

Social, Economic and Ethnic Fertility Differentials in Peninsular Malaysia

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1.1 The Demographic, Social and Economic Setting

The population of Malaysia comprises the three major ethnic groups of Asia- the Chinese, Indians and Malays. In Peninsular Malaysia (where 80 per cent of the population lives), about 61.1 per cent are Malays (Department of Statistics 2001a). The Malays, together with a small group of the other indigenous groups, are known as the Bumiputra, or son of the soil. The Chinese and Indians make up about 27.4 per cent and 9.4 per cent of the population of Peninsular Malaysia respectively. They are the descendants of migrants from China and India in the early part of the twentieth century. The remaining 0.7 per cent are "Others". Each ethnic community has maintained its own socio-cultural ways of life, and is segregated to some extent by place of residence, education and occupation.

The various ethnic groups are at different stages of demographic transition. Mortality rates have fallen to a low level for all segments of the population, with a crude death rate of less than 5 per thousand population. The infant mortality rate is lowest among the Chinese (5 per thousand live birth) and highest among the Malays (9 per thousand live births), with the Indians in-between. Female life expectancy ranges from about 73 years for the Malays to 78 years for the Chinese (Department of Statistics 2001b). Substantial fertility differentials still exist among the various sub-groups of the population.

With increased rural-urban migration, about two-thirds of the population now lives in urban areas, compared with just 25% in the 1960s. In the past, most Malays were in the rural areas and engaged in agricultural activities, while the non-Malays were mainly in the urban areas. However, the Malays have been urbanising rapidly in line with the objectives of the economic policies implemented since 1970. The urbanisation rate of the Malays increased to about 54 per cent in 2000, up from about 15 per cent in 1970. During the same period, the rate of urbanisation of the Chinese and Indians has increased from 47 to 87 per cent and 35 to 80 per cent respectively.

With a per capita income of about RM13000 (\$US=RM3.8) Malaysia is classified by the World Bank as an upper-middle income country. The expansion of the economy and the implementation of specific programmes have reduced the incidence of poverty to 7.5 per cent in 1999. Nevertheless, wide variations in the economic conditions still exist. The incidence of poverty of 12.4 per cent in the rural areas is significantly higher than the level of 3.4 per cent in the urban areas. The average household income in the rural areas is estimated at RM1718 compared to RM3103 in the urban areas. Household income also varies widely across ethnic groups, ranging from RM1984 among the Bumiputra, RM2704 among the Indians and RM3456 among the Chinese (Malaysia 2001).

Malaysia has achieved remarkable progress in social development, with improvement in educational level, health status and the standard of living. Primary education has become universal. In 1998, enrolment in primary school and secondary school is 95% and 58% respectively (Department of Statistics 1999). The educational profile of the labour force shows that the proportion with tertiary education is 13% compared to only 3% in 1980. There are narrower gender differentials in educational attainment and the female labour force participation rate has remained at around 47 per cent (Department of Statistics, 2001c).

In 1970 slightly more than half of the labour force were employed in agriculture, but this has declined to 15 per cent in 2000. On the other hand, the proportionate share of employment in the manufacturing sector has increased from 8 per cent to 28 per cent during the same period. Significant gains have also been made in the construction, services and financial sectors. The occupational structure varies substantially by ethnic group—about 21.5 per cent of the Malay labour force in 2000 was engaged in agriculture, compared with 15.1 per cent among the Indians and 6.5 per cent among the Chinese (Department of Statistics 1983; and Malaysia, 2001).

1.2 Objectives and Scope of this paper

This paper examines the fertility differentials across the various sub-groups of the Malaysian population, and factors affecting such differentials. It is aimed at providing further insights on the country's demographic scenario. Results from this analysis may be used to evaluate the effectiveness of the national population and development programmes.

Owing to the unavailability of household survey data from Sabah and Sarawak, this paper will be limited to the analysis of fertility patterns in Peninsular Malaysia. The analysis of total fertility rate will cover the period up to 1998, as more recent data has not been released. Detailed analysis of socio-economic and ethnic fertility differentials will be based on the 1994 Malaysian Population and Family Survey (MPFS), the latest available demographic survey data.

1.3 Past studies

Since 1966 the National Population and Family Development (NPFDB) has conducted a series of KAP surveys to provide the necessary information for evaluating the effectiveness of the national programme. These include the 1966/67 West Malaysia Family Survey, the 1974 Malaysian Fertility and Family Survey, the 1984 Malaysian Population and Family Survey, the 1990 Population and Family Survey in Sabah and Sarawak, and the 1994 Malaysian Population and Family Survey. In addition, the Rand Corporation had conducted the

Malaysian Family Survey I in 1976/77 and the Malaysian Family Survey II in 1988/89 (the latter in collaboration with the NPFDB).

Data from vital registration system, the population censuses and the household demographic surveys provide a wealth of information for the studies of fertility in Malaysia. Besides the reports for these surveys, the fertility studies using these data sets may be mentioned the following: Da Vanzo and Haaga, 1981; Noor Laily, Tan, Tey and Rohani, 1985; Tan, 1981; Tan, 1983; Lim, Jones and Hirschman, 1985; Saw, 1988; Tey, Tan, Tan and Kwok, 1988; Arshat, Tan, Tey and Subbiah, 1988; Jones, 1990; Govindasamy and Da Vanzo, 1992; Leete and Tan, 1993; Leete, 1996; Chan, 2001 and Jayasutha, 2001.

All the previous studies cited above have discovered and reconfirmed the sharp differentials that exist across ethnic groups, place of residence, educational and income levels, women's work and other socio-economic variables. Some of these studies have also analysed the influence of government's policies on fertility behaviour (see, for example, Govindasamy and Danzo, 1992). These studies have also assessed the relative importance of the changing marital structure and contraceptive use in affecting the fertility level of the different social groups in the country.

2. Data sources and methodology

2.1 Data sources

The data for this paper come from the vital registration system and the 1994 Malaysian Population and Family Survey (MPFS). Using civil registration data, childbearing patterns of a cross-section of women born and married in different periods are combined to generate the total fertility rate for the various sub-groups of the population.

However, the published data from civil registration are generally limited to the tabulation of total fertility rate by ethnicity and state. A more detailed analysis on socio-economic and ethnic fertility differentials can only be done with data from household surveys such as the 1994 MPFS that provide more detailed information to obtain the childbearing patterns among subgroups of the population.

The 1994 Malaysian Population and Family Survey is the latest series of national household surveys conducted by the National Population and Family Development Board. The survey was conducted between November 1994 and March 1995 to gather detailed information on nuptiality, childbearing, family planning and other aspects of family life. The survey covered a representative sample of 4444 ever-married women aged 15-49 years in Peninsular Malaysia. A stratified two-stage sampling design was used in sample selection. In the first stage, the enumeration blocks were selected from 4 main strata: metropolitan

towns (with at least 75,000 population), large urban centres (with population size of 10,000-74,999), small urban centres (with population size of 1,000 to 9999) and rural areas (the rest of the country). In the second stage, living quarters were selected from the chosen enumeration blocks such that the sampling fraction is uniform. A group of trained interviewers from the NPFDB conducted personal interviews with the selected respondents.

2.2 Methodology

Using data from vital registration, the trends and patterns of fertility differentials will be analysed in terms of total fertility rate (TFR) and age specific fertility rates. The differentials in total fertility rates at the state level will be linked with selected socio-economic indicators.

In analysing the 1994 MPFS data, the number of children ever born (CEB) to women aged 15-49 years will be used as the main dependent variable. However, as a measure of fertility, the number of CEB suffers from problems of truncation and censoring as it includes the number of children born up to specific points in women's childbearing life span.

Women from different socio-economic and ethnic groups are most likely to differ in their age structure, which is directly linked with the number of CEB. Given the improvement in educational level, the educational level of younger women is higher than that of the older women. A large part of the observed differences in the number of CEB between those with primary or no schooling and those with higher education is to some extent due to their age structural differences. Hence, it will be more meaningful to analyse fertility differentials based on age-standardised CEB. Previous studies have found that age at marriage varies widely across the various groups. Standardisation technique will be used to adjust for the effects of age at first marriage in analysing fertility differentials among married women. Sheffe's multiple comparisons will also be used to assess commonality and differences in the number of children ever born between the various sub-groups.

As many social, economic and cultural (with ethnicity as proxy) variables are closely interrelated and are affecting fertility behaviour in a complex manner. Multiple Classification Analysis, base on an additive model, is used to assess the relative importance of these variables and to ascertain the net effects of each variable as well as the combined effects on fertility.

3. Differentials in total fertility rates

The initiation of demographic transition in Malaysia began way back in the 1940s. The crude death rate has been declining steadily from 29 per thousand population in 1941 to around 5 per thousand population in 2000 (Department of Statistics, 1991 and 2000). The initiation of fertility transition can be traced back 1957. The total fertility rate in Peninsular Malaysia has declined from 6.7 per woman in 1957 to 5.4 in 1967, 4.2 in 1977, 3.5 in 1987 and 3.3 in 1997.

3.1 Differentials in total fertility rate by ethnicity

The different ethnic groups have undergone different pace of fertility transition. Regression analyses show that between 1957 and 1997, the total fertility rate for the Malays had been declining at about 1.1 per cent per annum, as compared to about 3 per cent each for the Chinese and Indians. Ethnic fertility differentials widened somewhat between 1977 and 1987 with an increase in Malay fertility, but had become less pronounced in the 1990s as Malay fertility resumed its downward trend, while that of the Chinese and Indians showed a slight increase up until 1997 (Tey, 2002). In 1998, the Malay TFR of 3.8 was still significantly higher than that of the Chinese at 2.2 and Indian at 2.6 (see Table 1).

In Peninsular Malaysia, the fertility level has declined for all age groups. Fertility decline has been most pronounced among the youngest and oldest age groups, and this is true for all ethnic groups. Decline in age specific fertility rate among the younger women was mainly due to rising age at marriage, while earlier termination of childbearing had brought about a drop in the fertility rate of older women.

For all age groups, the fertility rate in 1998 was still significantly higher among the Malays as compared to the non-Malays. The fertility rate among Chinese women aged 35-39 has fallen to a very low level, but that of the Malays in the same age group has remained rather high, at 127 births per thousand women.

3.2 Regional fertility differentials

The total fertility rate varies widely across states and regions. The pronounced state level differentials in fertility can be attributed largely to differences in socio-economic structures. In 1998, total fertility rate is highest in the predominantly Malay East Coast states of Kelantan and Terengganu. These two states are currently ruled by PAS, an Islamic fundamentalist opposition party. Both states have relatively low level of urbanisation. The TFR was lowest in Pulau Pinang and the Federal Territory of Kuala Lumpur where the Malays made up less than half the population, and where the majority of the population lives in urban areas. The fertility level is negatively correlated with household income at the state level. The mean age at marriage among women in the high fertility states is

about 3-4 years younger as compared to those from states with low fertility. At state level, total fertility rate is negatively correlated with contraceptive prevalence rate (see Table 2).

Between 1991 and 1998, the total fertility rate declined rather significantly in Kelantan (from 5.1 to 4.3) and Terengganu (from 4.8 to 3.9). In both the states, fertility declined sharply among women aged 20-24 – from 208 to 130 in Kelantan, and 178 to 113 in Terengganu within a short span of eight years (Department of Statistics 2000). This indicates that with increased education and population mobility, fertility decline can also be expected to decline very sharply even among those who previously cherish norms for large family size. Such decline is likely to be caused by marriage postponement, especially among the increasing number of higher educated women.

The TFR had increased from 2.9 to 3.4 in Selangor between 1991 and 1998. The relatively high level of fertility in Selangor (with TFR increasing from 2.9 in 1991 to 3.4 in 1998) may be attributed to large-scale in-migration of women in the prime reproductive age. Some of these women may have brought along with them norms for large family size from their place of origin.

Within each state, substantial fertility differentials can be observed between urban and rural areas, and between the ethnic groups for each location. Hence, it may be inferred that social cultural factors and differential response to government policies has resulted in fertility differentials among sub-group that are exposed to the same level of socio-economic development.

3. Differentials in number of children ever born

3.1 Parity distribution and proportion of women with large family size

The number of children ever born (CEB) measures the cumulative fertility of women at specific ages at the time of survey. The CEB depends largely on the duration of exposure to childbearing as well as timing of births. As younger women are at the initial stage of family formation, their eventual family size is unknown. Hence, it will be more meaningful to confine the analysis of the distribution of family size to older women. The number of children born by older women would provide an indicator of childlessness and completed family size. However, it is also interesting to examine the proportion of younger women who have already given births to many children. In 1998, the fertility of women aged 40-49 years contributed merely 7 per cent of the total fertility rate for Malay women and just 2 per cent each for the Chinese and Indians.

Table 3 shows that, overall, only about 3 per cent of women who were aged 40 years or older were still childless at the time of survey, 15 per cent had 1-2 children, 37 per cent had 3-4 children and 45 per cent had 5 or more children.

Significant variations in the distribution of family size can be observed across the various sub-groups of the population. Childlessness is most common among women with tertiary education (8 per cent). It appears that the higher educated women may opt to remain childless to concentrate on their careers. Data show that less than 1 per cent of older rural Chinese women and those from the East Coast were childless. For all ethnic groups, a larger proportion of the urban women was still childless as compared to their rural counterparts.

For all ethnic groups, those residing in the rural areas have considerably larger family size as compared to their urban counterparts. In both urban and rural areas, the proportion with 5 or more children is much higher among the Malays as compared to the non-Malays. The proportion with large family size is lowest among urban Chinese (16.3 per cent). The most common family size among Chinese (in both urban and rural areas) and urban Indians is 3-4 children, while the most common family size among Malays (both urban and rural areas) and rural Indians is 5 or more children.

In terms of region, sharp contrast can be observed between the East Coast and the rest of the country with respect to family size distribution. The survey reveals that about 69 per cent of older women in eastern region have 5 or more children, as compared to about 40 per cent of their counterparts in other regions. In the central, northern and southern regions, the proportion of families with 3-4 children and those with 5 or more children are rather evenly split (with about 40 per cent each).

Wife's education provides the sharpest differentials in family size distribution. The 1994 MPFS reveals that only 18.4 per cent of women with tertiary education had five or more children, as compared to more than 50 per cent among those with primary or no schooling. However, part of the fertility differentials according to educational level could be attributed to the difference in timing of marriage and childbearing. The higher educated women are younger and have been married for shorter duration as compared to those with little or no education.

The proportion with large family size among women from the lowest income group is about 2-3 times higher than that from the higher income groups. The most common family size among lower income families is 5 or more children, while those from higher income groups are more likely to have 3-4 children. A large part of the fertility differentials across income categories may be explained by its strong correlation with education.

Given that the exposure to childbearing among younger women differs widely across the various sub-groups, it is useful to highlight groups that have large family size at relatively young age. The 1994 MPFS shows that many women already had large family size at a young age. For instance, almost one in 10 women with primary or no schooling who were aged 25-29 years had already given birth to at least 5 children, and 55 per cent of these lowly educated women

who were aged 30-34 years had 3 or more births. Among rural Malays, a little more than three-quarters of the women aged 30-34 had already given birth to at least three children, and close to one-third had at least five children. Table 4 shows that very few or none of the younger Chinese and Indian women from the urban areas have large family size. In the eastern region, about 8 per cent and 46 per cent of the women aged 25-29 years and 30-34 had at least five children (Table not shown).

3.2 Mean number of children ever born

In the 1994 MPFS, the mean number of children ever born to all women aged 15-49 years is 3.4. The mean CEB is highest among urban Malays (4.0) and lowest among urban Chinese (2.7) and urban Indians (2.8). Parts of these differentials are due to their differences in age structure and age at first marriage, as shown by the somewhat smaller differences in mean CEB after adjusting for age and age at first marriage, as shown in Table 5.

For all ethnic groups, the mean number of CEB is lower among urban women compared to their rural counterparts, and this is true within each age group. The urban-rural differentials tend to be largest among the Chinese women. Based on post-hoc multiple comparison tests (Table not shown), the following homogenous groups with respect to CEB may be identified:

- Urban Chinese and urban Indians with mean CEB of about 2.7-2.8
- Urban Malays, rural Chinese and rural Indians with mean CEB of 3.2-3.5 children
- Rural Malays fertility with mean highest CEB of 4 children

Women in the eastern region have given birth to 1.2 more children than those from other parts of the country (4.5 as against 3.3). The regional differential is reduced slightly once age structure and age at marriage is taken into account. The Malays make up the majority of the population in the eastern region, where Islamic teaching is generally perceived to be pro-natalist. Hence, the high fertility in the eastern region can be attributed largely to cultural and religious settings that favour early marriage and high fertility within marriage.

Significant differential in CEB can be observed between each educational category. Women with tertiary education have the smallest family size of 2.2 children, followed by those with secondary education with 2.7 children, those with primary education with 4.3 children and those with no schooling with 4.8 children. Part of the educational differentials in fertility is due to differences in age structure and age at marriage among lesser and higher educated women. With improvement in educational level, younger women have higher educational level and tend to marry later than older women. After adjusting for age and age at marriage, women with no schooling would still have one child more than those with secondary and tertiary education (see Table 5).

Generally, wife's educational level is closely correlated with that of the husband's. Table 6 shows that husband's education has significant independent effects on the number of children ever born. Among women with no schooling or only primary schooling, the mean number of children ever-born decreases with the educational level of the husband. It is to be noted that within each category of husband's education, wife's education also has an independent effect on the family size. This suggests that decision making on childbearing is most likely the joint decision of husband and wife, with the latter playing a more important role, particularly among the higher educated women. The finding is consistent with the findings of Rodriguez and Cleland (1980). Analysing the World Fertility Survey data from 20 countries, they found that in a majority of study populations the attributes of the wife are more closely related to fertility than the characteristics of the husband.

The tempo of family formation is closely related to pre-marital work experience. Women who never worked and who started work after marriage have significantly higher fertility as compared to those who worked before marriage. However, the fertility differential according to work pattern of women practically disappears with adjustment for age and age at marriage (see Table 5). It is to be noted that women who started work after first child and who were aged 20-24 years already have an average of 2.3 children. Their entry into the labour market may therefore be induced by economic reasons to help to bear the cost of children.

In terms of current occupational status, the agricultural workers have the largest family size, followed by those who were not working. The differential in the mean CEB across the various occupational groups is attenuated with adjustment for age and age at marriage. This points to the fact that women working in the modern sector economy tend to delay marriage and childbearing.

Childbearing outside of wedlock is negligible in Malaysia, and hence age at marriage is a very important intermediate variable in affecting the level of fertility of the various sub-groups who marry at different ages. Data show that women who married prior to age 18 already had 2.2 children by age 20-24. Women who married before reaching 18 years of age had on average 4.9 children at the time of the survey, as compared to 2.2 among those who married at age 24 or older.

In Malaysia, husbands and wives often make decisions with regard family size and family planning. In the above, it was shown that both husband's and wife's education have independent effects on the mean CEB. As such, it is pertinent to examine further the fertility differentials according to husband's and household variables.

Table 7 shows that the mean CEB is highest among women whose husband worked in the agricultural sector (4.5), and there is little variation among those whose husband worked in all other jobs (between 2.8 and 3.1). Mean number of CEB is inversely related with household income, and this is true even after controlling for age and age at first marriage. The 1994 MPFS shows that 76 per cent of women from households with monthly income of more than RM1, 000 were engaged in non-agriculture work, as compared to 43 per cent among those from lower income households. As shown above, modern sector employment is associated with lower fertility.

Based on multiple comparison tests (Table not shown), the following income groups can be categorised as homogenous with respect to CEB:

- RM1000 and above, with mean CEB ranging from 2.7 to 3.0
- RM500-999, with CEB of 3.6
- Below RM500, with CEB of 4.8

Socio-economic variables may have different effects on CEB of the various ethnic groups in the country. Within each ethnic group, fertility may also vary according to social economic variables. In the above analysis, it has been shown that the fertility levels for each ethnic group varies widely by place of residence – being higher in the rural areas as compared to the urban areas.

Table 8 shows the interactive effects of ethnicity with education, work status and household income in explaining the fertility differentials. For all ethnic groups, women with primary or no schooling have at least twice as many children as those with tertiary education. The educational effect on CEB appears to be rather uniform across the ethnic groups. Adjusting for age attenuates the educational effect somewhat for each ethnic group, indicating that educational improvement has been evenly spread to all segments of the population. Additional control for age at marriage further reduces educational differentials in fertility. For the Malays, the “net” difference in CEB between those with primary or no schooling and those with tertiary education would only be 0.7 children each for the Malays and Chinese and 0.4 children for the Indians. This clearly shows that a large part of the educational effect on fertility is mediated through age at marriage.

For all ethnic groups, women who were not working or who were engaged in agriculture work had significantly larger family size as compared to those engaged in non-agriculture work. Controlling for age and age at marriage step by step would reduce the effects of women’s work on fertility progressively. Ethnic differential in fertility is found to be more pronounced among those who did not work and those engaged in agriculture work, compared to those engaged in non-agriculture work. Using non-agriculture work as proxy to modernisation, it may be inferred that social and economic development would result in the convergence of fertility among the various ethnic groups, and bring about a transition to replacement fertility.

Women from higher income households have much smaller family size as compared to those who come from poorer households- the difference being 1 child for the Malays, 0.7 children for the Chinese and 0.8 children for the Indians. Controlling for both age and age at marriage, family size differentials would be reduced correspondingly to just 0.4, 0.2 and 0.3 for each ethnic group. The differential in CEB between the Malays and non-Malays is more pronounced among those from the lower income, compared to those from higher income group.

Many of the socio-economic variables are inter-related in explaining fertility differentials. The Multiple Classification Analysis (MCA), a multivariate technique, is used to assess the independent and combined effects of these variables on mean CEB, in the context of an additive model. The interactive effects of ethnicity and place of residence on fertility was found to be significant, and hence they were combined to form a single variable. Moreover, the preceding analysis indicates clearly that the fertility behaviour of each ethnic group is differentiated by place of residence. Interactions between other pairs of variables are statistically insignificant, and hence an additive assumption of the MCA is not violated.

The MCA models were obtained by entering the demographic and socio-economic variables successively. The combined ethnicity and place of residence variable was entered first into the model, followed by region, wife's variables, husband's variables and household income.

The eta value measures the strength of correlation between the explanatory variable with CEB at the bivariate level. Based on the eta value, both wife's and husband's education have the strongest effects on CEB, followed by wife's pre-marital work experience, family income, the combined variable of ethnicity and place of residence, and region, in that order.

Referring to η^2 , the model that includes only ethnicity and place of residence explains merely 4.8 per cent of the variance in CEB. The addition of region increases the explanatory power (R^2) slightly to 6.6 per cent. However, the addition of wife's education increases the explanatory power substantially to 20.6 per cent. The inclusion of pre-marital work experience improves the explanatory power slightly to 22.9 per cent. Husband's education and family income adds rather marginally to the explanatory power of the model, due to their strong correlation with the other variables that have already been included. Adding age and age at marriage successively as covariate increases the R^2 to 38.6 per cent and 48.3 per cent respectively (see Table 9).

The relative importance of the socio-economic variables in explaining the differentials in CEB in the multivariate context is shown by the beta weight. In the model that includes the six independent variables (without the demographic

controls), wife's education is by far the most important predictor of CEB, while family income is the least important. This could be explained by the fact that income is strongly correlated with educational level, and hence the income effect is largely explained away by the differences in education. The remaining four variables are almost equal in importance in explaining CEB.

However, controlling for age changes the relative importance of these independent variables. The beta value for wife's education decreases sharply from 0.306 to 0.142, while that of the ethnicity/place of residence variable increases from 0.142 to 0.160. In the "full" model, with the further addition of age at marriage as the second covariate, the beta weight for wife's and husband's education as well as premarital work experience is further reduced substantially.

Looking at the adjusted means, it can be seen that urban-rural differential in CEB among the Malays is largely explained away by other socio-economic variables, but the differential widens somewhat with demographic controls. The urban-rural differentials among the Chinese, and to a lesser extent, the Indians, remain rather significant even after controlling for all other factors and covariates in the models. This suggests the adherence to traditional values for larger family among rural Chinese. However, it is to be noted that only about 12 per cent of the Chinese and 20 per cent of the Indians are now living in rural areas.

Table 9 shows that, controlling for other socio-economic variables and the two covariates; women from the eastern region would still have about 0.7-0.8 more children than those from other regions. The regional effect is to a large extent the result of adherence to traditional values and cultures that still exert strong influence in the eastern coast of Peninsular Malaysia, despite educational improvement.

The educational effect remains very strong even after controlling for other socio-economic factors in the model. However, the difference in the mean CEB between women with primary or no schooling and those with tertiary education is substantially reduced with the inclusion of age and age at marriage. This can be explained by the fact that the higher educated women are much younger as compared to the lesser-educated women (median age of 31 and 39 respectively). The timing of marriage is strongly and positively correlated with education. Hence, controlling for age at marriage would result in the attenuation of the education effects. If women with tertiary education had the same age structure and marital duration as those with primary or no schooling, the difference in the mean CEB would be reduced to merely 0.37 children compared to the observed difference of 2.24 children.

Women who were working before entering marriage had 0.82 children fewer than those who were not working. After controlling for other socio-economic factors and covariates in the model, the differential remains rather significant, at 0.55.

This could be due to the fact that women who were engaged in pre-marital work are more modern in outlook, and are more inclined to have smaller family size.

Husband's education has about the same effect on CEB as wife's education at the bivariate level. This confirms the preceding finding that wife's variables are more important than those of husband's in explaining fertility differentials.

Of the socio-economic variables considered in the present analysis, family income has the least effect on family size, once the other variables are taken into account. The observed differential of between 2.7 among those with family income of RM2000 or more and 4.2 among those with monthly income of less than RM500 could be attributed to differences in educational level and age at marriage.

3.3 Differentials in completed family size

An analysis of the fertility differentials based on mean CEB for all women aged 15-49 years may be distorted as the timing spacing of childbearing is likely to vary across the sub-groups. One way to overcome the problems of censoring and truncation is to examine the fertility level of women at the end of their reproductive life. However, this measure of "completed fertility" is confined to older women whose fertility behaviour may be very different from that of younger women. Moreover, the small sample size also limits more vigorous multivariate analysis.

An examination of the mean CEB of women aged 45-49 years shows that the fertility differentials across the sub-groups is larger than that implied by the overall mean (see Table 5 and Table 7). For instance, based on the overall mean, rural Chinese have 0.8 children more than their urban counterparts, but the completed family size of the former is 1.4 children more than the latter. Urban Malay women have a completed family size of 1.8 children more than urban Chinese women, as compared to a difference of only 0.6 children based on the overall mean. The above comparisons serve to indicate the gross under-estimation of the fertility differentials on the basis of the overall mean for the groups that include both the young and old. Nevertheless, as younger Malay women may terminate childbearing earlier than older Malay women, the observed differentials in the completed family size may result in an over-estimation of the ethnic fertility differentials.

In terms of region, family size of women aged 40 and over is almost two children more than those from other regions are. Pronounced differentials in completed family size between the eastern region and other parts of the country is expected to continue for sometime, as wide fertility differentials can still be observed among younger women.

An interesting observation can be made on the percentage difference between the overall mean CEB and the completed family size for women of different educational level. The percentage difference is 8.3 per cent among women with no schooling, 23.8 per cent among women with primary education, 53.8 per cent among women with secondary education and 31.8 per cent among women with tertiary education. This suggests that the higher educated women are younger and are more likely to continue childbearing. Be that as it may, older women with tertiary education in the sample had a completed family size of 2.3 fewer compared to women with no schooling.

Wide differentials in completed family size can be observed across the occupational categories of women. However, it is worth noting that women from all occupation, including the professionals still have a completed family size of three or more children.

4. Proximate determinants of fertility

The effects of socio-economic variables on fertility are mediated largely through delayed marriage and contraceptive use. Induced abortion is illegal (except on medical grounds) and is unlikely to have a very strong fertility inhibiting effect. Differences in breast-feeding practices exist between the various sub-groups of the population. In a previous study, Tey and others (1988) found that the duration of breast-feeding among the Malays was almost three times that of the Chinese and twice as long as that of the Indians. Higher education and urban residence were found to be associated with shorter duration of breast-feeding. However, breast-feeding practices have become less common over the years, and its fertility inhibiting effect is smaller than that of rising age at marriage and increased contraceptive use.

4.1 Differentials in marital structure and mean age at first marriage

In the preceding section, we have shown that differences in the timing of marriage account for a large part of the socio-economic differentials in fertility. Age at marriage is directly related to educational level, premarital work, urbanisation and modernisation. Table 10 shows that ever increasing proportion of younger women from each ethnic group is remaining single. The proportion that had never been married in each age group is higher among the non-Malays as compared to the Malays. With educational improvement and increase in women's participation in modern sector economy, the proportion of women that would remain unmarried can be expected to increase.

Age at marriage has been rising steadily over the years. According to the 1991 Population Census, the singulate mean age at marriage for women had risen to 24.6 years for the Malays, 26.3 years for the Chinese and 25.5 years for the Indians.

Among women who have ever married, the age at marriage varies markedly by socio-economic variables. Table 11 shows that among women aged 30 years and older the mean age at marriage varies from 20.3 years among rural Malay women to 23.5 years among urban Chinese women. Within each ethnic group, rural women entered marriage 1-2 years later than urban women. In terms of region, women from eastern region married on average about 2 years earlier than women from other regions.

Age at marriage is positively and strongly correlated with educational level. Among women aged 30 years and older, the mean age at first marriage is 4.1 years later among those with tertiary education compared to those with no schooling. Strong educational effects on marriage postponement can be observed for all the three main ethnic groups (Table not shown).

Pre-marital work experience tends to delay marriage. Table 11 shows that women who worked before marriage were married 3 and half years later than those who did not work.

4.2 Contraceptive use

Decline in marital fertility resulting from increased contraceptive use has also contributed to the decline in total fertility rate. In Peninsular Malaysia, contraceptive prevalence rate has increased from 9% in 1966 to 36% in 1974, 52% in 1984 and 58% in 1994. Confining the analysis to “exposed” women (currently married and non-pregnant women, about 60.3 per cent were currently using a method and only 33.4 per cent (or 44 per cent including the rhythm method) were using an efficient method at the time of the survey in 1994. Data show that less than a third of the Malay women exposed to the risk of childbearing were using an efficient method (including rhythm method). In contrast, close to three-quarters of the Chinese and about half of the Indian women were using an efficient method. Among Malay and Chinese women, the proportion using an efficient method in the rural areas is about the same as that in urban areas. Indian women residing in the rural areas were more likely than their urban counterparts to use an efficient method of contraception. Part of this differential could be attributed to the younger age structure of urban women as compared to rural women. Data show that about 20 per cent of the Malay and Indian women were using an inefficient method, but few Chinese women did so. However, it is to be mentioned that close to one-quarter of the Chinese women were using the rhythm method, which is sometimes regarded as an inefficient method.

The contraceptive prevalence is very much lower in the eastern region as compared to all other regions, which registered about the same level of contraceptive use (see Table 12). Such differentials and similarities are reflected in the fertility trends and levels of these regions.

The educational effect on contraceptive use is found to be rather small, and this may again be attributed to the younger age structure of women with higher education. The proportion currently using a modern method ranges between 38 per cent among women with no schooling to about a 45 per cent for all other educational categories.

In terms of work status, significant variations can be observed between those who worked and those who did not work. The proportion using an efficient method increases monotonically according to income level, from 29 per cent among women from the lowest income group to 58 per cent among those from highest income group. It is notable that women from all income categories were almost equally likely to use an inefficient method (about 15-20 per cent).

5. Discussion and conclusion

Ethnic fertility differentials have persisted on account of socio-cultural, religious, economic and political factors. Adhering strongly to Islamic faith, the Malays tend to marry earlier and rarely make use of modern contraception. Their relatively higher fertility may also result from government policies in the forms of scholarships, which lessen the cost of children. In contrast, age at marriage and non-marriage has risen more rapidly among the Chinese and the Indians, and many married women are using some efficient contraceptive methods. The opportunity cost of childbearing is relatively higher among Chinese and Indian women who are more likely to be engaged in urban labour market than the Malays.

Increased education, urbanisation and female labour force participation represent strong social forces that would bring about continuing decline in fertility among all groups. The eventual reduction of direct assistance from the government that looks to promote competitiveness in light of globalisation, will also increase the cost of children among the Malays. The switch from extended families to nuclear families is eroding the family support system for childcare. The Malays are still relatively less urbanised and few are using efficient contraceptive methods, and as such they have a bigger scope for the fertility decline. The religious barriers for fertility decline of the past may also be giving way. This can be seen in the sharp fertility decline in a number of Islamic countries, notably, Indonesia (with a TFR of 2.4), Bangladesh (with a TFR of 3.7), Iran (with a TFR of 2.9), Brunei (with a TFR of 2.7), as well as the Muslim population in Thailand and Singapore that have experienced below replacement fertility (UN, 2000). The sharp decline in the total fertility rate in Kelantan and Trengganu points to the fact that with social and economic development, the fertility level will probably be declining at a faster pace among those that lag behind, resulting in the narrowing of the differentials.

The fertility level of the Chinese and Indians is can be expected to trend lower. The cost of children, particularly, education cost, has increased tremendously as more and more are aspiring to send their children to higher education to prepare them for the increased competitive environment of globalisation and k-economy.

The educational profile of the labour force shows that the proportion with tertiary education is 13% compared to only 3% in 1980. There are narrower gender differentials in educational attainment and the female composition is 34% in the total workforce (Malaysia, 2001). In this paper, we have shown that education has a huge effect on suppressing the fertility level. Data show that as many as 8 per cent of married women were childless at age 40 and over. Moreover, the educational effect will also be strongly mediated through delayed marriage and an increase in non-marriage.

The 1997 financial crisis that hit the region would have a far-reaching effect on the fertility behaviour of the population. For the last two to three decades Malaysia had enjoyed a rapid economic growth of 8 per cent per annum. Following the economic melt down, the country is still struggling for economic recovery. The economic hardships that had hit many would probably lead many to revise their family size desire.

The Malaysian government has adopted a rather liberal approach in implementing the population policy. The official position of the government with regard to the implementation of the population programme is probably influenced by the labour shortage since the 1980s. Moreover, experience from low fertility countries shows that efforts to prop up fertility have often proven futile. In 1984, the Government called for a population of 70 million. Such policy had caused some confusion and misinterpretation. According to the policy, the 70 million population is to be achieved in 2100 and this calls for a deceleration in the rate of fertility decline. The total fertility rate is targeted to decline at 0.1 children every five years. At the present rate of fertility decline, the 70 million goal may not be achieved.

The government now supports a population programme that has its main thrust on family development, aimed at strengthening the family unit. Great emphasis has also been placed on human resource development to have a quality population. Family planning services is now provided as an integral part of reproductive health services. Couples can also avail themselves to family planning services through the private practitioners.

With economic recovery and social changes, the fertility of all groups are expected to continue to decline, albeit at different pace. Replacement level fertility is likely to be achieved before 2020, the year in which country will become fully industrialised, according to the vision of the Prime Minister. The continuing fertility decline will have implications on the family system and social and economic structures that have to be taken into account in development planning.

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Table 1: Total fertility rates and age specific fertility rate by ethnicity, Peninsular Malaysia, 1967 and 1997

	<u>TFR</u>	<u>Age specific fertility rates</u>						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49
Malays								
1967	5.4	0.09	0.267	0.267	0.24	0.15	0.055	0.017
1997	3.8	0.017	0.142	0.232	0.193	0.127	0.052	0.006
Chinese								
1967	5.2	0.029	0.204	0.319	0.243	0.162	0.072	0.017
1997	2.5	0.01	0.07	0.191	0.160	0.061	0.01	0.001
Indians								
1967	6.4	0.103	0.326	0.338	0.252	0.154	0.049	0.013
1997	2.6	0.021	0.123	0.188	0.131	0.053	0.011	0.001

Table 2: Total fertility rate and selected socio-economic indicators by state, circa 1998 to 2000

<u>State</u>	<u>TFR</u>	<u>Rate of pop. growth</u>	<u>% urban</u>	<u>% Bumiputra</u>	<u>Mean age at marriage (female)</u>	Mean household income	CPR among exposed women*
P. Malaysia	3.2	2.5	65.4	62.2	25.4	-	-
Johor	2.9	2.6	65.2	57.1	25.3	2,646	62
<i>Kedah</i>	3.4	2.1	39.3	76.6	24.7	1,612	62
<i>Kelantan</i>	4.5	0.9	34.2	95.0	23.1	1,314	22
Melaka	3.5	2.0	67.2	63.8	25.4	2,260	72
N. Sembilan	3.2	1.9	53.4	57.9	25.1	2,335	69
<i>Pahang</i>	3.2	1.9	42.0	76.8	24.3	1,482	56
Perak	3.0	0.4	58.7	54.7	25.2	1,743	69
<i>Perlis</i>	3.0	0.8	34.3	85.5	23.8	1,431	62
P.Pinang	2.4	1.8	80.1	42.5	26.3	3,128	74
Selangor	3.4	6.1	87.6	53.5	26.0	3,702	67
<i>Terengganu</i>	3.7	1.2	48.7	96.8	24.5	1,599	29
K. Lumpur	2.6	1.3	100.0	43.6	27.1	4,105	61

Note: States in written in italics are classified as less developed states in Eighth Malaysia Plan (2001-2005)

* Based on 1994 Malaysian Population and Family Survey

Sources: Malaysia, 2001, Department of Statistics, 2000

Table 3: Percentage distribution of respondents aged 40 and over by number of children ever born by selected variables

	<u>Number of children</u>				<u>Total</u>	<u>n</u>
	<u>0</u>	<u>1-2</u>	<u>3-4r</u>	<u>5+</u>		
Total	3.0	15.0	37.0	45.0	100.0	1372
Race/stratum						
Urban Malays	3.7	11.4	39.2	45.7	100.0	324
Rural Malays	3.0	10.1	22.7	64.2	100.0	466
Urban Chinese	2.4	28.8	52.4	16.3	100.0	288
Rural Chinese	0.9	7.7	45.3	46.2	100.0	117
Urban Indians	4.2	23.2	40.0	32.6	100.0	95
Rural Indians	3.4	15.5	32.8	48.3	100.0	58
Region						
Central	2.2	15.1	43.7	39.0	100.0	403
North	3.3	17.1	36.4	43.2	100.0	486
South	4.9	15.6	37.7	41.9	100.0	308
East	0.6	8.6	21.7	69.1	100.0	175
Wife's education						
No schooling	1.4	13.0	29.0	56.5	100.0	207
Primary	2.6	12.1	33.7	51.6	100.0	762
Secondary	4.0	20.3	48.0	27.7	100.0	354
Tertiary	8.2	32.7	40.8	18.4	100.0	49
Family income						
< RM500	3.8	11.8	24.9	59.5	100.0	373
RM500 - RM999	2.6	11.9	33.0	52.6	100.0	430
RM1000 - RM1499	2.9	17.2	45.5	34.4	100.0	209
RM1500 - RM1999	0.9	21.4	53.6	24.1	100.0	112
RM2000 & above	3.5	22.7	51.5	22.2	100.0	198

Table 4: Per cent respondents with 3 or more and 5 or more children by age group and selected variables

		<u>Age</u>	<u>3 or more</u>	<u>5 +</u>	<u>n</u>
Ethnicity/stratum	Urban Malays	25-29	32.2	3.5	255
		30-34	60.1	15.6	276
		35-39	73.9	30.2	245
		40-44	85.0	41.1	180
		45-49	84.7	51.4	144
	Rural Malays	25-29	38.6	4.8	249
		30-34	76.3	30.0	287
		35-39	82.4	47.9	290
		40-44	86.7	58.8	255
		45-49	87.2	70.6	211
	Urban Chinese	25-29	20.0	0.8	120
		30-34	46.7	3.9	152
		35-39	64.6	9.4	181
		40-44	68.0	11.1	153
		45-49	69.3	22.2	135
	Rural Chinese	25-29	37.8	4.4	45
		30-34	65.9	15.9	82
		35-39	80.6	28.4	67
		40-44	92.4	37.3	67
		45-49	90.0	58.0	50
Urban Indians	25-29	34.4	0.0	64	
	30-34	46.8	8.9	79	
	35-39	68.5	24.7	73	
	40-44	67.3	23.6	55	
	45-49	80.0	45.0	40	
Rural Indians	25-29	44.8	3.4	29	
	30-34	61.9	9.5	21	
	35-39	72.3	27.7	47	
	40-44	78.8	45.5	33	
	45-49	84.0	52.0	25	
Wife' education	Primary/no schooling	25-29	54.6	9.7	165
		30-34	75.2	26.4	334
		35-39	81.0	42.7	494
		40-44	85.9	48.3	481
		45-49	84.8	56.8	388
	Secondary	25-29	31.3	2.8	530
		30-34	58.1	13.3	503
		35-39	70.5	20.9	369
		40-44	75.6	24.8	246
		45-49	76.9	34.3	108
	Tertiary	25-29	14.4	0.0	104
		30-34	40.4	7.4	94
		35-39	58.9	15.1	73
		40-44	58.2	20.7	29
		45-49	60.0	15.0	20

Table 5: Mean number of children ever born by selected socio-economic variables according to current age

<u>Age</u>	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>35-39</u>	<u>40-44</u>	<u>45-49</u>	<u>Total</u>	<u>Adj. mean</u>
<u>Birth cohort</u>	<u>1970-</u>	<u>1965-</u>	<u>1960-</u>	<u>1955-</u>	<u>1950-</u>	<u>1945-</u>		
	<u>74</u>	<u>69</u>	<u>64</u>	<u>59</u>	<u>54</u>	<u>49</u>		
All	1.2	2.1	3.1	3.9	4.4	4.9	3.4	3.4
<u>Ethnicity/stratum</u>								
Urban Malays	1.1	2.0	3.0	3.8	4.7	5.1	3.3	3.5
Rural Malays	1.4	2.2	3.7	4.6	5.3	5.9	4.0	3.8
Urban Chinese	0.8	1.7	2.5	2.9	3.1	3.3	2.7	2.7
Rural Chinese	0.9	2.1	3.2	3.7	4.2	4.7	3.5	3.4
Urban Indians	1.1	1.8	2.5	3.4	3.5	4.4	2.8	3.0
Rural Indians	1.4	2.2	2.9	3.7	4.3	4.8	3.4	3.3
<u>Region</u>								
Central	1.2	1.9	2.8	3.6	4.1	4.6	3.1	3.2
North	0.9	2.0	3.0	3.7	4.3	4.6	3.3	3.2
South	1.1	2.0	3.1	3.9	4.1	4.8	3.3	3.3
East	1.7	2.5	4.3	5.5	6.2	6.3	4.5	4.3
<u>Wife's education</u>								
No schooling	1.2	3.2	4.4	5.2	5.0	5.2	4.8	4.0
Primary	1.5	2.6	3.6	4.2	4.8	5.2	4.2	3.6
Secondary	1.1	2.0	2.9	3.4	3.8	4.0	2.6	3.1
Tertiary	0.7	1.4	2.4	3.0	3.0	2.9	2.2	2.9
<u>Wife's work pattern</u>								
Before & after marriage	1.0	1.7	2.7	3.5	3.9	4.5	3.0	3.1
Before marriage	1.0	2.1	3.2	4.0	4.6	4.9	3.0	3.5
After marriage		2.1	3.0	4.4	4.8	5.1	4.0	3.3
1.0								
After first child	2.3	3.2	4.2	4.4	5.0	5.5	4.6	3.7
Never worked	1.7	2.9	4.1	4.9	5.2	5.5	4.3	3.9
<u>Wife's occupation</u>								
Not working	1.7	2.8	4.0	4.6	5.1	5.4	4.3	3.8
Professional	0.9	1.4	2.4	2.7	3.2	3.2	2.4	2.8
Clerks	0.8	1.5	2.4	2.9	3.4	3.1	2.3	2.8
Sales workers	1.0	2.1	2.7	3.3	3.5	3.5	2.5	2.9
Service workers	1.4	2.3	2.9	3.9	3.8	3.9	3.0	3.2
Agricultural workers	1.8	2.5	4.0	4.6	5.0	5.9	4.7	4.1
Production workers	0.9	1.8	2.9	3.4	3.7	3.5	2.6	3.0
<u>Age at marriage</u>								
Less than 18	2.2	3.5	4.8	5.3	5.9	6.2	4.9	-
18 - 20	1.1	2.8	3.8	4.7	5.2	5.4	3.8	-
21 - 23	0.6	1.9	3.1	3.7	4.0	4.3	3.0	-
24+	-	1.0	1.9	2.6	2.9	3.2	2.2	-

Table 6: Mean number of children ever born by educational level of wife and husband

<u>Wife's education</u>	<u>Husband's education</u>	<u>Mean</u>	<u>n</u>
No schooling	No schooling	4.7	102
	Primary	5.2	193
	Secondary	3.7	60
	Tertiary	4.0	2
	Total	4.8	357
Primary	No schooling	4.6	154
	Primary	4.5	978
	Secondary	3.6	529
	Tertiary	3.6	19
	Total	4.2	1680
Secondary	No schooling	2.9	38
	Primary	3.2	381
	Secondary	2.5	1403
	Tertiary	2.6	242
	Total	2.6	2064
Tertiary	No schooling	2.7	3
	Primary	3.6	9
	Secondary	2.1	115
	Tertiary	2.2	216
	Total	2.2	343

Table 7: Mean number of children ever born by husband's occupation and family income according to current age

<u>Age</u>	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>35-39</u>	<u>40-44</u>	<u>45-49</u>	<u>Total</u>	<u>Adj. mean</u>
Husband's occupation								
Professional	0.8	1.7	3.0	3.0	3.8	4.7	3.0	3.1
Clerical	1.0	1.8	2.7	3.2	3.8	3.5	2.8	2.9
Sale workers	1.2	1.9	2.8	3.4	4.0	4.6	3.1	3.3
Service workers	1.0	2.1	2.9	3.9	4.1	4.9	3.1	3.3
Agriculture	1.5	2.6	4.0	4.9	5.1	5.8	4.5	4.0
Production	1.2	2.0	3.0	3.9	4.5	4.5	3.1	3.3
Household income								
< RM500	1.4	2.6	3.9	4.7	5.2	5.6	4.2	3.9
RM500 - 999	1.2	2.2	3.3	4.2	4.7	5.2	3.5	3.5
RM1000 -1499	1.0	1.7	3.0	3.7	4.1	4.3	3.0	3.2
RM1500 - 1999	0.9	1.7	2.7	3.0	3.7	3.6	2.7	2.9
RM2000+	1.0	1.6	2.4	3.0	3.4	3.5	2.7	2.8

Table 8: Mean children ever born (adjusted for age and age at marriage) by ethnicity and selected variables

	<u>n</u>	<u>Un- adjuste d</u>	<u>Adjusted for age</u>	<u>Adjusted for age and age at marriage</u>
Ethnicity and educational level				
Malays with primary or no schooling	1085	4.9	4.4	4.0
Malays with secondary education	1331	2.9	3.4	3.4
Malays with tertiary education	239	2.4	2.8	3.3
Chinese with primary or no schooling				
Chinese with secondary education	465	2.3	2.5	2.8
Chinese with tertiary education	76	1.7	1.7	2.4
Indians with primary or no schooling				
Indians with secondary education	271	3.9	3.6	3.3
Indians with tertiary education	230	2.0	2.5	2.8
Indians with tertiary education	21	1.8	2.3	2.9
Ethnicity and work status				
Malays not working	916	4.5	4.3	3.9
Malays in agriculture work	331	5.3	4.7	4.4
Malays in non-agriculture work	1408	2.7	3.1	3.3
Chinese not working				
Chinese in agriculture work	128	3.8	3.2	3.0
Chinese in agriculture work	152	4.2	3.6	3.5
Chinese in non-agriculture work	820	2.5	2.5	2.8
Indians not working				
Indians in agriculture work	147	3.6	3.4	3.1
Indians in agriculture work	136	3.9	3.6	3.4
Indians in non-agriculture work	239	2.1	2.5	2.8
Family Income				
Malays with H/H income <RM1000	1737	4.0	4.0	3.7
Malays with H/H income RM1000+	861	3.0	3.2	3.3
Chinese with H/H income <RM1000				
Chinese with H/H income <RM1000	325	3.4	3.0	3.1
Chinese with H/H income RM1000+	760	2.7	2.6	2.9
Indians with H/H income <RM1000				
Indians with H/H income <RM1000	285	3.3	3.3	3.2
Indians with H/H income RM1000+	220	2.5	2.7	2.9

Table 9 : Multiple classification analysis of mean number of children ever born by selected variables

<u>Ethnicity/residence</u>	<u>Unadj.</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	
Urban Malay	1196	3.22	3.22	3.53	3.51	3.57	3.56	3.49	3.47
Rural Malay	1402	3.99	3.88	3.76	3.69	3.63	3.66	3.73	3.64
Urban Chinese	755	2.68	2.79	2.79	2.92	2.95	2.89	2.73	2.88
Rural Chinese	330	3.47	3.59	3.20	3.31	3.28	3.24	3.34	3.40
Urban Indian	334	2.75	2.91	2.87	2.83	2.87	2.85	2.96	3.01
Rural Indian	170	3.39	3.50	3.08	3.12	3.06	3.09	3.27	3.25
eta/beta		0.218	0.190	0.166	0.139	0.132	0.142	0.160	0.125
Region									
Central	1368	3.07	3.24	3.32	3.35	3.37	3.33	3.36	3.35
North	1355	3.29	3.28	3.25	3.22	3.22	3.22	3.17	3.20
South	939	3.29	3.24	3.20	3.25	3.24	3.24	3.23	3.27
East	525	4.52	4.24	4.18	4.07	4.02	4.10	4.17	4.04
eta/beta		0.190	0.14	0.135	0.118	0.111	0.122	0.137	0.115
Wife's education									
Primary ^a	1861	4.35		4.36	4.30	4.12	4.14	3.72	3.53
Secondary	1996	2.66		2.65	2.69	2.83	2.82	3.15	3.25
Tertiary	330	2.14		2.15	2.27	2.46	2.35	2.76	3.16
eta/beta		0.386		0.388	0.363	0.294	0.306	0.142	0.064
Wife ever worked before marriage									
Never worked	1151	4.36			3.97	3.94	3.96	3.77	3.43
Ever worked	3036	3.00			3.15	3.16	3.14	3.22	3.35
eta/beta		0.262			0.160	0.152	0.160	0.109	0.015
Husband's education									
Primary ^a	1697	4.31				3.78	3.80	3.57	3.48
Secondary	2026	2.80				3.08	3.08	3.24	3.28
Tertiary	464	2.42				3.18	3.04	3.21	3.36
eta/beta		0.340				0.147	0.156	0.073	0.040
Household income									
< RM500	923	4.20					3.24	3.37	3.37
RM500 – 999	1424	3.56					3.35	3.45	3.45
RM1000 - 1499	777	2.98					3.29	3.36	3.36
RM1500 - 1999	405	2.73					3.40	3.26	3.27
RM2000+	658	2.66					3.67	3.26	3.27
eta/beta		0.243					0.060	0.032	0.031
R ²		0.048	0.066	0.206	0.229	0.244	0.252	0.386	0.483

Table 10: Proportion of Women Ever Married by Age and Ethnic Group in Peninsular Malaysia, 1970, 1980, 1999

		<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>35-39</u>	<u>40-44</u>
Malays	1970	23	68	91	97	98	99
	1980	11	51	83	92	96	98
	1991	5	39	77	90	94	96
Chinese	1970	6	40	79	91	94	97
	1980	5	37	72	87	92	94
	1991	3	25	64	83	89	92
Indians	1970	17	63	88	96	98	99
	1980	9	45	76	89	95	97
	1991	6	35	69	84	90	94

Table 11: Mean age at first marriage among women aged 30 years and older by selected variables, 1994

<u>Variables</u>	<u>Mean</u>	<u>n</u>
Total	21.7	3239
Ethnicity/stratum		
Urban Malays	22.0	845
Rural Malays	20.3	1043
Urban Chinese	23.5	621
Rural Chinese	21.9	266
Urban Indians	21.9	247
Rural Indians	21.0	126
Region		
Central	22.4	1066
North	21.8	1053
South	21.8	724
East	19.7	396
Wife's Education		
No schooling	21.0	318
Primary	20.5	1479
Secondary	22.7	1226
Tertiary	25.1	216
Worked before marriage		
Never	19.3	996
Ever	22.8	2243

Table 12: Per cent of “exposed” women” currently using any/efficient methods of contraception by selected variables, 1994

	<u>Any</u>	<u>Efficient</u>	<u>Efficient (including rhythm method)</u>	<u>n</u>
Total	60.3	33.4	44.1	3820
Urban Malays	53.6	25.2	32.9	1037
Rural Malays	49.3	25.0	30.3	1213
Urban Chinese	77.3	48.9	72.3	693
Rural Chinese	78.9	53.7	72.8	294
Urban Indians	67.0	31.7	42.4	297
Rural Indians	74.8	45.5	52.5	143
Region				
Central	63.3	36.0	47.6	1274
North	67.5	36.5	48.7	1214
South	65.0	36.2	48.7	873
East	24.4	12.2	13.7	459
Wife's education				
No schooling	49.5	26.9	38.4	305
Primary	60.7	35.0	43.4	1453
Secondary	62.1	33.4	45.2	1774
Tertiary	58.7	31.6	46.9	288
Wife's work status				
Not Working	52.6	26.4	34.7	1092
Agriculture	58.7	36.2	44.4	572
Non-agriculture	64.7	36.1	48.8	2156
Household income				
< RM500	44.9	25.4	29.2	797
RM500 – 999	60.8	33.4	41.4	1302
RM1000 -1499	64.8	35.7	49.3	712
RM1500 - 1999	69.5	34.2	54.2	371
RM2000 & Above	69.7	41.1	57.9	608

