiality for the countries of Asia: females

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|-------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTH ASIA | | | | | | |
| Bangladesh | | | | | | |
| 1951 | 14.4 | 10.2 | .373 | .998 | 11.3 | 3.0 |
| 1961 | 13.9 | 9.8 | .360 | .999 | 8.3 | 1.3 |
| 1974 | 15.9 | 11.6 | .381 | .997 | 24.5 | 3.2 |
| 1981 | 16.4 | 11.8 | .400 | .996 | 31.2 | 5.1 |
| India | | | | | | |
| 1891 ^a | 13.2 | 6.2 | .619 | .990 | 13.2 | 3.4 |
| 1901 ^b | 13.8 | 6.6 | .638 | .989 | 16.3 | 4.4 |
| 1911 ^b | 13.6 | 7.0 | .578 | .988 | 14.3 | 3.6 |
| 1921 ^b | 13.9 | 7.0 | .610 | .989 | 16.6 | 4.1 |
| 1931 ^b | 13.8 | 6.2 | .670 | .991 | 17.6 | 4.4 |
| 1941 ^b | 15.2 | 9.0 | .543 | .991 | 25.2 | 4.1 |
| 1951 ^b | 15.5 | 7.8 | .677 | .987 | 28.4 | 6.0 |
| 1961 ^b | 15.8 | 9.4 | .567 | .995 | 29.2 | 6.0 |
| 1971 ^b | 17.2 | 9.8 | .649 | .995 | 43.8 | 9.5 |
| 1981 ^c | 18.1 | 11.4 | .593 | .996 | 55.9 | 10.1 |
| Nepal | | | | | | |
| 1961 | 15.4 | 8.6 | .595 | .994 | 25.7 | 5.3 |
| 1971 | 16.8 | 9.8 | .614 | .992 | 39.3 | 7.9 |
| 1981 | 17.2 | 9.0 | .717 | .971 | 49.2 | 13.1 |
| Pakistan | | | | | | |
| 1921 ^d | 13.3 | 7.8 | .487 | .989 | 10.8 | 3.2 |
| 1931 ^d | 13.4 | 7.8 | .495 | .988 | 10.8 | 3.6 |
| 1941 ^d | 14.6 | 8.2 | .565 | .994 | 20.8 | 3.7 |
| 1951 | 17.9 | 9.4 | .744 | .977 | 45.5 | 17.7 |
| 1961 | 17.6 | 9.8 | .686 | .980 | 46.6 | 12.0 |
| 1973 | 20.0 | 13.0 | .617 | .992 | 71.5 | 24.9 |
| 1981 | 19.7 | 13.0 | .591 | .996 | 67.6 | 21.2 |
| Sri Lanka | | | | | | |
| 1901 | 18.1 | 10.2 | .696 | .899 | 48.1 | 21.0 |
| 1921 | 20.6 | 11.8 | .775 | .927 | 72.1 | 31.0 |
| 1946 | 20.7 | 13.0 | .676 | .966 | 75.4 | 29.4 |
| 1953 | 20.9 | 12.6 | .727 | .956 | 75.7 | 32.5 |
| 1963 | 22.1 | 13.8 | .726 | .961 | 84.7 | 41.4 |
| 1971 | 23.5 | 13.8 | .857 | .959 | 89.4 | 53.2 |
| 1981 | 24.4 | 12.6 | 1.035 | .956 | 89.7 | 55.3 |

Appendix Table 1. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTHEAST ASIA | | | | | | |
| Brunei | | | | | | |
| 1971 | 22.4 | 13.4 | .791 | .955 | 85.3 | 44.3 |
| 1981 | 23.8 | 13.0 | .948 | .945 | 87.1 | 55.2 |
| Indonesia | | | | | | |
| 1964 | 18.6 | 12.2 | .560 | .990 | 59.8 | 14.2 |
| 1971 | 19.2 | 12.2 | .613 | .990 | 62.6 | 18.5 |
| 1976 ^e | 19.9 | 12.6 | .642 | .991 | 67.8 | 23.4 |
| 1980 | 20.0 | 13.0 | .615 | .988 | 70.0 | 22.3 |
| 1985 ^e | 21.1 | 14.0 | .607 | .986 | 81.2 | 29.7 |
| Malaysia | | | | | | |
| 1947 | 18.5 | 13.4 | .448 | .975 | 57.8 | 13.3 |
| 1957 | 19.2 | 12.2 | .621 | .986 | 63.0 | 21.4 |
| 1960 | 19.4 | 12.6 | .599 | .983 | 64.9 | 20.8 |
| 1970 | 21.8 | 13.0 | .770 | .984 | 82.5 | 41.4 |
| 1980 | 23.5 | 13.8 | .852 | .970 | 89.7 | 51.3 |
| Myanmar (Burma) | | | | | | |
| 1953 | 19.3 | 10.6 | .764 | .922 | 58.6 | 25.1 |
| 1983 | 22.4 | 12.6 | .862 | .941 | 83.2 | 42.1 |
| Philippines | | | | | | |
| 1903 ^f | 20.8 | 11.8 | .795 | .925 | 80.2 | 36.1 |
| 1939 ^f | 21.8 | 12.2 | .843 | .948 | 73.6 | 33.3 |
| 1948 | 22.2 | 13.4 | .775 | .951 | 85.1 | 40.7 |
| 1960 | 22.2 | 14.2 | .704 | .951 | 87.3 | 44.3 |
| 1970 | 22.8 | 14.2 | .758 | .951 | 89.2 | 50.3 |
| 1975 | 23.2 | 13.4 | .860 | .939 | 87.6 | 51.2 |
| 1980 | 22.4 | 13.4 | .791 | .933 | 85.9 | 45.5 |
| Singapore | | | | | | |
| 1957 | 20.3 | 14.2 | .540 | .943 | 80.0 | 33.0 |
| 1966 | 24.3 | 16.6 | .681 | .971 | 96.7 | 63.2 |
| 1970 | 24.2 | 15.8 | .743 | .969 | 95.2 | 64.6 |
| 1980 | 26.2 | 16.2 | .879 | .958 | 97.7 | 73.8 |
| Thailand | | | | | | |
| 1947 ^g | 20.6 | 13.0 | .674 | .972 | 75.5 | 28.1 |
| 1960 ^g | 21.6 | 13.4 | .726 | .974 | 81.5 | 36.3 |
| 1970 | 22.0 | 13.0 | .789 | .970 | 81.1 | 38.0 |
| 1980 | 22.8 | 12.2 | .931 | .959 | 83.3 | 43.5 |

Appendix Table 1. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|--|--|-------|------|-------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| Vietnam 1989 | 23.2 | 13.4 | .863 | .965 | 89.1 | 43.1 |
| EAST ASIA | | | | | | |
| China (People's Republic) ^h | | | | | | |
| 1955 | 19.1 | 14.6 | .394 | .995 | 68.8 | 12.2 |
| 1960 | 19.8 | 15.0 | .419 | .996 | 76.1 | 18.0 |
| 1965 | 20.0 | 15.4 | .407 | .994 | 80.2 | 18.7 |
| 1970 | 20.7 | 15.8 | .429 | .987 | 86.7 | 26.8 |
| 1975 | 22.2 | 16.2 | .528 | .991 | 93.1 | 46.2 |
| 1980 | 22.8 | 17.8 | .442 | .982 | 96.9 | 54.2 |
| 1982 | 22.3 | 17.0 | .464 | .992 | 95.4 | 46.1 |
| 1987 | 22.0 | 17.4 | .406 | .998 | 95.7 | 40.0 |
| Hong Kong | | | | | | |
| 1931 ⁱ | 20.7 | 12.6 | .717 | .964 | 74.1 | 26.1 |
| 1961 ⁱ | 21.9 | 16.2 | .502 | .926 | 93.6 | 48.6 |
| 1966 | 22.5 | 17.0 | .484 | .941 | 95.2 | 57.0 |
| 1971 | 23.8 | 18.6 | .457 | .962 | 97.1 | 67.6 |
| 1976 | 24.5 | 17.0 | .656 | .973 | 96.1 | 68.4 |
| 1981 | 25.3 | 16.6 | .769 | .977 | 96.6 | 71.3 |
| 1986 | 26.8 | 16.2 | .930 | .976 | 97.9 | 78.7 |
| Japan | | | | | | |
| 1920 | 21.2 | 14.2 | .612 | .980 | 82.3 | 31.4 |
| 1925 | 21.2 | 15.0 | .543 | .982 | 85.9 | 29.6 |
| 1930 | 21.8 | 15.4 | .565 | .984 | 89.2 | 37.7 |
| 1935 | 22.5 | 15.8 | .590 | .985 | 92.5 | 44.9 |
| 1940 | 23.3 | 16.6 | .592 | .984 | 95.7 | 53.5 |
| 1950 | 23.6 | 16.6 | .616 | .985 | 96.6 | 55.3 |
| 1955 | 24.7 | 17.4 | .641 | .983 | 98.3 | 66.5 |
| 1960 | 25.0 | 17.4 | .665 | .979 | 98.6 | 68.3 |
| 1965 | 24.8 | 17.4 | .652 | .970 | 98.6 | 68.1 |
| 1970 | 24.6 | 19.0 | .496 | .960 | 97.9 | 71.7 |
| 1975 | 24.5 | 18.2 | .552 | .952 | 98.8 | 69.2 |
| 1980 | 25.1 | 19.4 | .502 | .955 | 99.0 | 77.8 |
| 1985 | 25.7 | 19.4 | .558 | .956 | 99.0 | 81.1 |
| Korea (South) | | | | | | |
| 1925 | 16.0 | 11.8 | .372 | .990 | 27.8 | 2.5 |
| 1930 | 16.5 | 11.8 | .414 | 1.000 | 33.2 | 2.3 |
| 1935 | 17.0 | 12.2 | .418 | .999 | 38.0 | 4.3 |
| 1940 | 17.8 | 13.4 | .389 | .999 | 48.5 | 5.5 |

Appendix Table 1. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| 1955 | 20.5 | 15.8 | .410 | .998 | 85.2 | 20.8 |
| 1960 | 22.6 | 17.8 | .420 | .999 | 97.5 | 49.0 |
| 1966 | 22.8 | 17.0 | .512 | .999 | 96.1 | 51.6 |
| 1970 | 23.3 | 17.8 | .482 | .999 | 97.1 | 57.2 |
| 1975 | 23.7 | 18.2 | .484 | .998 | 97.4 | 62.5 |
| 1980 | 24.1 | 18.6 | .482 | .997 | 98.2 | 66.1 |
| 1985 | 24.5 | 19.4 | .447 | .959 | 99.1 | 72.1 |
| Taiwan | | | | | | |
| 1915 | 19.1 | 13.8 | .467 | .995 | 65.3 | 12.6 |
| 1920 | 19.2 | 13.8 | .477 | .994 | 67.2 | 13.4 |
| 1930 | 19.3 | 13.8 | .483 | .994 | 67.4 | 13.7 |
| 1935 | 19.7 | 14.2 | .484 | .993 | 71.9 | 17.0 |
| 1940 | 19.6 | 13.8 | .506 | .994 | 70.5 | 15.6 |
| 1956 | 21.1 | 15.8 | .470 | .990 | 88.4 | 29.3 |
| 1966 | 21.9 | 15.8 | .540 | .991 | 91.3 | 40.4 |
| 1970 | 22.6 | 16.2 | .560 | .988 | 92.8 | 50.4 |
| 1975 | 23.3 | 16.2 | .626 | .992 | 94.4 | 56.7 |
| 1980 | 23.8 | 16.2 | .668 | .991 | 94.7 | 58.5 |
| 1985 | 24.7 | 16.6 | .712 | .974 | 96.9 | 66.5 |

a. Includes Burma (now Myanmar).

b. Adjusted proportions single; see Bhat and Kanbargi (1984: app. B).

c. Five percent sample data.

d. Proportions single as given in Sadiq (1965).

e. Population Statistics Division (1987: table 2.3).

f. Calculated from data for 10-year age groups; see P. Smith (1975).

g. Adjusted ages taken from Chamrathirong (1976).

h. Through 1982, based on the 1/1,000 Fertility Survey of 1982; see Smith and Wei (1986). Estimate for 1987 based on the 1/100 sample survey (unpublished tabulation).

i. Based on data from ESCAP (1974:83).

Appendix Table 2. Trends in census indicators of nuptiality for the countries of Asia: males

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|-------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTH ASIA | | | | | | |
| Bangladesh | | | | | | |
| 1951 | 22.4 | 13.0 | .825 | .987 | 83.9 | 46.3 |
| 1961 | 22.9 | 13.8 | .801 | .992 | 87.8 | 49.7 |
| 1974 | 24.0 | 14.6 | .823 | .989 | 92.3 | 60.1 |
| 1981 | 23.9 | 15.0 | .780 | .988 | 93.2 | 59.7 |
| India | | | | | | |
| 1891 ^a | 19.8 | 5.0 | 1.299 | .961 | 62.1 | 35.0 |
| 1901 ^b | 20.1 | 6.2 | 1.220 | .951 | 62.6 | 36.2 |
| 1911 ^b | 20.1 | 6.2 | 1.223 | .958 | 63.7 | 36.7 |
| 1921 ^b | 20.5 | 6.6 | 1.222 | .957 | 65.4 | 38.8 |
| 1931 ^b | 19.4 | 5.0 | 1.268 | .960 | 59.5 | 32.1 |
| 1941 ^b | 20.2 | 7.0 | 1.159 | .962 | 67.5 | 35.6 |
| 1951 ^b | 20.8 | 8.2 | 1.104 | .961 | 67.9 | 39.3 |
| 1961 ^b | 21.6 | 10.2 | 1.003 | .967 | 76.2 | 43.9 |
| 1971 ^b | 22.4 | 11.8 | .932 | .973 | 81.6 | 50.0 |
| 1981 ^c | 23.3 | 13.4 | .869 | .977 | 87.5 | 56.1 |
| Nepal | | | | | | |
| 1961 | 19.5 | 9.0 | .927 | .984 | 63.3 | 26.4 |
| 1971 | 20.8 | 10.6 | .898 | .984 | 73.0 | 33.1 |
| 1981 | 20.7 | 7.4 | 1.172 | .926 | 74.1 | 40.8 |
| Pakistan | | | | | | |
| 1921 ^d | 21.6 | 9.4 | 1.073 | .964 | 74.0 | 42.2 |
| 1931 ^d | 20.0 | 7.0 | 1.139 | .966 | 57.2 | 37.5 |
| 1941 ^d | 21.7 | 10.6 | .978 | .969 | 77.1 | 42.1 |
| 1951 | 21.7 | 7.8 | 1.226 | .955 | 68.1 | 42.0 |
| 1961 | 23.5 | 11.0 | 1.102 | .948 | 83.7 | 52.9 |
| 1973 | 25.8 | 15.0 | .949 | .976 | 94.8 | 68.8 |
| 1981 | 25.1 | 13.8 | .992 | .975 | 92.5 | 64.6 |
| Sri Lanka | | | | | | |
| 1901 | 25.5 | 14.2 | .910 | .871 | 93.0 | 63.0 |
| 1921 | 27.4 | 16.6 | .951 | .887 | 98.5 | 81.4 |
| 1946 | 24.4 | 17.0 | .654 | .924 | 98.8 | 80.5 |
| 1953 | 27.2 | 17.8 | .827 | .924 | 98.8 | 83.6 |
| 1963 | 28.0 | 17.4 | .829 | .928 | 99.0 | 84.7 |
| 1971 | 27.7 | 18.2 | .838 | .920 | 99.4 | 86.6 |
| 1981 | 27.2 | 17.4 | .863 | .929 | 99.0 | 83.6 |

Appendix Table 2. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTHEAST ASIA | | | | | | |
| Brunei | | | | | | |
| 1971 | 26.3 | 16.6 | .849 | .945 | 97.8 | 75.9 |
| 1981 | 26.5 | 17.4 | .796 | .947 | 98.2 | 78.9 |
| Indonesia | | | | | | |
| 1971 | 23.7 | 16.2 | .663 | .982 | 94.9 | 58.6 |
| 1976 ^e | 23.8 | 16.2 | .671 | .991 | 95.6 | 58.1 |
| 1980 | 24.0 | 16.2 | .689 | .989 | 96.4 | 59.4 |
| 1985 ^e | 24.8 | 17.4 | .653 | .982 | 98.2 | 68.9 |
| Malaysia | | | | | | |
| 1947 | 24.5 | 15.4 | .804 | .874 | 95.7 | 66.0 |
| 1957 | 23.8 | 15.8 | .704 | .932 | 95.2 | 62.3 |
| 1960 | 24.4 | 14.6 | .864 | .966 | 92.6 | 61.7 |
| 1970 | 25.3 | 16.2 | .801 | .966 | 96.8 | 73.4 |
| 1980 | 26.6 | 17.8 | .775 | .960 | 98.7 | 80.4 |
| Myanmar (Burma) | | | | | | |
| 1953 | 23.1 | 13.8 | .821 | .934 | 89.4 | 50.0 |
| 1983 | 24.5 | 14.6 | .870 | .962 | 93.3 | 60.1 |
| Philippines | | | | | | |
| 1903 ^f | 24.5 | 13.8 | .939 | .939 | 92.3 | 56.9 |
| 1939 ^f | 24.9 | 15.4 | .832 | .966 | 96.2 | 62.5 |
| 1948 | 25.0 | 15.8 | .807 | .965 | 97.0 | 64.8 |
| 1960 | 24.9 | 16.2 | .768 | .968 | 97.0 | 65.5 |
| 1970 | 25.4 | 16.2 | .811 | .963 | 97.6 | 69.3 |
| 1975 | 25.5 | 15.8 | .849 | .948 | 96.8 | 69.1 |
| 1980 | 24.8 | 15.8 | .796 | .958 | 96.3 | 63.3 |
| Singapore | | | | | | |
| 1957 | 26.0 | 17.4 | .760 | .922 | 98.4 | 77.7 |
| 1966 | 28.1 | 19.0 | .797 | .959 | 99.7 | 89.4 |
| 1970 | 27.8 | 19.0 | .774 | .941 | 99.5 | 88.5 |
| 1980 | 28.4 | 19.8 | .754 | .936 | 99.6 | 91.9 |
| Thailand | | | | | | |
| 1947 ^g | 23.7 | 14.6 | .801 | .956 | 91.1 | 57.0 |
| 1960 ^g | 24.5 | 15.8 | .767 | .969 | 94.7 | 65.7 |
| 1970 | 24.7 | 15.8 | .782 | .977 | 96.2 | 63.8 |
| 1980 | 24.9 | 15.8 | .804 | .973 | 95.7 | 65.7 |
| Vietnam | | | | | | |
| 1989 | 24.5 | 15.8 | .766 | .998 | 95.7 | 62.7 |

Appendix Table 2. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|--|--|-------|-------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| EAST ASIA | | | | | | |
| China (People's Republic)^h | | | | | | |
| 1982 | 24.9 | 18.2 | .591 | .956 | 99.1 | 72.0 |
| 1987 | 24.0 | 17.4 | .580 | .950 | 98.5 | 61.1 |
| Hong Kong | | | | | | |
| 1931 ⁱ | 24.6 | 13.4 | .985 | .932 | 91.0 | 61.4 |
| 1961 ⁱ | 28.7 | 17.4 | .993 | .949 | 98.7 | 86.2 |
| 1966 ⁱ | 29.3 | 19.4 | .867 | .961 | 99.4 | 92.3 |
| 1971 | 30.2 | 18.6 | 1.020 | .928 | 99.6 | 92.1 |
| 1976 | 29.2 | 18.2 | .966 | .920 | 99.4 | 89.3 |
| 1981 | 28.7 | 18.6 | .887 | .908 | 98.7 | 89.4 |
| 1986 | 29.2 | 19.4 | .859 | .926 | 99.4 | 92.2 |
| Japan | | | | | | |
| 1920 | 25.0 | 17.4 | .672 | .977 | 97.3 | 71.1 |
| 1925 | 25.1 | 17.8 | .642 | .981 | 98.2 | 72.6 |
| 1930 | 25.8 | 19.0 | .596 | .982 | 99.0 | 79.7 |
| 1935 | 26.4 | 19.4 | .615 | .982 | 99.4 | 84.1 |
| 1940 | 27.2 | 20.6 | .580 | .980 | 99.6 | 90.9 |
| 1950 | 26.2 | 19.4 | .600 | .984 | 99.5 | 82.9 |
| 1955 | 27.0 | 20.6 | .566 | .987 | 99.9 | 90.2 |
| 1960 | 27.4 | 20.6 | .601 | .986 | 99.8 | 91.6 |
| 1965 | 27.4 | 20.2 | .633 | .983 | 99.6 | 90.4 |
| 1970 | 27.4 | 20.2 | .638 | .981 | 99.3 | 90.1 |
| 1975 | 27.6 | 19.4 | .725 | .976 | 99.6 | 88.0 |
| 1980 | 28.7 | 19.8 | .780 | .969 | 99.7 | 91.8 |
| 1985 | 29.5 | 19.0 | .925 | .953 | 99.5 | 92.0 |
| Korea (South) | | | | | | |
| 1925 | u | u | u | u | u | u |
| 1930 | 20.9 | 11.4 | .840 | .990 | 71.0 | 33.4 |
| 1935 | u | u | u | u | u | u |
| 1940 | 21.8 | 13.8 | .701 | .995 | 83.7 | 37.0 |
| 1955 | 24.6 | 16.2 | .738 | .996 | 94.4 | 67.1 |
| 1960 | 26.4 | 20.2 | .548 | .998 | 99.2 | 87.0 |
| 1966 | 26.7 | 20.6 | .536 | .998 | 99.4 | 90.0 |
| 1970 | 27.2 | 21.0 | .541 | .998 | 99.7 | 92.6 |
| 1975 | 27.4 | 21.0 | .561 | .997 | 99.7 | 92.9 |
| 1980 | 27.3 | 21.0 | .556 | .996 | 99.8 | 93.1 |
| 1985 | 27.8 | 21.4 | .565 | .994 | 99.8 | 94.4 |

Appendix Table 2. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| Taiwan | | | | | | |
| 1915 | 24.5 | 15.0 | .837 | .961 | 94.3 | 59.9 |
| 1920 | 24.2 | 15.0 | .807 | .963 | 93.7 | 57.2 |
| 1930 | 23.2 | 15.0 | .721 | .967 | 92.7 | 48.4 |
| 1935 | 23.2 | 15.8 | .654 | .963 | 94.3 | 50.2 |
| 1940 | 23.0 | 15.4 | .664 | .970 | 93.0 | 46.4 |
| 1956 | 24.8 | 15.8 | .796 | .944 | 97.9 | 64.2 |
| 1966 | 26.1 | 19.4 | .586 | .818 | 99.0 | 84.6 |
| 1970 | 25.3 | 21.0 | .378 | .837 | 99.2 | 87.7 |
| 1975 | 24.8 | 20.2 | .405 | .891 | 99.3 | 87.3 |
| 1980 | 25.3 | 19.8 | .484 | .935 | 99.1 | 87.4 |
| 1985 | 26.6 | 19.8 | .602 | .951 | 99.4 | 90.0 |

u—unavailable; cannot be calculated.

a. Includes Burma (now Myanmar).

b. Adjusted proportions single; see Bhat and Kanbargi (1984: app. B).

c. Five percent sample data.

d. Proportions single as given in Sadiq (1965).

e. Population Statistics Division (1987: table 2.3).

f. Calculated from data for 10-year age groups; see P. Smith (1975).

g. Adjusted ages taken from Chamrathirong (1976).

h. Estimate for 1982 based on the 1/1,000 Fertility Survey (Smith and Wei 1986); estimate for 1987 based on the 1/100 sample survey (unpublished tabulation).

i. Based on data from ESCAP (1974:83).

Appendix Table 3. Trends in two-census (intercensal) indicators of nuptiality for the countries of Asia: females

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTH ASIA | | | | | | |
| Bangladesh | | | | | | |
| 1951-61 | 13.9 | 10.2 | .328 | .999 | 8.3 | 1.1 |
| 1961-74 | 15.2 | 10.6 | .402 | .989 | 19.5 | 3.9 |
| 1974-81 | 14.8 | 11.4 | .295 | .961 | 32.0 | 6.0 |
| India | | | | | | |
| 1891-1901 ^a | 13.3 | 7.0 | .557 | .968 | 16.3 | 4.8 |
| 1901-11 ^b | 13.9 | 6.6 | .641 | .993 | 16.4 | 4.4 |
| 1911-21 ^b | 14.1 | 7.0 | .620 | .982 | 18.8 | 5.5 |
| 1921-31 ^b | 13.9 | 7.4 | .576 | .996 | 13.9 | 3.9 |
| 1931-41 ^b | 15.1 | 8.2 | .609 | .992 | 24.0 | 6.7 |
| 1941-51 ^b | 15.0 | 8.6 | .565 | .964 | 27.3 | 5.7 |
| 1951-61 ^b | 15.9 | 8.6 | .645 | .998 | 30.3 | 6.4 |
| 1961-71 ^b | 17.0 | 9.4 | .671 | .994 | 40.8 | 10.4 |
| 1971-81 ^{bc} | 18.0 | 10.6 | .654 | .992 | 53.9 | 11.6 |
| Nepal | | | | | | |
| 1961-71 | 17.1 | 9.8 | .638 | .999 | 43.6 | 8.3 |
| 1971-81 | 16.8 | 9.4 | .650 | .940 | 46.3 | 12.8 |
| Pakistan | | | | | | |
| 1921-31 ^d | 13.4 | 7.8 | .493 | .986 | 11.0 | 3.6 |
| 1931-41 ^d | 14.7 | 7.4 | .638 | .996 | 19.4 | 5.6 |
| 1941-51 ^d | 15.8 | 9.0 | .598 | .819 | 42.8 | 20.3 |
| 1951-61 | 17.7 | 9.8 | .695 | .989 | 46.4 | 13.4 |
| 1961-73 | 20.1 | 11.0 | .798 | .963 | 66.0 | 25.1 |
| 1973-81 | 19.8 | 13.0 | .600 | .999 | 68.5 | 21.2 |
| Sri Lanka | | | | | | |
| 1901-11 | 19.9 | 9.0 | .967 | .872 | 63.1 | 25.7 |
| 1911-21 | 20.9 | 10.6 | .910 | .924 | 70.4 | 29.3 |
| 1921-46 | 21.0 | 12.2 | .778 | .972 | 74.2 | 30.3 |
| 1946-53 | 20.2 | 13.4 | .594 | .928 | 76.0 | 32.3 |
| 1953-63 | 22.2 | 12.6 | .842 | .950 | 82.4 | 41.2 |
| 1963-71 | 23.2 | 13.4 | .860 | .910 | 88.5 | 52.5 |
| 1971-81 | 23.7 | 13.4 | .903 | .916 | 89.4 | 54.7 |

Appendix Table 3. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|--|--|-------|-------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTHEAST ASIA | | | | | | |
| Brunei | | | | | | |
| 1971-81 | 22.7 | 13.4 | .819 | .881 | 86.6 | 52.8 |
| Indonesia | | | | | | |
| 1964-71 | 19.1 | 12.2 | .607 | .979 | 62.5 | 18.6 |
| 1971-76 ^c | 19.9 | 11.8 | .716 | .988 | 66.0 | 22.6 |
| 1976-80 ^e | 18.7 | 13.0 | .501 | .937 | 69.9 | 24.5 |
| 1980-85 ^e | 21.3 | 13.8 | .658 | .949 | 81.7 | 34.7 |
| Malaysia | | | | | | |
| 1947-57 | 19.3 | 11.8 | .659 | .983 | 60.9 | 19.6 |
| 1957-60 | 19.2 | 13.4 | .506 | .967 | 67.8 | 22.3 |
| 1960-70 | 20.5 | 11.4 | .802 | .904 | 75.4 | 38.1 |
| 1970-80 | 22.7 | 14.6 | .712 | .919 | 90.1 | 52.0 |
| Myanmar (Burma) | | | | | | |
| 1953-83 | 21.3 | 10.6 | .943 | .918 | 72.1 | 36.1 |
| Philippines | | | | | | |
| 1903-39 ^f | 21.6 | 11.8 | .858 | .941 | 77.3 | 35.3 |
| 1939-48 ^f | 21.3 | 13.4 | .698 | .903 | 83.2 | 40.0 |
| 1948-60 | 22.4 | 13.4 | .796 | .935 | 86.6 | 43.7 |
| 1960-70 | 22.8 | 13.8 | .793 | .924 | 88.8 | 49.3 |
| 1970-75 | 23.2 | 13.0 | .899 | .933 | 87.2 | 50.1 |
| 1975-80 | 22.3 | 13.8 | .746 | .950 | 85.9 | 44.6 |
| Singapore | | | | | | |
| 1957-66 | 25.9 | 13.0 | 1.138 | .897 | 94.3 | 61.7 |
| 1966-70 | 23.1 | 15.8 | .638 | .946 | 95.0 | 63.5 |
| 1970-80 | 25.0 | 16.6 | .743 | .881 | 97.1 | 72.3 |
| Thailand | | | | | | |
| 1947-60 ^g | 21.5 | 13.0 | .746 | .965 | 79.5 | 34.5 |
| 1960-70 ^g | 21.6 | 13.0 | .760 | .954 | 80.9 | 37.3 |
| 1970-80 | 22.1 | 12.6 | .835 | .922 | 82.1 | 42.2 |
| EAST ASIA | | | | | | |
| China (People's Republic) ^h | | | | | | |
| 1955-60 | 19.9 | 14.6 | .473 | .996 | 76.1 | 19.9 |
| 1960-65 | 20.1 | 15.4 | .410 | .991 | 80.2 | 19.7 |

Appendix Table 3. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| 1965-70 | 20.8 | 15.8 | .441 | .983 | 86.7 | 29.0 |
| 1970-75 | 22.9 | 15.8 | .624 | .987 | 93.1 | 49.6 |
| 1975-80 | 22.9 | 17.8 | .454 | .971 | 96.9 | 56.4 |
| 1980-82 | 21.8 | 17.0 | .423 | .999 | 94.3 | 39.3 |
| 1982-87 | 22.0 | 17.4 | .404 | .999 | 95.7 | 40.1 |
| Hong Kong | | | | | | |
| 1931-61i | 21.4 | 14.2 | .633 | .935 | 84.9 | 39.0 |
| 1961-66i | 23.4 | 16.6 | .599 | .963 | 95.2 | 58.0 |
| 1966-71 | 24.7 | 16.6 | .711 | .969 | 97.1 | 66.9 |
| 1971-76 | 24.8 | 16.6 | .718 | .969 | 96.1 | 67.7 |
| 1976-81 | 24.8 | 17.0 | .688 | .914 | 96.6 | 71.7 |
| 1981-86 | 26.7 | 17.0 | .851 | .899 | 97.9 | 79.8 |
| Japan | | | | | | |
| 1920-25 | 21.3 | 15.0 | .555 | .990 | 86.0 | 30.9 |
| 1925-30 | 22.1 | 15.0 | .624 | .976 | 89.3 | 39.2 |
| 1930-35 | 22.8 | 15.4 | .649 | .974 | 92.5 | 46.5 |
| 1935-40 | 23.5 | 16.2 | .639 | .958 | 95.8 | 55.4 |
| 1940-50 | 23.6 | 16.6 | .614 | .982 | 96.4 | 55.1 |
| 1950-55 | 25.2 | 17.0 | .725 | .939 | 98.2 | 71.1 |
| 1955-60 | 24.5 | 17.8 | .586 | .949 | 98.6 | 68.5 |
| 1960-65 | 24.2 | 18.2 | .531 | .954 | 98.5 | 68.0 |
| 1965-70 | 24.6 | 18.6 | .526 | .969 | 97.9 | 71.3 |
| 1970-75 | 24.5 | 18.2 | .555 | .953 | 98.8 | 69.8 |
| 1975-80 | 25.3 | 19.0 | .558 | .935 | 98.9 | 77.8 |
| 1980-85 | 25.5 | 19.4 | .535 | .913 | 99.0 | 81.1 |
| Korea (South) | | | | | | |
| 1925-30 | 16.6 | 11.8 | .421 | .999 | 34.2 | 2.8 |
| 1930-35 | 17.1 | 13.0 | .360 | .992 | 39.0 | 5.1 |
| 1935-40 | 18.0 | 13.0 | .442 | .998 | 50.5 | 7.3 |
| 1940-55 | 19.6 | 14.2 | .472 | .995 | 70.6 | 16.1 |
| 1955-60 | 23.5 | 17.4 | .535 | .999 | 97.6 | 55.9 |
| 1960-66 | 22.8 | 17.0 | .508 | .997 | 96.2 | 50.8 |
| 1966-70 | 23.4 | 17.8 | .492 | .992 | 97.2 | 58.7 |
| 1970-75 | 23.7 | 18.2 | .482 | .989 | 97.4 | 62.7 |
| 1975-80 | 24.1 | 18.5 | .480 | .988 | 98.2 | 66.6 |
| 1980-85 | 24.5 | 19.0 | .486 | .964 | 99.1 | 72.8 |

Appendix Table 3. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| Taiwan | | | | | | |
| 1915-20 | 19.2 | 14.2 | .438 | .991 | 67.2 | 13.8 |
| 1920-30 | 19.3 | 13.8 | .480 | .991 | 67.4 | 13.7 |
| 1930-35 | 19.6 | 14.2 | .478 | .979 | 71.7 | 18.1 |
| 1935-40 | 19.6 | 13.8 | .507 | .998 | 70.5 | 15.3 |
| 1940-56 | 20.6 | 15.0 | .493 | .985 | 81.8 | 25.3 |
| 1956-66 | 21.9 | 15.8 | .537 | .991 | 90.6 | 37.9 |
| 1966-70 | 22.2 | 16.2 | .524 | .963 | 92.9 | 52.8 |
| 1970-75 | 23.7 | 16.2 | .657 | .988 | 94.6 | 57.8 |
| 1975-80 | 23.2 | 16.2 | .618 | .942 | 94.6 | 58.6 |
| 1980-85 | 23.7 | 17.4 | .551 | .851 | 96.9 | 68.0 |

- a. 1891 percentages single include Burma (now Myanmar).
- b. 1901-71 percentages single are adjusted; see Bhat and Kanbargi (1984: app. B).
- c. 1981 percentages single based on 5 percent sample data.
- d. 1921-41 percentages single as given in Sadiq (1965).
- e. 1976 and 1985 percentages single taken from Population Statistics Division, (1987:table 2.3).
- f. 1903 and 1939 percentages single calculated from data for 10-year age groups; see P. Smith (1975).
- g. 1947 and 1960 percentages single taken from Chamrathirong (1976).
- h. Percentages single for the People's Republic of China based on the 1/1,000 Fertility Survey of 1982 (Smith and Wei 1986) and the 1/100 sample survey (unpublished tabulation).
- i. 1931-66 percentages single based on data from ESCAP (1974:83).

Appendix Table 4. Trends in two-census (intercensal) indicators of nuptiality for the countries of Asia: males

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|-------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTH ASIA | | | | | | |
| Bangladesh | | | | | | |
| 1951-61 | 22.9 | 13.4 | .844 | .993 | 86.8 | 49.9 |
| 1961-74 | 23.9 | 14.6 | .826 | .988 | 91.4 | 58.1 |
| 1974-81 | 23.9 | 15.4 | .746 | .984 | 93.6 | 60.5 |
| India | | | | | | |
| 1891-01 ^a | 19.8 | 5.8 | 1.228 | .929 | 64.5 | 37.2 |
| 1901-11 ^b | 20.8 | 6.6 | 1.247 | .963 | 66.4 | 39.2 |
| 1911-21 ^b | 20.9 | 7.0 | 1.221 | .953 | 68.6 | 40.5 |
| 1921-31 ^b | 19.4 | 6.6 | 1.124 | .979 | 56.2 | 31.5 |
| 1931-41 ^b | 20.3 | 6.2 | 1.244 | .957 | 64.2 | 39.9 |
| 1941-51 ^b | 20.7 | 7.8 | 1.134 | .949 | 69.6 | 39.5 |
| 1951-61 ^b | 21.9 | 9.4 | 1.104 | .969 | 75.3 | 46.0 |
| 1961-71 ^b | 22.6 | 11.4 | .989 | .970 | 81.6 | 51.1 |
| 1971-81 ^{bc} | 23.5 | 13.0 | .924 | .977 | 87.0 | 56.9 |
| Nepal | | | | | | |
| 1961-71 | 20.8 | 9.8 | .971 | .972 | 72.2 | 34.4 |
| 1971-81 | 18.9 | 7.4 | 1.018 | .858 | 70.4 | 37.2 |
| Pakistan | | | | | | |
| 1921-31 ^d | 19.9 | 8.2 | 1.026 | .979 | 59.5 | 33.1 |
| 1931-41 ^d | 22.3 | 9.0 | 1.169 | .963 | 74.2 | 49.2 |
| 1941-51 ^d | 20.2 | 9.4 | .949 | .901 | 69.3 | 39.0 |
| 1951-61 | 23.9 | 9.4 | 1.277 | .923 | 80.8 | 56.3 |
| 1961-73 | 26.3 | 13.4 | 1.134 | .969 | 93.2 | 68.4 |
| 1973-81 | 24.9 | 14.6 | .912 | .979 | 93.0 | 64.4 |
| Sri Lanka | | | | | | |
| 1901-11 | 25.9 | 12.6 | 1.166 | .793 | 96.6 | 63.2 |
| 1911-21 | 27.8 | 14.2 | 1.197 | .877 | 98.3 | 76.1 |
| 1921-46 | 27.4 | 16.6 | .947 | .928 | 98.7 | 80.9 |
| 1946-53 | 27.3 | 17.4 | .875 | .928 | 98.7 | 83.0 |
| 1953-63 | 27.7 | 17.4 | .903 | .902 | 98.9 | 84.5 |
| 1963-71 | 28.6 | 17.8 | .949 | .963 | 99.3 | 86.5 |
| 1971-81 | 27.5 | 17.8 | .851 | .880 | 99.1 | 84.2 |

Appendix Table 4. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|-------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| SOUTHEAST ASIA | | | | | | |
| Brunei | | | | | | |
| 1971-81 | 26.6 | 17.0 | .841 | .949 | 98.1 | 78.3 |
| Indonesia | | | | | | |
| 1964-71 | u | u | u | u | u | u |
| 1971-76 ^e | 23.6 | 16.6 | .612 | .989 | 96.4 | 56.1 |
| 1976-80 ^e | 22.9 | 16.2 | .593 | .958 | 95.9 | 60.0 |
| 1980-85 ^e | 24.9 | 17.4 | .658 | .947 | 98.5 | 70.4 |
| Malaysia | | | | | | |
| 1947-57 | 24.7 | 15.4 | .821 | .977 | 95.2 | 63.0 |
| 1957-60 | 24.8 | 13.8 | .966 | .970 | 92.1 | 58.9 |
| 1960-70 | 25.1 | 15.0 | .887 | .955 | 93.1 | 69.9 |
| 1970-80 | 26.7 | 18.2 | .744 | .941 | 99.9 | 81.6 |
| Myanmar (Burma) | | | | | | |
| 1953-83 | 24.2 | 13.8 | .911 | .954 | 91.4 | 55.9 |
| Philippines | | | | | | |
| 1903-39 ^f | 24.8 | 14.6 | .897 | .962 | 94.5 | 60.4 |
| 1939-48 ^f | 24.9 | 15.4 | .837 | .969 | 95.7 | 63.3 |
| 1948-60 | 25.0 | 15.8 | .813 | .973 | 96.9 | 65.2 |
| 1960-70 | 25.3 | 16.2 | .797 | .951 | 97.5 | 68.6 |
| 1970-75 | 24.8 | 16.2 | .759 | .907 | 96.7 | 68.5 |
| 1975-80 | 24.7 | 15.8 | .787 | .979 | 96.5 | 63.1 |
| Singapore | | | | | | |
| 1957-66 | 28.9 | 17.4 | 1.017 | .949 | 99.4 | 87.3 |
| 1966-70 | 24.3 | 18.2 | .533 | .884 | 99.5 | 88.2 |
| 1970-80 | 28.3 | 19.4 | .781 | .928 | 99.6 | 91.1 |
| Thailand | | | | | | |
| 1947-60 ^g | 24.6 | 15.0 | .843 | .909 | 93.4 | 63.4 |
| 1960-70 ^g | 24.4 | 15.0 | .826 | .979 | 93.4 | 61.7 |
| 1970-80 | 24.5 | 15.0 | .839 | .967 | 92.9 | 63.0 |

Appendix Table 4. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|-------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| EAST ASIA | | | | | | |
| China (People's Republic) | | | | | | |
| 1955-60 | u | u | u | u | u | u |
| 1960-65 | u | u | u | u | u | u |
| 1965-70 | u | u | u | u | u | u |
| 1970-75 | u | u | u | u | u | u |
| 1975-80 | u | u | u | u | u | u |
| 1980-82 | u | u | u | u | u | u |
| Hong Kong | | | | | | |
| 1931-61 ^h | 27.3 | 14.2 | 1.152 | .923 | 95.4 | 75.9 |
| 1961-66 ^h | 29.9 | 19.4 | .923 | .966 | 99.4 | 93.0 |
| 1966-71 | 27.9 | 19.4 | .754 | .748 | 99.5 | 92.2 |
| 1971-76 | 28.7 | 18.6 | .889 | .944 | 99.4 | 89.2 |
| 1976-81 | 28.6 | 18.2 | .917 | .925 | 98.7 | 88.8 |
| 1981-86 | 30.1 | 19.0 | .973 | .939 | 99.4 | 92.9 |
| Japan | | | | | | |
| 1920-25 | 25.3 | 17.8 | .657 | .989 | 98.2 | 73.3 |
| 1925-30 | 26.0 | 18.6 | .653 | .969 | 98.9 | 80.3 |
| 1930-35 | 26.7 | 19.0 | .673 | .974 | 99.5 | 84.6 |
| 1935-40 | 27.5 | 20.2 | .638 | .986 | 99.6 | 91.1 |
| 1940-50 | 26.3 | 19.8 | .571 | .985 | 99.5 | 84.8 |
| 1950-55 | 27.5 | 20.2 | .638 | .983 | 99.8 | 90.5 |
| 1955-60 | 27.5 | 20.6 | .604 | .976 | 99.8 | 91.6 |
| 1960-65 | 27.2 | 20.2 | .617 | .974 | 99.6 | 90.2 |
| 1965-70 | 27.3 | 20.2 | .627 | .934 | 99.3 | 89.8 |
| 1970-75 | 27.4 | 19.4 | .701 | .954 | 99.6 | 88.3 |
| 1975-80 | 28.4 | 19.4 | .790 | .894 | 99.5 | 91.4 |
| 1980-85 | 28.0 | 19.8 | .725 | .820 | 99.6 | 91.9 |
| Korea (South) | | | | | | |
| 1925-30 | u | u | u | u | u | u |
| 1930-35 | u | u | u | u | u | u |
| 1935-40 | u | u | u | u | u | u |
| 1940-55 | 23.9 | 14.2 | .860 | .993 | 90.7 | 57.3 |
| 1955-60 | 27.6 | 20.6 | .613 | .998 | 99.1 | 90.8 |
| 1960-66 | 26.8 | 20.6 | .542 | .997 | 99.4 | 89.9 |
| 1966-70 | 27.4 | 21.0 | .564 | .994 | 99.7 | 93.3 |

Appendix Table 4. (continued)

| Subregion, country, and year | Indexes of the first marriage process | | | | Percentages single | |
|------------------------------------|--|-------|------|------|-----------------------|---------------|
| | SMAM | a_0 | k | C | Ages 15-19 | Ages 20-24 |
| 1970-75 | 27.4 | 21.0 | .561 | .994 | 99.7 | 92.9 |
| 1975-80 | 27.3 | 21.4 | .516 | .993 | 99.8 | 93.2 |
| 1980-85 | 27.8 | 21.4 | .561 | .980 | 99.8 | 94.4 |
| Taiwan | | | | | | |
| 1915-20 | 24.0 | 15.0 | .794 | .971 | 93.7 | 56.7 |
| 1920-30 | 23.3 | 15.0 | .731 | .979 | 92.9 | 50.2 |
| 1930-35 | 23.3 | 15.4 | .699 | .966 | 94.3 | 51.1 |
| 1935-40 | 22.9 | 15.4 | .668 | .984 | 93.0 | 45.8 |
| 1940-56 | 23.3 | 16.6 | .593 | .888 | 96.2 | 58.3 |
| 1956-66 | 23.9 | 20.2 | .331 | .761 | 98.6 | 79.4 |
| 1966-70 | 26.9 | 19.8 | .633 | .979 | 99.2 | 88.4 |
| 1970-75 | 26.8 | 19.8 | .619 | .983 | 99.4 | 88.5 |
| 1975-80 | 26.1 | 20.2 | .523 | .911 | 99.1 | 87.2 |
| 1980-85 | 27.2 | 20.2 | .615 | .892 | 99.4 | 90.3 |

u—unavailable; cannot be calculated.

- a. 1891 percentages single include Burma (now Myanmar).
- b. 1901-71 percentages single are adjusted; see Bhat and Kanbargi (1984:app. B).
- c. 1981 percentages single based on 5 percent sample data.
- d. 1921-41 percentages single as given in Sadiq (1965).
- e. 1976 and 1985 percentages single taken from Population Statistics Division (1987:table 2.3).
- f. 1903 and 1939 percentages single calculated from data for 10-year age groups; see P. Smith (1975).
- g. 1947 and 1960 percentages single taken from Chamrathirong (1976).
- h. 1931-66 percentages single based on data from ESCAP (1974:83).

REFERENCES

- Agarwala, S. N.
1962 *Age at Marriage in India*. Allahabad: Kitab Mahal.
- Bhat, M., and R. Kanbargi
1984 Estimating the incidence of widower re-marriage in India from census data. *Population Studies* 38(1):89-103.
- Casterline, J., L. Williams, and P. McDonald
1986 The age difference between spouses: Variations among developing countries. *Population Studies* 40(3):353-374.
- Chamratrithirong, Aphichat
1976 Fertility, nuptiality and migration in Thailand, 1970 census: The multiphasic response theory. Ph.D. dissertation, Brown University.
- Chamratrithirong, Aphichat and Chintana Pejaranonda
1985 *Nuptiality: 1980 Population and Housing Census*. Bangkok: National Statistical Office.
- Coale, Ansley J.
1971 Age patterns of marriage. *Population Studies* 25(2):215-234.
1984 *Rapid Population Change in China, 1952-1982*. Committee on Population and Demography, Report No. 27. Washington, D.C.: National Academy Press.
- Cochrane, Susan L.
1979 *Fertility and Education: What Do We Really Know?* Baltimore: Johns Hopkins University Press.
- Dixon, Ruth R.
1978 Late marriage and non-marriage as demographic responses: Are they similar? *Population Studies* 32(3):449-466.
- Economic and Social Commission for Asia and the Pacific (ESCAP)
1974 *The Population of Hong Kong*. Country Monograph Series, No. 1. Bangkok.
- Hajnal, John
1953 Age at marriage and proportions marrying. *Population Studies* 7(2):111-136.
- McDonald, Peter
1981 Social change and age at marriage. In *International Population Conference, Manila 1981*. Liège: International Union for the Scientific Study of Population.

- 1985 Social organization and nuptiality in developing societies. In John Cleland and John Hobcraft (eds.), *Reproductive Change in Developing Countries: Insights from the World Fertility Survey*. Oxford: Oxford University Press.
- Population Statistics Division
- 1987 Population of Indonesia Series Supas No. 5. Results of the 1985 Intercensal Population Survey.
- Preston, Samuel H.
- 1987 Estimation of certain measures in family demography based upon generalized stable population relations. In John Bongaarts et al. (eds.), *Family Demography: Methods and Their Applications*. Oxford: Clarendon Press.
- Preston, Samuel H., and Michael A. Strong
- 1986 Effects of mortality declines on marriage patterns in developing countries. In United Nations, Department of International Economic and Social Affairs, *Consequences of Mortality Trends and Differentials*. Population Studies No. 95. New York.
- Quah, S. R.
- 1989 The social significance of marriage and parenthood in Singapore. Paper presented at the XXIV International Committee on Family Research Seminar, Singapore, 2-4 May.
- Sadiq, Nasim M.
- 1965 Estimation of nuptiality and its analysis from the census data of Pakistan. *Pakistan Development Review* 5.
- Smith, David P.
- 1980 *Age at First Marriage*. Comparative Studies, No. 7. London: World Fertility Survey.
- Smith, Peter C.
- 1975 Changing patterns of nuptiality. In Wilhelm Flieger and Peter C. Smith (eds.), *A Demographic Path to Modernity: Patterns of Early Transition in the Philippines*. Quezon City: University of Philippines Press.
- 1978 Indexes of nuptiality: Asia and the Pacific. *Asian and Pacific Census Forum* 5(2):1-2, 9-13.
- 1980 Asian marriage patterns in transition. *Journal of Family History* 5(1):58-96.
- 1983 The impact of age at marriage and proportions marrying on fertility. In Rodolfo A. Bulatao and Ronald D. Lee (eds.), *Determinants of Fertility in Developing Countries*. Vol. 2: *Fertility Regulation and Institutional Influences*. New York: Academic Press.

Smith, Peter C., Adelamar Alcantara, and Eliseo De Guzman

- 1984 An assessment of Philippine cohort nuptiality trends. In Luisa T. Engracia, Corazon Mejia-Raymundo, and John B. Casterline (eds.), *Fertility in the Philippines: Further Analysis of the Republic of the Philippines Fertility Survey 1978*. Voorburg: International Statistical Institute.

Smith, Peter C., and Jing Sheng Wei

- 1986 *The Evolution of a Late Marriage Regime in China*. Working Papers of the East-West Population Institute, No. 42. Honolulu: East-West Center.

Trussell, James

- 1981 *Illustrative Analysis: Age at First Birth in Sri Lanka and Thailand*. WFS Scientific Reports, No. 13. London: World Fertility Survey.

Trussell, James, and German Rodriguez

- 1980 *Maximum Likelihood Estimation of the Parameters of Coale's Model Nuptiality Schedule from Survey Data*. WFS Technical Bulletins, No. 7. London: World Fertility Survey.

United Nations

- 1990 *Patterns of First Marriage: Timing and Prevalence*. Department of International Economic and Social Affairs. ST/ESA/SER.R/111. New York: United Nations.

Watkins, Susan Cotts

- 1984 Spinsters. *Journal of Family History* 9(4):310-325.

Xenos, Peter

- 1990 *The Social Demography of Asian Youth Populations: An Analysis of Projections to 2010*. Background Paper No. 3, Analysis of Population Trends and Projections in Asia 1980-2010. A report to USAID on Cooperative Agreement No. DPE-3046-A-00-8050-00.
- 1991 A new look at Asia's nuptiality transition. In Nihon University, *Family and the Contemporary Japanese Culture: An International Perspective*. Nihon University International Symposium. Tokyo: University Research Center.

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