How Well Do Desired Fertility Measures for Wives and Husbands Predict Subsequent Fertility? Evidence From Malaysia

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ABSTRACT

We examine responses to two fertility preference questions -- regarding whether more children are wanted and desired total family size (compared to actual family size) -- that were asked of women and their husbands as part of the First Malaysian Family Life Survey fielded in 1976-77 and see how well these preferences (and the consistency between them) predict the women’s subsequent fertility, as reported in the Second Malaysian Family Life Survey, fielded 12 years later. Women who said (and whose husbands said) in 1977 that they wanted more children were much more likely to have a birth than those who said they did not want more. If there was disagreement between spouses, the husband’s preferences appear to play a stronger role in predicting the likelihood of a subsequent birth. We investigate how events during the 12-year period between the surveys, e.g., the death of a child, affect the relationship between fertility preferences and subsequent fertility outcomes.
INTRODUCTION

Data on fertility preferences are often used to help predict future fertility and the demand for contraception. The quality of fertility preference data is of prime importance when examining how well stated fertility preferences predict subsequent births and completed family size, and how well they predict fertility-related behavior such as contraceptive use. Data on fertility preferences have also been used to construct measures of the unmet need for contraception and of unwanted fertility. The usefulness of these measures, which have been the basis for many studies and some programmatic efforts, depend on the underlying component (stated fertility preferences) being valid and reliable.

This paper examines responses to two fertility preference questions -- regarding whether more children are wanted and desired total family size (compared to actual family size) -- that were asked as part of the First Malaysian Family Life Survey (MFLS-1) fielded in 1976-77, and then explores how well those preferences predict subsequent fertility, as reported in the Second Malaysian Family Life Survey (MFLS-2), fielded 12 years later, in 1988-89. Because the MFLS-1 directly asked husbands as well as wives about their fertility preferences, we can examine the consistency between the woman’s and her husband’s responses and the relationship of those responses (and the consistency between them) to fertility outcomes that occurred by 1988. We are especially interested in whether 1977 preferences predict 1977-88 fertility better when the two types of measures and the spouses’ responses are consistent with each other and, if the responses are inconsistent, which of them better predicts subsequent fertility.

A number of studies, based on U.S. and Asian survey data, have examined whether a woman’s subsequent fertility over a period of time is related to her stated fertility preferences, regarding whether she wants more children and whether her desired family size exceeds the number of children she has, at the beginning of the time period (Becker, 1996; Freedman, Hermelin, and Chang, 1975; Coombs and Chang, 1977; Westoff and Ryder, 1977; Hermelin, et al., 1979; Foreit and Suh, 1980; Nair and Chow, 1980; Clifford, Lake and Brannon, 1987; Thomson, McDonald and Bumpass, 1990; De Silva, 1991; Tan and Tey, 1994). These studies, which consider a time span of three to seven years, generally find that the wife’s subsequent fertility is related to her fertility desires. Some of these studies also had information on the husband’s fertility preferences (Coombs and Chang; Clifford et al.; Thomson et al.; De Silva; Tan and Tey); they find that the husband’s preferences also play a role in explaining/predicting subsequent fertility.
Few studies have been able to examine the predictive power of both types of measures (wanting more children and desired family size), for both spouses, over a period of time long enough that, by its end, most women have completed (or believe they have completed) childbearing or at least are likely to be making substantial progress toward that goal. The 12-year period between 1977 and 1988 covered by the Malaysian Family Life Surveys provides an opportunity to evaluate how well preferences at the beginning of a period, for women alone and in combination with those of their spouses, relate to fertility observed over a longer period of time. In addition, the detailed life histories collected in MFLS-2 allow us to see how events during the 12-year period between the surveys, such as change in marital status, death of a child, and migration to a new area, affect the relationship between fertility preferences and subsequent fertility outcomes.

DATA AND METHODS

Data: The Malaysian Family Life Surveys (MFLS-1 and MFLS-2)

We use data from the First and Second Malaysian Family Life Surveys (MFLS-1 and MFLS-2). MFLS-1 was conducted in 1976-1977 in households in Peninsular Malaysia that each contained an ever-married woman (EMW) age 50 or less. The survey collected data on the EMW and her resident spouse in three separate rounds conducted at 4-month intervals. In all, 1,262 households responded in Round 1. The survey collected household-level current and retrospective data from the women and their husbands, covering a number of topics of demographic interest (fertility, nuptiality, migration, mortality), as well as social and economic factors affecting family decisionmaking. As part of the second round of MFLS-1, fielded between January and April 1977, women and their husbands were asked about their fertility preferences as part of the Female and Male Attitudes and Expectations questionnaires (MF7 and MF8). The MFLS-1 data used in this paper are drawn from the second round of MFLS-1, in which 1,216 households responded; they reflect the respondent’s status as of the second round (early 1977).

Fielded in 1988, the MFLS-2 also collected full retrospective life histories covering the same general topics as MFLS-1. As part of MFLS-2, 866 of the 1,216 MFLS-1 Round 2 respondents were reinterviewed. These reinterviewed (or “Panel”) women represent 72 percent of the eligible MFLS-1 respondents (i.e., 72 percent of those thought to be still alive and living in Peninsular Malaysia). Complete pregnancy histories, beginning with their first pregnancy until the time of the MFLS-2 interview, were collected on the Panel women. In this paper, the live births occurring during the period between MFLS-1 and MFLS-2 (1977-1988) are related to the fertility preferences reported in Round 2 of MFLS-1 in 1977.

Fertility Preference Measures

We consider the two alternative measures of fertility preferences: more children are wanted and desired family size exceeds actual family size.
First Measure: Wants More Children

To determine whether the respondent wanted to have any additional children, all MFLS-1 female and male respondents (regardless of current marital status) were asked:

Would you personally like to have any more children than the number you have now?

The question was worded and emphasis given to try to capture the respondent’s own preferences as opposed to what she/he thought others might want her/him to say. Of course, we cannot be certain whether the response only reflects the individual’s own preferences. To some extent, the subsequent analyses of consistency and predictive capability may shed some light on how well such wording elicited the individual’s own feelings. Although there is no reason to believe that responses to the question “Would you like to have any more children” are biased because people systematically under- or over-report, Bongaarts (1990) notes that some error may arise if respondents think the question relates to immediate plans versus ultimate goals (i.e., the woman thinks the question asks if she wants another child in the next year or two or three, as opposed to by the end of her childbearing years).

Second Measure: Desired Family Size Exceeds Actual Family Size

To determine desired total family size, the MFLS-1 asked both male and male respondents:

Suppose you started your married life all over again and you could decide what children to have. How many children would you want? PROMPT: How many boys? How many girls?

Desired family size is the sum of the number of boys and girls reported in response to these questions. In our analyses, we compare this total to the respondent’s current family size, which is defined as the number of the respondent’s own children alive at the time of Round 2 (the first quarter of 1977). Respondents whose desired family size exceeds their current family size are said to “desire more children than they have;” those whose desired family size is the same or less than the current family size are said to “not desire more children than they have.” In our data, among the 61 percent of women who are classified as not wanting more children, 65 percent of them have desired family sizes that are smaller than their current family size.

The quality of this measure as an indicator of fertility preferences depends partly on whether responses about desired family size are exact or whether they instead represent some central tendency toward a large or small family but not an exact number. Freedman and Takeshita (1969) point out that a response to an attitudinal question may represent a central tendency in some acceptable range of alternative responses. For example, a woman may feel that three to five children is an acceptable family size, and she may be relatively indifferent as to which number she ultimately
has within that range. Which number she reports may be function of how she feels that day as opposed to it being the most desirable number.

**Samples and Methods Used in Our Analyses**

To examine the predictive capability of fertility preferences at the individual-level, we must limit our sample to those women from Round 2 of MFLS-1 who were reinterviewed in 1988 for MFLS-2, since only they have post-MFLS-1 fertility information. We further restrict the sample of women we consider to those whose 1977 fertility preferences are most relevant: those who at the Round 2 MFLS-1 interview in 1977 were currently married and reported that they were able to have children, did not report that they were pregnant, and answered the fertility preferences questions. These restrictions result in a sample of 650 women. When husbands are considered, we further restrict the sample to the 83 percent of these women whose husbands answered the fertility preference questions in MFLS-1.

Of the 650 women we consider, by 1988 (i.e., when MFLS-2 was fielded) 269 had completed their childbearing years either through menopause (232) or sterilization (37) and another 289 reported in 1988 they wanted no more children. Thus a large majority of the women (86 percent) in the sample considered here viewed themselves as finished with childbearing by 1988. This leaves only 92 women who could still bear children and who said they wanted more as of 1988; of those women, only 15 are potentially censored since they wanted more children in 1977 but had not had any additional children by 1988.

We first conduct bivariate analyses to assess how the two measures “want more children” and “desire more children than have” relate to subsequent fertility at both the aggregate and individual level. To see whether these measures have any predictive capability in the aggregate we compare the proportions of wives and husbands who said they wanted more children with the proportion of women who had a subsequent live birth. The remainder of our analyses uses the individual-level data. For both the women in our sample and their husbands, we investigate how well our two measures of fertility preferences in 1977, and the consistency between them, predict subsequent childbearing over the 12-year period between MFLS-1 and MFLS-2. We assess which of the two measures is the better predictor of subsequent fertility, whether predictive power is greater for husbands’ or wives’ preferences, and investigate the effect of spousal agreement (or disagreement) on whether more children are wanted. We also look at survival curves to see how these various measures of preferences are related to the timing of the next birth (if any). We then conduct multivariate analyses to investigate the factors that affect whether a woman meets her stated preference for having or not having more children, including the roles of spousal disagreement on fertility preferences and unexpected changes that occurred over the 1977-1988 period. More details on this are below.
BIVARIATE ANALYSES

We first consider currently married women and their husbands separately. This is followed by analyses of the joint responses of husbands and wives regarding preferences for more children.

MFLS-1 Currently Married Women

Aggregate-level comparisons: Table 1 shows the percentage of MFLS-1 women with positive responses to each of the fertility preference measures and the percentage who had a subsequent live birth between 1977 and 1988 (i.e., between Round 2 of MFLS-1 and MFLS-2). In the aggregate, the percentage of women who had at least one live birth between 1977 and 1988 (44.5 percent) is significantly greater than the percentage who in 1977 said that they wanted more children (38.9 percent). Other studies from Asian countries (Hermalin et al. 1979, De Silva 1991) using shorter time spans also found the percentage who subsequently have a live birth to be greater than the percentage of women who report wanting more children, while in the United States the reverse was found (Westoff and Ryder, 1977). Note that a lower percentage having a subsequent birth compared to the percentage saying that they want another child, as was found in the U.S., is the expected case if women haven’t had sufficient time to meet their goal of having another child. Our results suggest that, as Bongaarts (1990) noted, women may not have their whole reproductive histories in mind when answering whether they want more children.

Table 1


<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women Who Want More Children</td>
<td>38.9</td>
</tr>
<tr>
<td>Women Who Desire More Than Have</td>
<td>44.5</td>
</tr>
<tr>
<td>Women Who Had a Subsequent Live Birth</td>
<td>44.5</td>
</tr>
</tbody>
</table>

NOTE: Sample is reinterviewed MFLS-1 women who were currently married in 1977.
Using the "desires more than have" measure, we see that the percent of women whose desired family size exceeds the number of children they now have (44.5 percent) is the same as the percent having a subsequent birth. However, as seen below, when one looks below at which women are having the births based on responses to the "want more children" and "desires more than have" questions, the former appears to be a better predictor of subsequent fertility.

Individual-level Comparisons: Table 2 shows the percentage of women who had a live birth between 1977 and 1988 for each of these fertility preference measures (and their combination). We see that, contrary to the aggregate results above, the stated fertility preference of "wants more children" is the better predictor of a subsequent live birth than is the "desires more children than has" measure.

<table>
<thead>
<tr>
<th>&quot;Desires more than has&quot;</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Wants more children&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>69.0</td>
<td>57.5</td>
<td>67.2</td>
</tr>
<tr>
<td></td>
<td>(213)</td>
<td>(40)</td>
<td>(253)</td>
</tr>
<tr>
<td>No</td>
<td>36.8</td>
<td>28.3</td>
<td>30.0</td>
</tr>
<tr>
<td></td>
<td>(76)</td>
<td>(321)</td>
<td>(397)</td>
</tr>
<tr>
<td>Total</td>
<td>60.5</td>
<td>31.6</td>
<td>44.5</td>
</tr>
<tr>
<td></td>
<td>(289)</td>
<td>(361)</td>
<td>(650)</td>
</tr>
</tbody>
</table>

NOTE: Sample sizes for each cell are in parentheses. Sample is reinterviewed MFLS-1 women who were currently married in 1977.

Looking first at the marginals, we see that 67.2 percent of the women who said in 1977 that they wanted at least one more child had a live birth between 1977 and 1988 compared with 60.5 percent of the women whose stated desired family size exceeded their actual family size in 1977. The “did not want more” group and the “did not desire more than they had” group each have nearly the same incidence of subsequent births—30 percent and 31.6 percent respectively (difference not statistically significant).11

Consistency Between Preference Measures and Subsequent Fertility: Next we consider whether women who were consistent in reporting that they both wanted more children and desired more children than they had were more likely to have a birth than those whose responses were
inconsistent. Looking at the body of Table 2, we see that the group of women who reported both wanting more children and desiring more children than they had have a slightly higher percentage of subsequent births than the overall group who reported wanting more children—69 percent vs. 67.2 percent; this difference is not statistically significant. Likewise the women with the strongest preferences for no more children (i.e., those who reported neither wanting any more children nor desiring more children than they currently had) had a slightly lower incidence of subsequent births (28.3 percent) than either all those who “did not want more children” (30.0 percent) or all those whose desired family size did not exceed the number of children they already had (31.6 percent).

When a disagreement occurs, which happens for 18 percent of the women, the “wants more” measure appears to take precedence in predicting the incidence of a subsequent live birth. We see in Table 2 that women who said they did not want any additional children but reported a desired family size greater than their current one were much less likely (p=0.02) to have a subsequent birth (36.8 percent) than women whose 1977 family size met or exceeded their desired family size but who said they wanted more children (57.5 percent). Overall, then, women who are inconsistent in their responses to the two measures are less likely to have a subsequent birth than those who are consistent in both wanting more children and desiring more children than they have. However, women with inconsistent responses are still more likely to have a subsequent birth than women who are consistent in not wanting more children and desiring no more children than they currently have. In addition, we do not find any statistically significant differences in the probability of a birth during the 1977-1988 period between those desiring more children than they have and those not desiring more than they have for a given response to “wants more children.” On the other hand, the differences in the probability of a subsequent birth are significant between the two “wants more children” responses, both among those who desire more than they have and among those who do not desire more than they have.

The longitudinal data from Taiwan used by Hermalin et al. (1979) also considered both types of fertility preference measures. They, too, found somewhat better predictive power when using the “wants more children” measure compared with the “desire more than have” measure. The pattern seen in the Taiwan data is even stronger than that seen in our Malaysian data; Hermalin et al. found no additional effect of the “desires more than have” measure on the percentage with a subsequent birth for women who report wanting no more children.

MFLS-1 Husbands

Using the sample of MFLS-1 women whose husbands answered the fertility preference questions in 1977, a similar pattern emerges when looking at the husband’s fertility preferences in relation to the incidence of subsequent births. Table 3 shows the percentage of men whose wives had a live birth between 1977 and 1988 for each combination of the two fertility preference measures reported by the husbands. Again the “wants more children” measure performs better than
the “desires more than have” measure in predicting the incidence of subsequent births. Comparing Table 3 to Table 2, we see that, where responses are consistent, husbands’ wants/desires actually predict subsequent fertility somewhat better than the wives’. The incidence of a subsequent birth among couples where the husband both “wants” and “desires” more children (72.2 percent) is slightly higher than that seen in Table 2 when the wife both “wants” and “desires” more children (69 percent), and the incidence is slightly lower (26.7 percent vs. 28.3 percent) when both measures agree in not wanting more children.11 Neither of these differences is statistically significant.

Table 3

Percentage of Malaysian Husbands Whose Wives Had a Live Birth Between 1977-88, By the Husband’s Two Fertility Preference Measures

<table>
<thead>
<tr>
<th>“Wants more children”</th>
<th>“Desires more than have”</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>72.2</td>
<td>56.4</td>
</tr>
<tr>
<td>(187)</td>
<td>(39)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>35.4</td>
<td>26.7</td>
</tr>
<tr>
<td>(79)</td>
<td>(232)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61.3</td>
<td>31.0</td>
</tr>
<tr>
<td>(266)</td>
<td>(271)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Sample sizes for each cell are in parentheses. Sample is the subset of currently married women in 1977 who were reinterviewed in MFLS-2 and whose husbands answered both types of MFLS-1 fertility preference questions.

Agreement between Husbands and Wives

Because of the relatively stronger relationship for both women and men of subsequent fertility outcomes with “wants more children” than with “desires more than has,” we will use the former measure in our analysis of spousal agreement and subsequent fertility. Table 4 shows the percentage of couples with a subsequent live birth between 1977 and 1988 for the four combinations of wives’ and husbands’ 1977 responses to whether they wanted more children. The sample in Table 4 consists of reinterviewed woman whose MFLS-1 husband answered the “wants more” question.14 From the marginals, we can see that the overall percentages are very similar for wives and husbands, 68 percent of the women who said in 1977 that they wanted more children had at least one more child by 1980 compared to 69.6 percent for the women with husbands who wanted more children.
although this difference is not statistically different. Again the husbands’ preferences predict better than the wives’.

**Table 4**

Percentage of Malaysian Women with a Live Birth Between 1977 and 1988, by Wife’s and Husband’s Responses to Whether They Wanted More Children

<table>
<thead>
<tr>
<th>Wife Wants More Children</th>
<th>Husband Wants More Children</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>71.2</td>
</tr>
<tr>
<td></td>
<td>(170)</td>
<td>68.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>57.1</td>
</tr>
<tr>
<td></td>
<td>(49)</td>
<td>(219)</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>64.9</td>
</tr>
<tr>
<td></td>
<td>(57)</td>
<td>30.5</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>23.1</td>
</tr>
<tr>
<td></td>
<td>(268)</td>
<td>(325)</td>
</tr>
<tr>
<td>Total</td>
<td>Yes</td>
<td>69.6</td>
</tr>
<tr>
<td></td>
<td>(227)</td>
<td>45.6</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>28.4</td>
</tr>
<tr>
<td></td>
<td>(317)</td>
<td>(544)</td>
</tr>
</tbody>
</table>

NOTE: Sample sizes for each cell are in parentheses. Sample is MFLS-1 women currently married in 1977 who were reinterviewed in 1988 and whose husbands answered the MFLS-1 questions about whether they wanted more children.

The predictive power is highest when the husband and wife agree on whether they want more children. A higher incidence of a subsequent birth is seen for couples where spouses agree on wanting more children (71.2 percent) than when only one of the spouses wants more children (64.9 percent when only the husband wants more and 57.1 percent when only the wife wants more) or when only one spouse’s preferences are considered (69.6 percent for husbands and 68.0 percent for wives). Table 4 also suggests that when both spouses report that they do not want any additional children, the incidence of a subsequent live birth is much lower (23.1 percent) than if only one spouse’s answer is considered (30.5 percent for wives and 28.4 percent for husbands).

When the spouses’ preferences are considered together, it appears that the husband’s preferences exert a slightly greater influence. Most notably, among women who said they did not want more children but whose husbands did want more children, 64.9 percent of those women had a subsequent birth -- very nearly the same rate as among all women who said that they wanted more children. In addition, the percentage with a subsequent birth for couples where both want more children (71.2 percent) is not statistically different from those where only the husband wants more children (64.9 percent). Also noteworthy is that if either spouse wants more children, the couple is likely to have another child; the percentage with another birth is over 50 percent in all combinations.
where at least one spouse wants another child. When either spouse wants more children, that preference seems to dominate the other spouse’s preference for no more children.

Coombs and Chang (1981) found similar effects of spousal agreement on the number of births among Taiwanese couples during their four-year study period, 1970-1974. The mean number of births for couples who agreed they wanted no more children was 1/10 that of couples where both spouses wanted more children. Among couples that disagreed, the mean number of births fell between the means for couples who both wanted more children and couples where neither wanted more children. In those Taiwanese data, when spousal disagreements occurred, the wife’s preferences tended to win out; the mean number of births was nearly twice as high if only the woman wanted more children compared to when only the husband wanted more. To see if a similar pattern existed among Chinese Malaysian women, we looked at spousal agreement for that ethnic group separately. In results not presented in this paper, the MFLS data also suggest that the woman’s preferences have precedence over their husbands in Chinese households over the 1977-1988 period considered here.17

Relationship Between Preferences and the Timing of the Next Birth

Another way of looking at how well preferences relate to subsequent births is to see whether the timing of the next birth is affected. Do people who reported in 1977 that they wanted more children tend to have births sooner than those who said they did not want more children? Does the degree of spousal agreement affect the timing of the next birth? Figure 1 presents the survival curves showing the duration of time from the last live birth before the MFLS-1 interview date to next live birth or the time of the MFLS-2 interview; i.e., both open and closed intervals are included. The curves do indeed vary by fertility preferences. Couples wherein both spouses want another child have a subsequent child sooner within the time span covered than couples that disagree on preferences, and much sooner than when neither spouse wants another child.

Figure 1

Months to Next Live Birth From Last Live Birth Before the MFLS-1 Round 2 Interview,
NOTE: Sample is MFLS-1 women currently married in 1977 who were reinterviewed in 1988 whose husbands completed the MFLS-1 fertility preference questions. Survival curves produced by SAS® PROC LIFETEST. For the group where neither spouse wants another child, 76% of the intervals were open (i.e., censored).

Indeed 50 percent of the couples where both spouses wanted another child had a child within the first 48 months (median time) after their last birth before the 1977 interview, while 76 percent of the couples where neither spouse wanted another child had not had a subsequent birth by the end of 1988. For spousal disagreements, we see that here, too, the husband’s preferences appear to carry more weight in the timing of that next birth. When the husband is the only one who wants more children, the median time to the next birth is shorter (73.5 months) than when only the wife wants another child (112.5 months).¹⁸ A formal multivariate analysis of the timing of births would be needed to see if that relationship persists when other factors are controlled; this is beyond the scope of the current study.

MULTIVARIATE ANALYSES

In this section, we examine what affects fertility outcomes, given a stated preference for more children or for no more children. The analysis utilizes the entire sample of 650 women who were currently married, able to have children and not pregnant in 1977, and who were reinterviewed in 1988. The analysis splits the data into two separate subsamples based on the woman’s response regarding whether she wants more children. This allows the effects of all of the explanatory variables to differ between women who want more children and those who do not.¹⁹
Independent Variables for Multivariate Analysis

Our multivariate analysis controls for factors that may affect the woman’s ability to have more children and for factors that may cause subsequent changes in the preference for more children. The dependent variable is an indicator for whether the woman had a live birth in the period between 1977 and 1988; the equation is estimated using logistic regression.

The regressions control for various characteristics that may affect a woman’s ability to bear children either due to natural forces or to behavior. The probability of having a child generally decreases with a woman’s age beyond the late teens, due to growing infecundity and less frequent sexual activity; likewise women married to older men tend to have lower fertility. The number of living children, controlling for the woman’s age, may reflect some measure of the woman’s fecundity (in that she has a higher probability of conceiving and thus a greater potential for more births in her reproductive period) in addition to preferences for more children or to poor use of contraception. Women with higher education may be better able to control family size because they tend to be more effective users of contraception (Mamlouk, 1982; Rodriguez, 1979). Similarly, the higher the education of the husband, the more receptive he may be to effective contraceptive use.

The husband’s educational attainment, as a proxy of income, may also reflect the ability to afford more effective contraception methods. To control for these factors, we include the woman’s age and years of schooling in 1977, her spouse’s age and education in 1977, and the number of living children in 1977. To handle missing spouse information, we created two indicator variables: one for the 29 husbands not residing in the household in 1977 and one for the 84 husbands who did not complete the fertility preference questions. For the non-resident spouses, spouse characteristics and fertility preferences were set to zero; for the resident husbands who did not answer the fertility preference questions, all their preference measures are set to zero.

In Malaysia, fertility rates vary by ethnicity. During our period of study, 1977 to 1988, Malay women had higher fertility rates than Chinese or Indian women, and Malay fertility rates did not fall while those for Chinese and Indian women did. Because of the small sample of Indians and because both Chinese and Indian women have lower fertility than Malay women, we use an indicator for “non-Malay” instead of separate indicators for Chinese and Indian ethnicity.

The gender composition of current children affects the likelihood of wanting any additional children, and it may affect the strength of intentions (Cleland et al., 1983). If a woman says she wants more children, but has already achieved her desired number of sons and daughters, she may not be as active in trying to have more children. We include in our specification an indicator for whether by 1977 the woman had at least the number of sons and the number of daughters she desired.

We also consider how other life events over the subsequent 12-year period -- marital status changes, child deaths, residence changes, early menopause -- affect the predictive capability of fertility preference measures by changing, perhaps in unexpected ways, the environment in which the fertility intentions were originally formed:
• A change in marital status after 1977 might well affect a woman’s fertility preferences in addition to her ability to have more children. In our sample in 1988, 83.5 percent of the reinterviewed women who were married in 1977 were married to the same husband as in 1977. 7 percent were married to a new husband, 9 percent were widowed, and 0.5 percent were divorced or separated. To account for marital change, we include an indicator for whether the woman experienced divorce or became widowed between 1977 and 1988.26

• The subsequent death of a child who was alive in 1977 might change a woman’s decision to follow through with previously stated intentions, particularly if her intentions were based on her 1977 family size. Between the MFLS-1 and MFLS-2 interviews, 41 women in our sample experienced a death of a child who was alive in 1977. We include in our specification an indicator for whether a child living in at the time of the 1977 interview later died by the time of the MFLS-2 interview.

• A change in residence from rural to urban or vice versa may alter fertility preferences as women may be affected by a change in family size norms or in the costs of children due to price differences between rural and urban environments. Higher wages and higher housing costs in more developed areas may result in a lower demand for children as they become more expensive relative to other goods the family may desire (Mincer, 1963; Becker, 1960; Willis, 1974). Because we expect urban residence and changes to urban residence may have the more pronounced effect, we include indicators for whether the woman resided in an urban area in both 1977 and 1988 and for whether the woman resided in a rural area in 1977 but in an urban area by 1988.

• An earlier than expected arrival of menopause might prevent a woman from achieving her reproductive goals. We include an indicator for whether the woman experienced menopause at or before age 45.

The husband’s desires for more children may also affect the woman’s ability to follow through with her fertility preferences. We include a simple indicator for whether the husband reported wanting more children, since the data are already split by the wives’ preferences.27 In addition, we include an indicator for cases where the husband did not complete the fertility preference questions.

Table 5 presents the means for the regression variables separately for women who in 1977 reported they wanted more children and for those who did not want more children. The last column in the table indicates whether these differences in the means between the two samples are statistically significant. The differences between the two samples illustrate the selected nature of each sample. Relative to women who said in MFLS-1 that they wanted more children, women who said in MFLS-1 that they did not want additional children are, on average, older, less educated (largely due to their being older and hence growing up when educational opportunities were very limited for Malaysian women), and are more likely to be non-Malay (i.e., Chinese or Indian); they have older and less educated husbands who are much less likely to want more children, and they are less likely to be still married to the 1977 husband. Compared to those who said that they wanted more children, women who said in 1977 that they did not want more children had more than twice as many children by 1977, were far more likely to have achieved their desired numbers of sons and
daughters by 1977, and also were more likely to experience a child death (probably because they had more children). All of the differences just mentioned are statistically significant at the 0.10 level or better. There are no significant differences between the two samples in early menopause and urban residence.

Table 5
Means of Regression Variables for Women Who Wanted Children in 1977 and for Those Who Wanted No More Children

<table>
<thead>
<tr>
<th>Variable Description</th>
<th>“Wanted more children”</th>
<th>“Didn’t want more children”</th>
<th>Means Signif. Different</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had a live birth 1977-1988</td>
<td>0.67</td>
<td>0.30</td>
<td>***</td>
</tr>
<tr>
<td><strong>Status in 1977 (Round 2 of MFLS-1)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman’s age</td>
<td>29.9</td>
<td>37.5</td>
<td>***</td>
</tr>
<tr>
<td>Husband’s age</td>
<td>35.5</td>
<td>43.5</td>
<td>***</td>
</tr>
<tr>
<td>Woman’s years of schooling</td>
<td>4.33</td>
<td>2.60</td>
<td>***</td>
</tr>
<tr>
<td>Husband’s years of schooling</td>
<td>5.7</td>
<td>4.8</td>
<td>***</td>
</tr>
<tr>
<td>Non-Malay (D)</td>
<td>0.26</td>
<td>0.52</td>
<td>***</td>
</tr>
<tr>
<td>Number living children</td>
<td>2.54</td>
<td>5.60</td>
<td>***</td>
</tr>
<tr>
<td>Has desired numbers of both sons and daughters</td>
<td>0.07</td>
<td>0.63</td>
<td>***</td>
</tr>
<tr>
<td>Husband not present (D)</td>
<td>0.02</td>
<td>0.06</td>
<td>***</td>
</tr>
<tr>
<td><strong>Changes between 1977-1988</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No longer married to 1977 spouse (D)</td>
<td>0.10</td>
<td>0.13</td>
<td>*</td>
</tr>
<tr>
<td>Child alive in 1977 later died (D)</td>
<td>0.04</td>
<td>0.08</td>
<td>**</td>
</tr>
<tr>
<td>Age at menopause &lt;=45 (D)</td>
<td>0.06</td>
<td>0.08</td>
<td>-</td>
</tr>
<tr>
<td>In urban area in 1977 and 1988 (D)</td>
<td>0.23</td>
<td>0.28</td>
<td>-</td>
</tr>
<tr>
<td>Moved to an urban area by 1988 (D)</td>
<td>0.10</td>
<td>0.12</td>
<td>-</td>
</tr>
<tr>
<td><strong>Fertility Preference Measures: 1977</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband wants more children (D)</td>
<td>0.78</td>
<td>0.18</td>
<td>***</td>
</tr>
<tr>
<td>Husband has no preference data (D)</td>
<td>0.12</td>
<td>0.13</td>
<td>-</td>
</tr>
<tr>
<td><strong>Sample Size</strong></td>
<td>253</td>
<td>397</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: (D) : Dichotomous variable. Significance levels for two-tailed test of difference in means: *** : P<0.01; ** : P<0.05; * : P<0.10; - : not significant at 10-percent level.
Results of the Multivariate Analysis

Table 6 presents the results of the logistic regressions run separately on the “wanted more” and “didn’t want more” subsamples of women. The final column of the table shows the results of t-tests for whether the coefficient for a given variable differs significantly between the two subsamples.28

The overall explanatory power is greater and more variables are significant in explaining who had a live birth between 1977 and 1988 for the sample of women who said in 1977 that they did not want any more children. Among women who wanted more children, it appears that very few of the factors considered here affect their likelihood of having another child. For both samples, the likelihood of having a live birth between 1977 and 1988 is largely affected by those characteristics that naturally limit childbearing, such as increasing age of the woman and her husband or a non-present spouse.29 As expected, older women and women with older husbands were less likely to have another birth, and these effects are statistically significant for both subsamples.30 The age effects do not differ significantly between the two samples.
Table 6

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wanted more children</th>
<th>Didn’t want more children</th>
<th>Coeffs</th>
<th>Signif. Different</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status in 1977 (Round 2 of MFLS-1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman’s age</td>
<td>-0.219***</td>
<td>-0.259***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Husband’s age</td>
<td>-0.078**</td>
<td>-0.105***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Woman’s years of schooling</td>
<td>0.087</td>
<td>-0.159**</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Husband’s years of schooling</td>
<td>-0.132**</td>
<td>-0.057</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Number living children</td>
<td>0.396***</td>
<td>0.230***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Has desired numbers of both sons and daughters</td>
<td>-1.165*</td>
<td>-0.442</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Non-Malay</td>
<td>-0.148</td>
<td>-1.360***</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Husband not present</td>
<td>-4.445***</td>
<td>-3.913***</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td><strong>Changes between 1977-1988</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No longer married to 1977 spouse</td>
<td>-1.058*</td>
<td>0.967</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Child alive in 1977 later died</td>
<td>-0.955</td>
<td>1.458***</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Age at menopause &lt;=45</td>
<td>-1.139</td>
<td>0.382</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Stayed in an urban area</td>
<td>-0.244</td>
<td>-0.641*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Moved into an urban area</td>
<td>-0.287</td>
<td>-1.095**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Husband’s Preference in 1977</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband wants more children</td>
<td>-0.050</td>
<td>1.17***</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td><strong>Intercept</strong></td>
<td>10.20***</td>
<td>12.98***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2 Log Likelihood</td>
<td>131.50***</td>
<td>211.33***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Size</td>
<td>253</td>
<td>397</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Significance levels for two-tailed test: ***: P<0.01; **: P<0.05; *: P<0.10; -: not significant at 10-percent level

Among women not wanting more children, more educated women have a lower likelihood of a subsequent birth and thus have less unwanted fertility; this effect is statistically significant and is significantly different from that in the “wanted more” subsample. This strong negative effect may reflect greater and more effective contraceptive use by educated women. It may also reflect the higher value of the time of educated women, which in turn raises the opportunity cost of an additional
child (and the "costs" of an unintended child). A significant negative effect for woman’s education among women wanting no more children was also found by Westoff and Ryder (1977) for the U.S. and by Hermalin et al. (1979) for Taiwan. In those studies as in ours, the woman’s education has a limited effect on subsequent fertility among those who wanted more children. We do not find a significant effect of husbands’ education for the group that does not want more children.

Among women who stated a preference for more children, we find that women’s years of schooling has no significant effect on the likelihood of a subsequent birth, but we estimate a significant negative effect of husband’s education level for this subsample. It could be that educated men are more likely to change their minds about wanting more children in response to increasing costs of children due to economic development (e.g., they increase the level of schooling that they would like their children to receive) and that they are better able to achieve those new preferences through contraceptive use. It is puzzling, however, that we don’t see this for women as well, even when the husband’s education is omitted from the specification.

In both subsamples, women with a greater number of living children in 1977 were more likely to have a subsequent birth, suggesting that a large number of children (when the woman’s age is controlled) may be an indicator of greater fecundity and/or a tendency to use little or no contraception. The coefficients estimated for number of children do not differ significantly between the two subsamples. Among women who wanted no more children, De Silva (1991) and Foreit and Suh (1980) also found positive effects of family size in Sri Lankan and Korean data, respectively. Other studies not using multivariate techniques have tended to find that the percentage of women having a subsequent birth fell with parity, but we believe those results were largely picking up the effect of the woman’s age -- older women tend to have had more children -- which is controlled here.

Women who said in 1977 that they wanted more children but had already achieved their desired numbers of both sons and daughters by then were less likely to have another child than those who hadn’t yet achieve their desired gender composition. The gender-composition variable has no significant effect for the sample that did not want more children.

Among women who in 1977 expressed a preference for no more children, Malay women were much more likely to have a subsequent birth; the Malay/non-Malay difference is much larger in the “wants no more” subsample and is significantly different from the ethnic difference in the “wants more” subsample, which shows no significant difference between Malays and non-Malays. This is in keeping with the continued higher level of fertility among Malay women mentioned earlier. It may reflect the greater response of Malay women to the New Population Policy (NPP) instituted in 1982-1984 (see Govindasamy and DaVanzo, 1992); as part of a program to increase the Malaysian population toward a goal of 70 million by the year 2100, the NPP provides economic incentives to increase family size. Although the incentives applied regardless of ethnic origin, Malays showed the greatest response to them (Govindasamy and DaVanzo, 1992). It appears from our results that the policy may have led some Malays who in 1977 did not want more children to change their minds.
For women who want more children, marital status change (i.e., the woman is no longer married to the MFLS-1 husband) has a significant effect (albeit weak, at the 10-percent level), and it has the expected negative sign. This variable does not have a significant effect for women who did not want more children. The change variables in this analysis only signify that a change occurred by 1988 and are not specifically related to the timing of births. Thus the lack of significance for many of the change variables may reflect the fact that most next births occurred shortly after 1977, giving little time for these types of changes to occur and affect fertility decisions (see Figure 1). If the woman’s 1977 spouse was not present in the household in 1977, the likelihood of an additional birth by 1988 is strongly reduced, although the effect is slightly smaller than in the “wants more” subsample (and the difference is statistically significant).

The death of a child greatly increases the likelihood of another birth among women who said in 1977 that they did not want more children. The coefficient for this variable is significantly different from that in the “wanted more children” sample, where this variable does not have a significant effect. Whether this is truly child replacement cannot be determined here since the current specification does not restrict the timing of the child’s death to the period before the next birth.

Early menopause has no significant influence on the likelihood of a subsequent live birth for either sample.

Staying in or moving to an urban area by 1988 reduces the likelihood of a birth between 1977 and 1988 for both subsamples, but only significantly so for those who do not want more children. The coefficients do not differ significantly between the two subsamples. The lower likelihood of a subsequent birth for those in urban areas in 1988 may reflect the potentially higher cost of children in urban areas, which may reduce demand for children, and the better access to contraceptive services in urban versus rural areas.

Women who said in 1977 that they did not want more children were significantly more likely to have a birth by 1988 if, in 1977, their husbands said they wanted more children. This is consistent with what we saw earlier, in Table 4, where women who do not want more children but whose spouses disagree are much more likely to have a subsequent live birth. Alternatively stated, couples where neither the husband nor the wife says they want another child are very unlikely to have another child. Among women who said they want more children, their husband’s preferences do not have a significant affect on the likelihood of a subsequent birth. The first row of Table 4 suggested that husband’s preferences affect the fertility outcomes of women who want more children; indeed, when only the husband’s “wants more” preference measure is included in the regression, the effect is positive and significant (at P<.05 level of significance). However, once the other covariates are added, the husband’s preferences no longer play a significant role.

SUMMARY AND CONCLUSIONS

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In comparing the two fertility preference measures -- wants more children and desired family size exceeds current family size -- we find that, at the individual level, for both women and men, the “wants more” fertility preference measure is more strongly related to the incidence of a subsequent birth than the “desires more than has” measure, though, at the aggregate level, the latter is more closely related to the percentage of women who had a birth. For both measures, predictive power at the individual level is stronger for husbands than for wives. In addition, individuals with consistent preferences (i.e., the person’s “wants more” and “desires more than has” responses agree) are more likely to achieve or realize those preferences than those with inconsistent responses to those two preference measures. These results are consistent with Westoff and Ryder’s (1977) finding that women who were more “certain” about their fertility intentions were more likely to fulfill those intentions. Indeed our results and those of Hermalin et al. (1979) find that, as a group, women who are consistent in their responses to wanting more children and desiring more children than they have have subsequent fertility outcomes more in line with their preferences. Where preferences are inconsistent, we find that the “wants more” measure is a better predictor than the “desires more than has” measure.

The weaker performance of the “desires more than have” preference measure relative to the “wants more children” measure may reflect the facts that: 1) hypothetical questions may be more prone to respondent confusion, and 2) reported desired family size may be drawn from a range of equally-valued family sizes. Education and culture may affect how well an individual processes a hypothetical question such as “if you could start over again, what would you do?”

In the case of desired family size, if the woman has a range of family sizes over which she is indifferent that overlaps her current number of living children, then the resulting “desires more than have” indicator created by comparing current to desired family size may over- or understate the respondent’s fertility preference depending on the degree of overlap.

The use of joint responses of wives and husbands to the “wants more” measure provides more information than when only the woman’s preferences are considered, and somewhat more information than when only the husband’s preferences are considered. Wives and husbands who are consistent with each other on the “wants more” measure (either both “yes” or both “no”) are more likely to achieve their preferences, more so than when each individual spouse’s preferences are considered in isolation. When couples disagree, it appears that the husbands’ preferences win out more strongly when he wants more children. It is important to note, however, that the majority of couples agree on their fertility goals: 80.5 percent for the “wants more” measure and 82.1 percent for the “desire more than has” measure (Peterson and Reichman, 1997).

Though spousal agreement improves the predictive capability of the “wants more” measure, many couples who agree still don’t realize their 1977 preferences by 1988. While these “failure” rates are lower than looking at the woman’s preferences alone, they are only 10 to 30 percent lower, suggesting that inclusion of the husband’s preferences will improve estimates of future fertility but
there are still other factors playing a role in keeping a woman’s subsequent fertility outcomes from coinciding with her fertility preferences.

Using a multivariate analysis, we found that the observed relationship between preferences and outcomes is not completely due to those wanting more children having characteristics that tend to lead to more births or to those not wanting more children having characteristics that lead to fewer births. That effect remains whether just the woman’s preferences are considered or the combination of both spouses preferences is considered.

However, there are still women who say they want more children and subsequently don’t have another child, and others who don’t want more children but who do have more children. Several factors, including spousal disagreements on fertility preferences, come into play to explain these inconsistencies between desires and outcomes. Women who say they want more children are likely to have a subsequent birth regardless of other factors, including her husband’s preferences, except for those that biologically limit fecundity (age) and the risk of pregnancy (an absent spouse). Only women with a more educated husbands or who have already attained their desired numbers of sons and daughters prior to the 1977 interview were significantly less likely to have another child despite their stated preference for more children. Among women who say they don’t want more children, their education, ethnicity, and parity strongly affect the likelihood of a subsequent birth: women with lower education levels, women who are ethnic Malays, and women with more living children at the 1977 interview are more likely to have a subsequent birth. Spousal preferences are also very important. If the husband disagrees with the wife’s fertility preference and says that he would like another child, she is much more likely to have an “unintended” birth. The subsequent death of a child alive at the time of the 1977 interview, and, to a lesser extent, rural residency in 1988 increased the likelihood of another birth for women who said in 1977 that they did not want more children.

Among women who say that they do not want to have another child, the characteristics that lead to a higher likelihood of failure (i.e., having another child despite the stated preference for not doing so) are similar to those that distinguish women with an unmet need for contraceptive services. Westoff and Pebley (1981), using aggregate-level WFS data, found the prevalence of unmet need was highest among women in their 30s, women who already have several children, women living in rural areas, and women who were illiterate or poorly educated. The Westoff-Pemble study included the 1974 Malaysia WFS data, and the above relationships were quite evident in those data on Malaysia even in their bivariate analysis. Our results suggest that along with these measures, information on the husband’s preferences may help improve estimates the extent of unmet need, and help identify couples who may need additional counseling on contraceptive methods.

Fertility preference data provide useful information that helps predict whether a couple has more children, especially if collected for both husbands and wives. If both spouses say they do not want more children, the couple is very unlikely to have another birth; when spousal disagreement occurs, the husband’s preferences may hold greater sway, especially when the husband wants more
children and the wife does not. At the individual level, information on whether the respondents want more children appears to be more useful than information on desired family size. The “wants more children” measure by itself is a better predictor than “desires more than has,” and should always be collected.
REFERENCES


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* This paper was prepared under NICHD Grant No. P01 HD28372. It draws on a working paper (Peterson and Reichman, 1997) that contains additional information referred to herein. The paper has benefited from the insightful comments of Norman Ryder and John Casterline.

†For a description of the MFLS-1 survey and its contents, see Butz et al., 1978; Jones and Spoolstra, 1978; and Fain and Tan, 1982.
For a description of the MFLS-2 survey and response rates, see Haaga et al., 1993; DaVanzo et al., 1993; and Peterson et al., 1993. The MFLS-2 also interviewed a sample of the adult children of the MFLS-1 respondents, a new sample of women of reproductive age, and a sample of older Malaysians. The analyses in this paper only consider the reinterviewed MFLS-1, or Panel, respondents.

Of the original 1,262 MFLS-1 Round 1 respondents, 889 were successfully reinterviewed (72 percent of the eligible respondents). Attrition between the MFLS-1 and MFLS-2 surveys was not random. Women who hadn’t moved or hadn’t moved far were more likely to be found and reinterviewed in MFLS-2. Compared to those not reinterviewed, reinterviewed women are more likely to be older, from rural areas, and Malay rather than Chinese or Indian. See Haaga et al. (1994) for a more detailed discussion of sample attrition between MFLS-1 and MLFS-2. Thus the sample of reinterviewed women is no longer representative of their original cohort. We can attempt to adjust for age and ethnicity differences, but a major concern is whether the fertility preferences are affected by selection bias—for example, were women who said they wanted no more children more likely to be found? To check for this, we compared the 1977 fertility preferences of those women not reinterviewed in MFLS-2 to those for the women who were reinterviewed. We found the percentage wanting more children and the percentage who had a desired family size greater than their number of children in 1977 for the former group to be identical to those for the latter group, which is the sample used in this paper. In addition, the degree of agreement between the two fertility preference measures for the interviewed sample was very similar to that for the full sample of MFLS-1 currently married women. Hence, it appears that attrition is not correlated with fertility preferences.

Respondents gave the number of boys and the number of girls, and the interviewer then added them to get the total number. A few respondents did not have a gender preference and only gave the total number desired. Only a couple of respondents could not give a number at all. Thus the MFLS-1 data do not face the problem of substantial nonresponse that has been experienced in other developing country surveys that asked women to give a number of desired children. See Riley et al., 1993, for an analysis of nonresponse in Costa Rica.

Women who were pregnant at the 1977 Round 2 interview were dropped because it was not clear from the wording the intentions questions whether such women were to include or exclude the child with whom they were pregnant.

Of the original 1,216 Round 2 MFLS-1 women, 897 women met the above restrictions. Thus, the 650 women in MFLS-2 represent 72 percent (650/897) of the possible MFLS-1 respondents -- the same percentage as the overall re-interview rate.

Of the 113 husbands with no fertility preferences data, 29 were not living in the woman’s household (i.e., they were not listed in the household roster) and 84 did not complete or did not
respond to MF8, the Male Attitudes and Expectations questionnaire. The latter tended to be husbands who worked away from home or whose work schedule made it difficult for them to schedule and keep an interview appointment.

8 Other measures of desired fertility that have been collected include when the next child is wanted (desired spacing) or whether a previously born child (or current pregnancy) was wanted or planned. The latter measure may be subject to the problem that after a child is born it may become “wanted” as the result of the woman’s rationalization of her fertility behavior (Knodel and Prachuabmoh, 1973; Westoff, 1990; Bongaarts, 1990). This problem of post-hoc rationalization may also characterize the “if you began over again” measure of total desired fertility that we consider here.

8Studies using shorter time spans found less discrepancy between the proportions who want more children and those having a birth during the time span. Women in those studies, on average, were not near the end of their childbearing years by the end of the study period, as many of the women in our study were. If we restrict our time span to seven years, as in the 1967-1974 Taiwan data in Hermalin et al. (1979), our Malaysia data shows a difference similar to that observed in the Taiwan data: the proportion with a subsequent live birth during the period is higher than the proportion "wanting more children." De Silva (1991), who considered a 3-year time period in Sri Lanka (1982-85), also found a similar difference. However, if we restrict our time period to three years (1977 to 1980), we find that, on average, fewer of the currently married women had a live birth in those three years (36.2 percent) than reported wanting another birth at the beginning of the period (38.9 percent).

10Among women who had a subsequent birth, more than half had more than one subsequent birth. Among those who wanted more children and had another birth, 31 percent had just one more child, 27 percent had two more, 21 percent had three more, and 21 percent had four or more (the maximum was six). Among those who said in 1977 that they did not want more children but who had another birth by 1988, 53 percent had just one more child, 27 percent had two more, 11 percent had three more, and 9 percent had four or more (the maximum was six).

11Other studies using shorter time spans have found similar patterns. Using the "want more children" measure, De Silva (1991) found a 35 percent incidence of live births over the next three years in Sri Lanka among those who said they wanted no more children at the start of the period. Nair and Chow (1980), with a sample of women in their prime childbearing years (age 20-29) and a three-year time span (1974-77) in Taiwan, found 31 percent of the "wants no more" group had a birth by the end of the period. In the MFLS data, 24 percent of those who wanted no more children had a subsequent birth within three years after the MFLS-1 interview. This suggests that the majority of the “unwanted” childbearing occurred fairly soon after the MFLS-1 interview and was not largely the result of unexpected events or changes in plans that occurred much later. Hermalin et
al. (1979) found that 22 percent of those not wanting more children in 1967 in Taiwan had a live birth during the next seven years. In our data, among women who said in 1977 that they wanted no more children, 28 percent had a live birth during the next seven years after the initial interview.

For an analysis of the internal consistency between the “wants more children than have” and “desires more children than have” preference measures and between husbands’ and wives’ preferences, see Peterson and Reichman (1997).

The conclusion of a greater predictive power for husbands’ than wives’ preferences is not due to differences in the samples used in Tables 2 and 3. Using just those women whose husbands also answered the fertility preference questions in 1977, the results are very similar to those in Table 2, with minor changes in the off-diagonals where the incidence of subsequent births was slightly higher (40.3% vs. 36.8% when the woman only “desires more children” and 63.6% vs. 57.5% when she only “wants more children”).

The pattern shown in Table 3 still holds for the sample of men still married in 1988 to the same woman as in 1977 (n=471). In this sample the percentages of women having a birth between 1977 and 1988 are slightly higher for all categories, presumably because a husband was present for the entire period. While it may appear that this is the more appropriate sample, we use the larger sample that includes husbands from post-1977 marriages so that in the multivariate analysis we can look at the effect of marital status change.

Seven husbands did not answer the “desires more” question but did answer the “wants more” question, thus the difference between the 544 couples in Table 4 and the 537 couples in Table 3.

Tan and Tey (1994), using data from the 1984 Malaysian Population and Family Survey (MPFS) matched to 1985-1987 birth records, also found that subsequent fertility, in their case over a three-year period, was better explained by considering both the woman’s and husband’s intentions regarding a child in the next three years than by the woman’s alone, although it was not as strong an effect as we see in our data over a longer period. The 1984 MPFS, however, did not ask husbands directly about their fertility preferences as was done in MFLS-1; women were asked to report their husbands’ preferences, which may explain the smaller effect if women tended to project their own preferences when reporting their husbands’. In our sample of 544 couples from the 1977 MFLS-1, 80 percent were in agreement; in the 1984 MPFS sample of 3884 women used by Tan and Tey, the agreement level was 87 percent.

Again, if the sample is restricted to just those women whose husbands are still present in 1988, the same pattern exists and all percentages are slightly higher.

Those results are based on a multivariate analysis run separately by ethnic group that look at the incidence of a next birth among women who reported they did not want another child. In that analysis, among Chinese women, whether her spouse wanted another child had no significant effect on her likelihood of a next birth; among Malay women, however, the husband’s preference for more
children had a positive and strong significant effect. Repeating Table 2 just for Chinese couples resulted in too few couples in the off-diagonal cells to make any clear-cut statements based on the tabular results. The greater influence of wives’ preferences for the Chinese compared with Malays is surprising because it is typically asserted that Chinese families are more patriarchal than Malays (e.g., see Chan and DaVanzo, 1996).

The patterns exhibited in Figure 1 are similar to those seen by Thomson, McDonald, and Bumpass (1990), who looked at the effect of spousal agreement regarding fertility preferences on the timing of the third birth in the U.S. (Their sample contained only couples with two children at the beginning of the 1957-60 period.) They found that the time to the next birth was shortest for couples where both wanted more children and longest for couples where both said they wanted no more children. For couples that disagreed, the time to next birth was between the two extremes but it was the same whether it was the wife or the husband who wanted another child.

We also conducted an analysis that pooled the two subsamples but did not allow the effects of explanatory variables to differ, to see whether wanting more children has an independent effect once differences between the two samples in explanatory variables are controlled. These results, which can be seen in Peterson and Reichman (1997), show that fertility preferences at the beginning of the period continue to exhibit an effect on the likelihood of a subsequent birth even when key factors such as ethnicity, ages and education of the husband and wife, existing number of children, and presence of spouse at the beginning of the interval are controlled.

For a comprehensive overview of natural fertility studies, see Knodel (1983).

These variables are all entered linearly. Non-linear specifications were tried but did not work as well as the simple linear versions. We also tried including measures of household income in 1977 but these never had statistically significant effects.

The TFR for Malays was 4.6 in 1975 and 4.7 in 1986; for Chinese women, the TFR fell from 3.6 in 1975 to 2.4 in 1986; and among Indian women it fell from 3.9 to 3.0 between 1975 and 1986 (Department of Statistics Malaysia, 1986).

The handful of households with ethnicity other than Malay, Chinese, or Indian are included in the “Malay” (or reference) group.

We tried a number of different specifications for gender preference, such as indicators for “only has girls” or “only has boys,” “more boys than girls,” “more girls than boys,” etc., as well as the current number of sons and daughters. None of them had significant explanatory power. For an analysis of the effects of gender composition of children on fertility using these data, see Pong (1994).

We recognize that some of these events may be jointly determined with fertility preferences. For example, those who want no more children may be more predisposed to getting a divorce in a bad marriage than those who want more children; those who want more children may be predisposed
not to move from a low-cost area (e.g., rural) to a high-cost area. However, we do not believe that fertility preferences are necessarily a driving factor in most marriage or migration decisions, relative to other socioeconomic and psychological factors.

26 Separate indicators for each type of marital status change were tried as well, but their effects did not differ significantly from one another.

27 We tried the woman’s and the husband’s “desires more than have” measures and tried various measures for the inconsistency between “wants more” and “desires more than have.” None of these worked as well as variables based on the “wants more” preference measure alone.

28 To test for differences in coefficients between the two subsamples, we ran the regression specification on the pooled sample of women (those who wanted more and those who did not) that included interactions of all explanatory variables with the indicator for “wants more children.” The t-statistic on a given interaction tells whether the coefficient of that variable differs significantly between the two subsamples.

29 Using non-multivariate methods, both Westoff and Ryder (1977) with U.S. data and Hermalin et al. (1979) with data from Taiwan found similar results for the sample of women who report that they “want more children.” Westoff and Ryder (1977), with data covering a five-year span, found little meaningful variation in the likelihood of another birth with respect of socioeconomic variables. Likewise, with a seven-year span, Hermalin et al. (1979) found no significant effects for education, income, employment status, and wealth (as measured by number of durables owned) for this group.

30 The significant negative effect of the woman’s age on the likelihood of a subsequent birth is consistent with that found in other studies of fertility (e.g., Westoff and Ryder, 1977; Hermalin et al., 1979; Nair and Chow, 1979; De Silva, 1991).

31 In our data, the proportion of men wanting more children generally increases with education, even when age is controlled. However, the effect of husband’s education level does not change if his fertility preferences are excluded from the equation, and the lack of a significant fertility preference effect does not change if his education is dropped from the specification.

32 Among women who wanted more children and who had a subsequent birth by 1988, 70 percent of the next births after mid-1977 occurred by the end of 1979. (Among those who did not want more children but had one by 1988, 64 percent of the next births occurred by the end of 1979.)

33 In all but two of the cases where the husband was not present in 1977, the woman was still married to that husband in 1988. The large coefficient is due to the small number of cases where husbands are absent in 1977.

34 The analysis presented in Peterson and Reichman (1997) of the internal consistency between the two measures shows that women with more education indeed had less disagreement between the two measures.
A recent study, for Bangladesh, has shown that fertility preference data also help explain abortion behavior (Rahman, DaVanzo, and Razzaque, 2001).