

Timing of Family Formation in Ethnic Mosaic Nepal: A District-Level Analysis (Demographers' Notebook)

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Marriage marks the beginning of socially sanctioned exposure to pregnancy and sets the course of subsequent childbearing. Thus, the age of a woman at marriage is one of the most important proximate determinants of the aggregate level of fertility (Bongaarts and Potter, 1983). Age at marriage is also an important indicator of women's status (Safilios-Rothschild, 1986). An increase in the age at marriage also means minimizing first births to teenage mothers, which is known to carry a higher risk for the mother and child (Hobcraft, 1987). Because of its role in determining the fertility level, improving women's and children's health, and enhancing women's status, increasing age at marriage has been an important domain of public policy-making (Henry and Piotrow, 1979). Most countries, for example, have imposed legal sanctions on age at first marriage. The identification of factors affecting the age at marriage is therefore of paramount interest for multiple reasons.

Age at marriage, or the timing of family formation, is generally known to be positively associated with socio-economic development. Besides development, ethnicity has also been found to be an important factor affecting the timing of family formation and entry into motherhood. Ethnic group identification represents a sub-system within a society and reflects variations in institutional arrangements concerning the "starting" pattern of reproduction. Even in a highly industrialized and urbanized society such as the United States, ethnic differentials continue to remain important in all the processes of family formation, including the timing of marriage (Kobrin and Goldscheider, 1978).

Similarly, studies on several Asian countries with diverse socio-economic conditions have found that the ethnicity factor significantly affects the timing of marriage and the time of first birth, independent of socio-economic factors (Hirschman, 1985; Hirschman and Rindfuss, 1980 and 1982; Rindfuss and Hirschman, 1984; Rindfuss, Parnell and Hirschman, 1983). Congruent with these findings, the ethnic factor has been found to be a major determinant of the timing of family formation in Nepal as well (Thapa, 1989).

Previous research on Nepal focused on individual-level data from the mid-1970s. The purpose of this paper is to extend the previous research in order to analyse the district-level variations in the timing of family formation in Nepal. The main hypothesis examined is that the district-level variations in the timing of family formation are determined principally by ethnicity, independent of socio-economic factors. It is surmised, therefore, that the district-level variations are not randomly distributed among sub-populations but are differentiated by ethnic characteristics in the districts.

Data and methodology

The measure of the timing of family formation used in this analysis is female singulate mean age at marriage (SMAM). SMAM refers to the mean number of years spent in the single (never married) state by those in the hypothetical cohort who marry by age 50 (Hajnal, 1953). The SMAM values are computed by applying Hajnal's technique to the 1991 census data for each of Nepal's 75 districts (CBS, 1995:167-203). In computing the SMAM values for Nepal, it is assumed that no female marries before age 10.

Ethnic group membership, the main explanatory variable, is defined by self-identification. Although surveys have collected information on ethnicity, the 1991 census was the first census to collect data on ethnicity for the country.

Nepal's population is truly an ethnic mosaic. According to the 1991 census there are at least 60 ethnic groups (CBS, 1993); the 60 groups include those based on the Hindu caste system and religion. Each may be considered an ethnic group in that it represents a sub-system of institutional arrangements, values and norms. While many of the groups tend to be concentrated in certain ecological regions, several of the groups are scattered throughout the country. Some ethnographic information on many of these groups has been reported by Bista (1972) and Gautam and Thapa-Magar (1994).

The "control variable" in this analysis is the level of development in each district. Development is measured by the "Human Development Index" (HDI). HDI is a measure proposed by UNDP (1990) which comprises three components: expectation of life at birth ("longevity"), literacy ("knowledge") and a modified measure of per capita income ("resource access"). The index values for each dimension are expressed in terms of the relative distances between the lowest and highest observed values on each indicator, ranging from 0 to 1.

The values for each of the three components and the composite index (HDI) for the 75 districts are given in Thapa

(1995). HDI is highly correlated with many other indicators of socio-economic development, such as communication, roads, urbanization, health services utilization and population growth (Thapa, 1995). This implies, therefore, that the HDI is also a proxy for many other dimensions of development.

The main techniques of data analysis used are simple correlation coefficients and the multiple regression. The unit of analysis is district, not individuals. In this sense, it is "ecological" research. One limitation of ecological research is that inferences about individuals cannot be made without committing what is known as an "ecological fallacy". However, the previous research (Thapa, 1989) focused on individual-level variations. The present research complements the previous research and seeks to examine whether the results based on individuals also hold at the aggregate, district level.

Results

Table 1 presents data on SMAM for females in Nepal's 75 districts. The national average SMAM is 18, ranging from a low of 15.1 years (in the districts of Bara, Kapilvastu and Parsa) to a high of 23 years (Mustang District) or a difference of nearly eight years among the 75 districts. Fourteen districts have SMAM of 20 and higher years. Another 17 districts have SMAMs of less than 17. In the remaining 44 districts, the SMAM values range between 16.6 and 19.9.

Table 1: Female singulate mean age at marriage (SMAM), 75 districts, Nepal, 1991

District	SMAM	District	SMAM
Mustang	23.0	Makwanpur	18.2
Manang	22.9	Sindhupalchowk	18.1
Taplejung	21.7	Pyuthan	18.1
Teharathum	21.3	Dang	18.1
Panchthar	21.1	Dhading	18.0
Solukhumbu	21.0	Rukum	17.9
Bhojpur	20.9	Salyan	17.8
Dhankuta	20.9	Nuwakot	17.7
Ilam	20.8	Mugu	17.6
Sankhuwasawa	20.7	Arghakhachi	17.5
Kathmandu	20.5	Surkhet	17.5
Lalitpur	20.3	Achham	17.4
Khotang	20.2	Bajura	17.4
Jhapa	20.1	Bardiya	17.3
Dolpa	19.9	Nawalparasi	17.2
Okhaldhunga	19.8	Jajarkot	17.1
Lamjung	19.6	Dailekh	17.1
Myagdi	19.5	Kanchanpur	17.1
Bhaktapur	19.4	Kailali	17.1
Kaski	19.3	Doti	17.0
Gorkha	19.2	Bajhang	16.8
Morang	19.1	Banke	16.6
Udayapur	19.1	Jumla	16.5
Ramechhap	19.1	Dadheldhura	16.5
Parbat	19.0	Darchula	16.5
Dolkha	19.0	Kalikot	16.5
Syanja	18.9	Baitadi	16.3
Humla	18.9	Rupandehi	16.3
Sindhuli	18.8	Sarlahi	16.2
Tanahu	18.8	Saptari	15.9
Sunsari	18.7	Mahotari	15.7
Rolpa	18.7	Dhanusha	15.7

Palpa	18.6	Siraha	15.3
Baglung	18.6	Rautahat	15.2
Chitwan	18.6	Bara	15.1
Kavre	18.5	Kapilbastu	15.1
Gulmi	18.5	Parsa	15.1
Rasuwa	18.3		
		All Nepal	18.1

Source: CBS (1995).

Note: The districts are listed according to the SMAM values in descending order.

There has been a gradual but slow increase in SMAM over the years in Nepal (CBS, 1995:181). In 1961, the national average SMAM for females was 15.4. It increased to 16.8 and 17.2 in 1971 and 1981, respectively, and 18.1 in 1991. Thus, there has been an increase of only three years over the 30-year period. Similarly, there has been a slow change in the age differentials between males and females. In 1961, the male SMAM was 4.1 years higher than the female SMAM; in 1991, the difference was 3.3 years.

The ethnic composition of the country's total population is shown in table 2. The groups are listed in descending order according to the percentage share of the total population. The census identified 60 ethnic groups. Besides these 60 groups, additional unspecified groups are listed under "other" in each of the three ecological regions (Mountain, Hill and Terai, which refers to the plain belt in the southern part of the country), accounting for 4.4 per cent of the total. The foreigners (without ethnic identification) and "not stated" categories constitute 0.05 per cent of the total.

Table 2: Ethnic composition of the population of Nepal, 1991

Ethnic group	Per cent	Number	Ethnic group	Per cent	Number
Chetri	16.05	2,968,082	Dhobi	0.41	76,594
Hill Bahun	12.92	2,388,455	Kumhar	0.39	72,008
Magar	7.24	1,339,308	Kanu	0.38	70,634
Tharu	6.46	1,194,224	Khatway	0.36	66,612
Newar	5.63	1,041,090	Rajput	0.30	55,712
Tamang	5.51	1,018,252	Majhi	0.30	55,050
Kami	5.21	963,655	Kayastha	0.29	53,545
Yadav	4.14	765,137	Danuwar	0.27	50,754
Muslim	3.53	653,055	Haluwai	0.24	44,417
Other Terai	3.39	627,514	Sunuwar	0.22	40,943
Rai	2.84	525,551	Chepang	0.20	36,656
Gurung	2.43	449,189	Rajbhar	0.18	33,433
Dami	1.99	367,989	Marwari	0.16	29,173
Thakuri	1.62	299,473	Gangain	0.12	22,526
Limbu	1.61	297,186	Thami	0.10	19,103
Sarki	1.49	276,224	Dhimal	0.09	16,781
Teli	1.36	250,732	Thakali	0.07	13,731
Kushwha	1.11	205,797	Bhote	0.07	12,463
Chamar	1.10	203,919	Darai	0.06	10,759
Other Hill	1.00	184,216	Shikh	0.05	9,292
Sanyasi	0.98	181,726	Bengali	0.04	7,909
Kurmi	0.90	166,718	Wadi	0.04	7,082
Terai Bahun	0.88	162,886	Bote	0.04	6,718
Sudhi/Kalwar	0.88	162,046	Jirel	0.03	4,889
Musahar	0.77	141,980	Lepcha	0.03	4,826

Dhanku	0.74	136,944	Gaine	0.02	4,484
Mallha	0.60	110,413	Raji	0.02	3,274
Sherpa	0.60	110,358	Raute	0.02	2,878
Bania	0.55	101,868	Churoute	0.01	1,778
Kewat	0.55	101,482	Other Mountain	0.01	1,741
Dhusadh	0.50	93,242	Foreign	0.02	2,951
Rajbansi	0.44	82,177	Not stated	0.03	4,858
Kumal	0.41	76,635			
			Total	100	18,491,097

Source: CBS (1993).

Note: The ethnic groups are listed according to the percentage share in the total population.

The 60 identified ethnic groups also include those based on language, religion and the Hindu caste hierarchy system. Of all the groups, Bengali is the only linguistic group, representing 0.04 per cent of the population. The non-Hindu religious groups include Muslim, Churaute (Hill Muslim), Marwari and Sikh. These four ethnic sub-groups represent 3.8 per cent of the total population.

The groups based on the four-fold Hindu caste system include (a) Bahun (13.8 per cent), (b) Chetri and Thakuri (17.7 per cent), (c) Newar (5.6 per cent) and (d) Kami, Damai, Sarki and Gaine, known as "lower caste" (8.7 per cent). They represent 45.8 per cent of the country's total population.

The various other groups represent a total of 46.0 per cent of the population (excluding "other" and unspecified categories). Some of these ethnic groups may be Hindus and Buddhists by religion, while others follow tribal-based religion. (Some of the Newars also belong to a non-Hindu, Buddhist group, but the census does not distinguish between them.)

The correlation coefficients between the ethnic groups and SMAM are presented in table 3. In the table, two types of correlations are presented. The first column shows simple correlation or Pearson r , which is a linear correlation between each ethnic group and SMAM. The second column, on the other hand, refers to the correlation after controlling for the possible effects of development (that is, the Human Development Index). Thus, while the first column shows the degree of "gross" association, the second column shows the degree of "net" association between each ethnic group and SMAM. The comparison between the two correlation values, therefore, indicates the effect of the development factor on SMAM. In the table, the groups are arranged in four blocks according to the direction and strength of the simple correlation values.

Table 3: Correlation coefficients between ethnic groups and female singulate age at marriage (SMAM), Nepal, 1991: district-level results

Ethnic group	Correlation coefficients		Ethnic group	Correlation coefficients	
	Simple	Partial ⁺		Simple	Partial ⁺
Gurung	0.501 **	0.468 **	Tharu	-0.274 *	-0.253
Rai	0.463 **	0.411 **	Marwari	-0.101	-0.315 **
Sherpa	0.445 **	0.446 **	-----		
Limbu	0.424 **	0.365 **	Sunuwar	0.210	0.184
Thakali	0.326 *	0.320 **	Lepcha	0.150	0.173
Other Mountain	0.293 *	0.249 **	Hill Bahun	0.143	0.003
Newar	0.276 *	0.059	Rajbansi	0.124	0.055
Bhote	0.261	0.259 *	Tamang	0.123	0.120
-----			Dhimal	0.117	0.036
Chamar	-0.614 **	-0.610 **	Magar	0.115	0.091
Kayastha	> -0.602 **	-0.598 **	Other Hill	0.112	0.137
Dhobi	-0.575 **	-0.586 **	Damai	0.108	0.244
Kumhar	-0.573 **	-0.563 **	Gangaini	0.077	0.005
Muslim	-0.559 **	-0.571 **	Majhi	0.077	0.047
Yadav	-0.557 **	-0.553 **	Thami	0.060	0.045

Teli	-0.556 **	-0.562 **	Bengali	0.044	-0.063
Mallha	-0.535 **	-0.540 **	Jirel	0.042	0.024
Bania	-0.523 **	-0.540 **	Churoute	0.038	-0.067
Sudhi	-0.518 **	-0.518 **	Darai	0.018	-0.048
Dhusadh	-0.508 **	-0.503 **	Chepang	0.007	-0.015
Kurmi	-0.505 **	-0.498 **	-----		
Terai Bahun	-0.489 **	-0.489 **	Thakuri	-0.235	-0.007
Rajput	-0.487 **	-0.502 **	Wadi	-0.204	-0.086
Kushwha	-0.487 **	-0.487 **	Kami	-0.174	0.046
Other Terai	-0.486 **	-0.519 **	Raji	-0.142	-0.072
Dhanku	-0.419 **	-0.425 **	Raute	-0.114	0.007
Kanu	-0.402 **	-0.398 **	Chetri	-0.097	0.120
Mushar	-0.384 **	-0.410 **	Shikh	-0.091	-0.166
Kewat	-0.348 **	-0.367 **	Sanyasi	-0.084	0.005
Rajbhar	-0.329 *	-0.356 **	Danuwar	-0.066	-0.066
Haluwai	-0.327 *	-0.358 **	Kumal	-0.034	-0.085
Khatway	-0.319 *	-0.327 **	Gaine	-0.023	-0.062
			Bote	-0.021	-0.089
			Sarki	-0.005	0.050

Notes: ** p<.001, * p<.01.

+ Refers to the coefficients after controlling for the effect of the level of development (Human Development Index).

The ethnic groups in each block are listed in descending order according to the simple correlation values.

Three main findings emerge from the results. First, of the several groups, only eight are significantly and positively associated with higher SMAM at the district level. These groups represent 13.3 per cent of the total population. Four groups (Gurung, Rai, Sherpa and Limbu) have a correlation ranging between 0.42 and 0.50. The remaining four groups have a relatively weak, but statistically significant, correlation.

Twenty-five groups, representing 30.2 per cent of the total population, are negatively correlated with SMAM. The first two groups (Chamar and Kayastha) have the highest degree of correlation. An additional 10 groups have correlations between -0.51 and -0.58. The Tharu group has the weakest correlation.

Second, some of the larger groups such as Chetri, Bahun, Tamang and Magar are not significantly correlated with SMAM. This means the district-level SMAM does not vary significantly, regardless of the districts these groups live in. The 30 groups with no statistically significant association with SMAM represent the largest percentage, 56.5 per cent, of the total population.

Third and most important, the level of development is not the principle reason for the variations in district-level SMAM. Even after controlling for the effects of the level of development, most of the correlation values remain largely intact, as indicated by the partial correlations. Development affects the degree of association in a significant way only for two groups, Newar and Marwari. In the vast majority of the cases, ethnicity has an independent strong association with the district-level variation in SMAM.

In further analysis, the data on ethnic groups were pooled that (a) are significantly (at p<.01) associated with SMAM and (b) have the same direction of relationship; then multiple regressions were carried out in order to assess the magnitude or strength of the relationship between SMAM and ethnicity. The main advantage of doing so is to reduce the number of regressions and, at the same time, obtain robust estimates. The results are presented in table 4.

Table 4: Regression results of the effects of ethnicity and development on female singulate age at marriage (SMAM), Nepal, 1991: district-level results

Independent variable	Beta coefficient	R ²	F
Development	.049		

Eight ethnic groups ⁺	.833 ^{**}		
		.733	98.71 ^{**}
Development	.419 ^{**}		
Twenty-five ethnic groups ⁺⁺	-.614 ^{**}		
		.550	44.08 ^{**}
Development	.124 [*]		
Eight ethnic groups ⁺	.666 ^{**}		
Twenty-five ethnic groups ⁺⁺	-.374 ^{**}		
		.850	134.17 ^{**}

Notes: Development refers to the Human Development Index.

+ As listed in the first block of table 3.

++ As listed in the second block of table 3.

** p<.001, * p<.01.

The eight ethnic groups and the development variable explain 73 per cent of the district-level variation in SMAM (as indicated by the results in the first panel of the table). The development variable is not statistically significant, however. This implies that regardless of the level of development, a district would have a higher SMAM if these groups are present.

The results in the second panel of the table indicate that, when the 25 ethnic groups are considered, the level of development also has an independent significant effect on the district-level variation in SMAM. However, the level of development has only a secondary effect; it accounts for about one-third of the total variance explained by the model (as indicated by a "step-wise" regression, not shown in the table). The total variance explained by the two variables, development and ethnicity, is 55 per cent.

Finally, the results in the bottom panel of the table include both types of ethnic sub-groups (positively as well as negatively related ethnic groups to the SMAM) and the development variable in a single multivariate equation model. The three variables explain fully 85 per cent of the total district-level variations in SMAM; only 15 per cent of the variance remains unexplained. The eight ethnic groups are the most important in explaining the higher SMAM values, and the 25 ethnic groups are inversely related to SMAM. The level of development also has an independent, but relatively weak, association with the district-level SMAM. The results confirm that ethnicity is the principle factor in determining the district-level variations in SMAM.

Discussion and conclusion

Nepal's population represents an ethnic mosaic. The 1991 census provided, for the first time, data on ethnic groups in the country. It identified at least 60 ethnic groups. The data afford the opportunity to analyse the role of the ethnic factor in socio-economic development as well as reproductive patterns at the aggregate, district level in Nepal. This research sought to examine the role of the ethnic factor in the "starting" pattern of reproduction.

Nepal has a relatively low singulate mean age at marriage (a national average of 18 years for females, according to the 1991 census). Furthermore, it is a common norm and practice for couples to have the first birth without delay or any form of volitional control. The parents and the society at large expect new couples to have their first child soon after cohabitation begins. Thus, there are strong cultural as well as gerontocratical pressures on the reproductive process of the newly-weds. Marriage therefore also marks the beginning of the entry into motherhood in Nepal.

The analysis found that the starting pattern of reproductive behaviour in Nepal's 75 districts is closely related to ethnic group membership. The level of socio-economic development also influences the timing of family formation, but this has only a secondary effect. These results confirm those based on the individual-level analysis of the data from the mid-1970s (Thapa, 1989). They are also similar to the findings from other countries (Kobrin and Goldscheider, 1978; Hirschman, 1984; Rindfuss, Parnell and Hirschman, 1983).

In the 75 districts, the presence of eight ethnic groups (namely, Gurung, Rai, Sherpa, Limbu, Thakali, Bhote, Newar and "other" groups living in the Mountain region) is associated with significantly higher age at marriage, although they represent only about 13 per cent of the total population in the country. Most of the groups, except Newar, are concentrated in the Mountain and upper Hill regions of the country. Culturally, these groups generally have much more relaxed views on marriage than the other more dominant groups, such as Chetri and Bahun (Bista, 1972; Gautam and Thapa-Magar, 1994; Thapa, 1989).

Remarriage, for example, is not necessarily a social taboo. Furthermore, courtship before marriage is also permitted and not looked down upon. Marriage by mutual consent, as opposed to an arranged marriage, is also common among these groups.

Perhaps more important is the fact that the women in these groups have higher social status than in the other groups. For example, households headed by females (largely on account of out-migration of the males) are also common. Women's involvement in business activities is a socially accepted norm. They have considerably less restriction on travel and interacting with people than the dominant groups. In fact, many of them work outside homes (not confined to farming) and generally have more control over household economic resources and decision-making.

The other 25 groups, representing 30 per cent of the population, that are significantly related to the lower age at marriage in the districts, are largely concentrated in the Terai ecological region. The cultural norms and practices are heavily influenced by the Hindu culture of northern India (Bista, 1972; Gautam and Thapa-Magar, 1994; Thapa, 1989). In contrast to the previous groups, the women belonging to the 25 groups are generally confined to farming; they have considerably less control over economic resources and household decision-making. Women are typically considered as an economic burden. Premarital courtship or marriage by consent are generally not accepted. Marriages are usually arranged by parents at an early age. The joint family institution is a common characteristic of many of these ethnic groups. The patriarch generally assumes the full authority.

The early and late age at marriage are thus closely tied to values, norms and institutional arrangements specific to certain ethnic groups. Nepal has an early pattern of timing of family formation mainly because the groups that have higher age at marriage represent a smaller share of the total population. The timing of family formation can be expected to increase significantly only when the cultural norms and institutions of the larger ethnic groups change.

Since changes in normative and institutional practices are often a slow process, it is not surprising that the mean age at marriage (female) has increased only slowly over the decades, from about 15 years in 1961 to 18 years in 1991. Clearly, bringing about significant increases in age at marriage is a colossal process. Owing to weak implementation and monitoring systems, the enforcement of the legal age at marriage (for females, 16 years of age with parental consent and 18 years without) remains difficult. Marriages below the legal age tend to occur frequently in Nepal.

A significant reduction in fertility, improvement in women's and children's health, and the enhancement of women's status by raising the age at marriage through legal means remain difficult tasks unless strong implementation and monitoring systems are developed in the Nepalese context. Multi-sectoral approaches such as increasing female literacy, eliminating legal discrimination against property rights, encouraging non-agricultural employment for women and raising social awareness may be some of the effective ways to bring about normative and structural, as well as institutional changes, at the societal level.

Unless such inputs are introduced on a massive scale, the results of this study clearly suggest that a mere linear improvement in the level of socio-economic development cannot be expected to significantly increase the timing of family formation in Nepal. Ethnic institutions and social networks remain key determinants of the initiation of reproductive behaviour. The timing of family formation may change considerably only when the legal, social and economic programmes are able to affect and mobilize the vast majority of the ethnic groups in the country.

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