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**Fertility Preferences in Guyana,  
Jamaica and Trinidad and Tobago,  
from World Fertility Survey,  
1975-77: A Multiple Indicator  
Approach**

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# Preface

The policy of WFS is to encourage and to support, where possible, further detailed analysis of the survey data following the publication of the First Country Report. The national meetings, as in the case of other participating countries, held in the three English-speaking Caribbean countries – Guyana, Jamaica and Trinidad and Tobago – and the two regional seminars provided the forum for identifying the topics and for preparing project proposals for such analyses. After a careful review of the proposals, the countries approved the choice of five topics: contraception, infant and child mortality, union patterns and fertility, fertility preferences and socio-economic differentials in fertility. It was also decided that work on the first three topics would be undertaken by experienced researchers in the region while the last two would be done by the two Caribbean nationals working with WFS. The programme was supported by WFS through the funds made available for second-stage analysis.

With the emphasis on country-specific analysis, the Caribbean programme was expected to produce an analytical report on each of the five topics for each of the three countries, which would have resulted in fifteen national reports. However, in view of the similarity of the questionnaires used in the three countries, it was decided to organize the research in such a way that each researcher would carry out the analysis of all three countries, using similar or the same methodology and to publish one single report on each topic. This approach also had the advantage of allowing comparisons within a single report, for a given topic, and indeed the authors were requested to prepare a short comparative chapter in addition to the main chapters on individual countries.

All the papers have gone through two stages of review and revision. The first stage was a regional seminar, held at

the University of the West Indies, St Augustine, Trinidad, in September 1982, where representatives from each country were invited, and the papers were presented. External reviewers commented on each paper: contraception (Halvor Gille), union patterns (Yves Charbit and Basia Beckles), infant and child mortality (Richard Lobdell), fertility preferences (Michael Vlassoff) and socio-economic differentials in fertility (Barbara Boland). The papers were revised following these reviewers' suggestions, and the second stage was to have a further evaluation of the revised draft reports, mainly done by assigned WFS staff members, but in two cases by external reviewers. A final version, in all cases involving substantial rewriting and condensation, then followed.

This report, prepared by a WFS staff member, Robert Lightbourne, benefited from comments by the assigned reviewers, Michael Vlassoff and John Cleland. Comments by participants at the regional seminar were also taken into consideration.

I also wish to congratulate Robert Lightbourne who volunteered to undertake this study along with his numerous other duties at WFS: this analysis had a distinct advantage in being executed by a specialist in the area of fertility preference data. We hope that the report, along with the other four, will provide valuable insights, leading to better understanding of the demographic situation in the three countries and that it will be of use to the national policy-makers. In conclusion, I wish to thank the national survey directors and their staff for their continued support and most valuable collaboration.

HALVOR GILLE  
Project Director



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The author owes particular gratitude to John Cleland of WFS for his encouragement, comments and suggestions throughout this project and for his close reading of the draft, to Susheela Singh for reorganizing the manuscript in its current form, and to Pat Alderman for her careful and meticulous editing.

# 1 Introduction

This monograph, part of the World Fertility Survey (WFS) second-stage analysis programme, closely examines the reproductive desires reported by respondents in WFS surveys of Guyana (1975), Jamaica (1975-76) and Trinidad and Tobago (1977). The analysis particularly emphasizes policy relevance and is much more detailed than was possible in the Country Reports. This report is one of five second-stage analyses of the Guyana, Jamaica and Trinidad and Tobago surveys; the other four analyses include contraceptive use by Abdullah and Harewood, child mortality by Ebanks, union status by Harewood and fertility differentials by Singh.

## 1.1 OBJECTIVES AND ORGANIZATION OF THE REPORT

The surveys asked questions on total number of children desired, whether more children were wanted, whether the last birth was wanted and preferred sex of the next child. This permits construction of a large number of indicators of reproductive motivation. Because of the problems of reliability, validity and meaning associated with fertility preference data, this report considers the data from a wide variety of angles in an effort to avoid overly simplistic interpretation.

Many analyses of reproductive preferences focus exclusively on preferences without explicitly linking current fertility motives with current fertility behaviour. The present report avoids this, and directly relates preferences both to fertility levels and to levels of contraceptive use. Apart from basic chapters dealing with measures of fertility preferences and the determinants of preferences, we devote two chapters to a comparison of the indicators of fertility motive with those of reproductive behaviour.

Two fundamental types of analysis are undertaken, one at the national level and one at the level of socio-economic groups. Information at the national level is of interest because it presents a summary, overall view of a particular country. One major reason for the interest in reproductive motives at the finer-grained level of social groups is because of the implications for social change. All three countries, for example, are steadily becoming more urban, more educated, less agricultural, with perhaps a tendency towards greater female labour force participation and a changing occupational structure. By looking at variations in current reproductive motives among social groups, the analyst can begin to assess portents for the future. In addition, information at the level of subgroups is an essential element in government planning.

The original intention was to describe the methodology in a single chapter and to have separate chapters reporting

the results for each country. Given the large number of methods of estimation that were used, however, and the need to explain them with concrete examples, this proved an unwieldy mode of organization. The present report is therefore organized by topic, with a separate discussion for each country, since the emphasis here is on national and not on comparative analysis, though of course striking similarities or divergences are noted when they occur.

The measurement, reliability, consistency and meaning of survey data on fertility preferences are subject to controversy. This introductory chapter therefore briefly examines available data on response reliability in the WFS surveys, and also the consistency of responses for the three Caribbean countries studied here. In addition, it reviews the measures of preferences which will be used and the statistical methodology employed. The regression approach used to analyse variation in fertility preferences, between social groups, and, in particular, the techniques used to adjust for demographic composition and for composition on other social variables are described.

The first substantive chapter, chapter 2, examines two major indicators of fertility preferences, mean desired family size and proportions wanting additional children. The first is the most basic measure while the second is a widely used indicator that has a certain amount of special appeal, given the relative simplicity of the question on whether more children are desired. This chapter also considers a variety of analytical pitfalls which are perhaps not widely understood and which may influence use of the data. In addition a new measure is presented here, the 'wanted total fertility rate', which expresses fertility preferences in terms of their potential effect on fertility behaviour. A particularly critical issue given the time lag between the surveys and the date of this report is assessing whether preferences change quickly or slowly over time. One view is that preferences are volatile, the opposing thesis that they change remarkably slowly. Chapter 2 discusses both time series and cross-sectional evidence on changes in preferences.

Chapter 3 analyses the social correlates of two preference indicators, namely desired family size and proportions wanting more children, and uses multivariate analysis to examine the strength of the linkages between these two indicators and a set of socio-economic variables including female work participation, occupation, education, place of residence, religion and ethnicity.

Given the relatively large numbers of Caribbean women who engage in more than one childbearing partnership over their reproductive careers, especially in Jamaica, and to a lesser extent in Guyana and Trinidad and Tobago, an important question is whether or not women feel constrained to have children in each new sexual partnership they enter, as this could quite easily push up the total number of children desired. Chapter 3 investigates the

hypothesis that women desire children in each new partnership, and examines not only preferences but also contraceptive behaviour and proportions pregnant. A further issue of importance is how far preferences for children of a particular sex tend to affect the overall number of children desired. Chapter 3 weighs evidence emerging from a variety of analytical approaches, and presents estimates of the incremental number of children desired as a consequence of preferences for children of a particular sex. Finally, this chapter briefly looks at regional differences in preferences in Jamaica, because of special interest in this topic.

The fourth chapter deals with differences in success and failure in implementing fertility preferences. The incidence of unwanted births is discussed first. Then, because so many of the possible pitfalls in assessing both proportions wanting more children and desired family size are due to differences in proportions using contraception for purposes of spacing births and proportions using for purposes of terminating childbearing (which have countervailing influences), chapter 4 discusses this issue, considering (1) proportions using contraception among women who want additional children and (2) proportions using among women who do not want more children. The third issue addressed in this chapter is perhaps one of the most important: what is the level of fertility implied by the preference data? Given the emergence of effective methods of fertility control, there is now a long-run tendency for unwanted fertility to be avoided, and for women to implement their preferences by adopting contraception on reaching the point where they wish to stop childbearing. Chapter 4 compares the actual total fertility rate with 'wanted' total fertility rates, and estimates the crude birth rates implied (1) if unwanted fertility is avoided, (2) if all women who want no more children adopt contraception of average effectiveness.

Having an unwanted birth can be considered as a failure in fertility control. Success and failure in implementing preferences are likely to vary among socio-economic subgroups, partly because the degree of motivation varies. Chapter 5 looks at levels of unwanted fertility among subgroups, and also at variations in the gap between actual fertility and wanted fertility among socio-economic groups. This chapter also analyses the related issue of use of contraception for spacing and limitation, examining differences among subgroups.

Chapter 6 essays a synthesis of data on social differentials in actual and preferred fertility and contraceptive use. Chapter 7 then presents a review of the most important findings, and policy conclusions.

## 1.2 BASIC PREFERENCE VARIABLES

This section describes the preference variables used in the present report, namely (1) whether the last birth or current pregnancy was wanted, (2) whether more children are wanted, (3) preferred sex of next child, (4) desired family

size. Since a number of different measures based on these variables are used in different places in the report, discussion of each specific measure is deferred until it is actually used.

### Whether last birth or current pregnancy wanted

In the WFS surveys of Guyana and Jamaica, respondents who wanted no more children or were undecided were asked, if they were pregnant, 'Before you became pregnant this time, had you wanted to have any (more) children?' If not pregnant, they were asked, 'Thinking back to the time before you became pregnant with your (last) child, had you wanted to have any (more) children?' Responses were coded 'Yes', 'No' and 'Undecided'.

Unlike the question on whether more children are wanted, this variable is also coded for infecund women and for women previously but not currently in union. Women who said they wanted more children are all imputed to have wanted the last birth or the current pregnancy.

The survey of Trinidad and Tobago confined this question to a small subset of women, (1) currently pregnant respondents and (2) respondents who had never used contraception.

### Whether more children wanted

To ascertain whether more children were wanted, pregnant respondents were asked, 'Do you want to have another child sometime, in addition to the one you are expecting?', while non-pregnant respondents were asked, 'Do you want to have (another child sometime) (any children)?' Responses were classified 'Yes', 'No' and 'Undecided'.

Contraceptively sterilized respondents were not asked the question, it being assumed that they had consented to be sterilized because they wanted no more children at the time, and such respondents are imputed as wanting no more. In addition, respondents who were no longer in a union, or who replied in the negative to the question, 'As far as you know, is it physically possible for you and your husband to have a child, supposing you wanted one?', were not asked the question on wanting more children.

For the present analysis, we follow past practice and treat women who were undecided as wanting more children. They form a small minority in all three surveys, eight per cent in both Guyana and Jamaica and six per cent in Trinidad and Tobago. The usual justification for treating them as wanting more is that the percentage using contraception among 'undecided' is much closer to the proportion using among women who want more than among women who want no more, though this clearly does not hold in Trinidad and Tobago, as can be seen below:

#### Per cent currently using contraception

	Guyana	Jamaica	Trinidad & Tobago
Want more	27	37	55
Undecided	36	44	62
Want no more	45	55	66

Nevertheless, rather than lose sample size by omitting such women, or depart from previous practice, we continue to treat undecideds as wanting additional children.

### Desired sex of next child

The question on desired sex of next child was restricted to non-pregnant and self-reported fecund women who said they wanted additional children. The question was worded, 'Would you prefer your next child to be a boy or a girl?', and space was provided to code the responses 'Boy', 'Girl' and 'Either', with a write-in space for other answers.

### Desired family size

In all three surveys, respondents who had ever been in a union were asked, 'If you could choose exactly the number of children to have, how many would that be?' The analysis in the present report is restricted to women who were in a union at time of interview and for whom full socio-economic data were available.

In cases where the respondent answered the question on number desired by giving a range of responses, such as 'three or four', the mean of the range was calculated and rounded down to the nearest integer, which may underestimate the mean.

Throughout the analysis, respondents who reported wanting more than seven children are recoded as wanting seven, in order to prevent small cells with extreme values having an undue effect, which could be a particular problem for socio-economic subgroups.

The percentages not answering the question on number desired or giving non-numeric answers was low in all three surveys, so such respondents have not been included:

	Guyana	Jamaica	Trinidad & Tobago
Non-response	0.0	2.5	1.7
Non-numeric answer	0.9	0.1	0.0

### 1.3 RELIABILITY OF PREFERENCE DATA: POST-ENUMERATION SURVEYS

A post-enumeration survey would be a useful means of evaluating reliability of preference data. Since none of these three countries carried out a repeat survey, however, we use the imperfect substitute of briefly summarizing the findings on the subject of preferences from a few other WFS surveys which did reinterview a subsample of women within a period varying from some weeks to several months.

#### Reliability of 'total number desired'

Results concerning the number of children desired question are to date available for four countries, Costa Rica, Fiji, Indonesia and Peru (the Costa Rican results pertain to a survey conducted 18 months after the first interview). Percentages giving identical responses in the

two interviews vary between 40 and 60 per cent for the four countries (see O'Muirheartaigh and Marckwardt 1980, p 29 and Stycos 1983, p 76).

This may convey an overly pessimistic view of the stability of the responses. A somewhat different picture comes from the analysis of responses for Indonesia, in the only report giving a detailed cross-tabulation of number desired in first interview by number desired in second (MacDonald, Simpson and Whitfield 1978). While only 54 per cent of respondents gave identical answers, 27 per cent differed by one child, so that 81 per cent of the respondents varied by only one child (the remaining 19 per cent were made up of women differing by two or more children and those giving a non-numeric response on one interview and a numeric one on the other). In the Costa Rican reinterviews, with a separation of 18 months between first and second interview, 84 per cent of the respondents stated a preferred number of children at second interview that ranged between zero and two children of the preferred number stated at first interview (Stycos 1983, p 14).

A further advantage of the detailed table provided in the Indonesian report is that it is possible to consider degree of stability by desired number reported at first survey, and indeed we see somewhat higher stability among women who initially said they wanted between two and four children than among any other group, and far lower stability among respondents who first said they wanted five or more children (MacDonald, Simpson and Whitfield 1978, p 78).

#### Reliability of 'whether more wanted'

Information on test-retest reliability of the 'whether more wanted' variable is available only for Costa Rica (Stycos 1983) and Fiji (First Country Report 1976). In the case of Costa Rica, where about 18 months elapsed between first and second interview, 77 per cent gave identical responses, 10 per cent shifted from 'Yes' to 'No', a plausible change, while 13 per cent shifted from 'No' to 'Yes', an implausible change (Stycos 1983, p 76). In the case of Fiji, where a month or so elapsed between first and second interview, comparable figures are that 81 per cent gave identical responses, 4 per cent shifted from no more to wanting more and 3 per cent shifted from more to no more, while the remaining 12 per cent are shifts in and out of the 'undecided' category (Principal Report, Fiji Fertility Survey 1976, p 32). But this level of detail is somewhat insufficient for a meaningful appreciation of the shifts taking place.

Better indication is available from the detailed results for Fiji, comparing answers at first and second interviews (Principal Report, Fiji Fertility Survey 1976, p 32). This comparison shows that among women giving a 'no more' response at first interview, 82 per cent gave a similar response at second interview, while 8 per cent shifted to undecided and 11 per cent to saying they wanted more. While the aggregate proportion wanting no more remains virtually constant between the two interviews, being 35 per cent at first interview and 36 per cent at second, the shift of 11 per cent from 'no more' to 'more' would justify a downward adjustment in the Fijian proportion wanting no more children from the observed 35 per cent to (0.89).(35)

or 31 per cent if we are interested in estimating the proportion wanting no more children in the long run rather than in a purely cross-sectional measurement.

We believe that it is better to assess the magnitude of error introduced by response unreliability by making adjustments such as these wherever possible, rather than taking the view that the unreliability of the data makes scientifically valid interpretation impossible.

#### 1.4 INTERNAL CONSISTENCY OF PREFERENCE DATA IN THE CARIBBEAN

This section examines consistency between (1) whether last child wanted, (2) whether more children wanted and (3) a variable constructed from the contrast between desired number of children and actual number of children living (counting a current pregnancy as a living child).

##### Consistency between desired family size and whether more children wanted

Table 1 compares responses to the direct question on whether another child is wanted with a constructed variable that shows whether desired family size exceeds, equals or is less than actual number of living children (counting a pregnancy as a living child in order to be consistent with the whether more wanted item).

The results in table 1 indicate that in all three surveys a great majority of those who wanted more children also reported a desired family size in excess of actual, 97 per cent for Guyana (1060/1089), 94 per cent for Jamaica (713/760) and 95 per cent for Trinidad and Tobago (1289/1363), with correspondingly few 'inconsistent' cases who reported wanting more children while also reporting a desired size equalling or less than the actual number living.

Among those who wanted no more children, however, substantial numbers reported a desired family size that exceeded the actual number living: 30 per cent in Guyana, 27 per cent in Jamaica and 27 per cent in Trinidad and Tobago. This type of response is not confined to the three Caribbean surveys under discussion, as table 2 shows. Some writers have tended to interpret such responses as logically inconsistent, and as reflecting problems of validity and reliability. But we have already seen that, among

women who want more children, there are very few inconsistent cases who say they want more and yet report a desired number that equals or is less than the actual number living, which argues strongly against this explanation.

An alternative hypothesis that other writers have found more appealing is that some respondents interpreted the question, 'If you could choose exactly the number of children to have in your whole life, how many would that be?' as meaning ideal family size, rather than the family size at which they wanted to cease childbearing. Indeed, a sharp distinction can be made between the family size at which women want to stop childbearing and the number of children they would prefer to have if there were no real world constraints such as child costs, limitations on overall household income and the opportunity costs to women of forsaking work for childbearing.

**Table 1** Whether more children wanted (direct question) by whether actual family size equals desired: Guyana, Jamaica and Trinidad and Tobago

Responses to direct question on whether more wanted	Whether actual family size exceeds desired			Total
	Actual exceeds desired	Actual equals desired	Desired exceeds actual	
<i>Guyana</i>				
More wanted	18	11	1060	1089
Undecided	19	61	143	223
Wants no more	467	663	476	1608
Total	504	735	1681	2920
<i>Jamaica</i>				
More wanted	19	18	713	760
Undecided	22	27	104	153
Wants no more	328	360	250	938
Total	372	406	1068	1875
<i>Trinidad and Tobago</i>				
More wanted	36	38	1289	1363
Undecided	23	37	109	169
Wants no more	518	461	364	1344
Total	578	537	1762	2876

**Table 2** Whether more children wanted by whether actual family size (AFS) equals desired family size (DFS)

Country	More wanted				No more wanted			
	AFS > DFS	AFS = DFS	AFS < DFS	N	AFS > DFS	AFS = DFS	AFS < DFS	N
Colombia	32	26	902	960	627	601	402	1630
Costa Rica	40	34	1031	1105	388	440	436	1264
Dominican Rep.	32	15	670	717	318	229	321	868
Haiti	8	12	699	719	260	358	151	770
Mexico	89	81	1873	2094	1087	1033	625	2789
Panama	34	33	822	889	523	577	489	1589
Paraguay	17	19	1439	1475	148	348	265	766
Peru	74	77	1270	1457	1282	859	541	2682
Venezuela	15	16	858	889	286	574	339	1199

A recent study of Costa Rica by Stycos (1983), however, has suggested a very different interpretation, and shows clearly the importance of following respondents longitudinally. In this study, a majority of respondents in the original WFS survey were reinterviewed about 18 months later. Among respondents who said they wanted no more children at first interview, the stability of attitude was far greater among the group whose preferred number of children was less than or equal to the actual number of living children (only 5 per cent switched from wanting no more to wanting more between first and second interview) than among the group which reported a preferred size that exceeded the number of living children (50 per cent switched between first and second interview). It is hoped that this type of analysis will be repeated on the available PES surveys. But in the absence of confirmatory analyses, one can assume only that this result is generally true, and that respondents who both 'want no more' and yet report a desired family size that exceeds actual are in fact expressing a desire to space the next birth rather than to stop childbearing entirely.

#### Internal consistency: last child wanted versus contrast between desired and actual family size

We now move to considering how consistent are the responses between the 'whether last child wanted' variable and that constructed from the contrast between actual and desired family size. Table 3 presents the relevant data.

When the last child is wanted, one would expect desired family size to equal or exceed actual. This condition is met

**Table 3** Last child wanted by contrast between desired family size (DFS) and actual family size (AFS)

Whether last wanted	DFS <	DFS =	DFS >	Total
	AFS	AFS	AFS	
<i>Guyana</i>				
Last wanted	74	190	1091	1355
Undecided	34	50	51	135
Last not wanted	441	538	339	1318
Total	549	778	1481	2808
<i>Jamaica</i>				
Last wanted	51	130	705	886
Undecided	13	30	31	74
Last not wanted	327	279	196	802
Total	391	439	932	1762
<i>Trinidad and Tobago</i>				
Last wanted	50	81	952	1083
Undecided	8	8	3	19
Last not wanted	89	45	31	166
Not asked	471	449	419	1338
Total	618	583	1405	2606

in 95 per cent of the cases for Guyana (1281/1355), 94 per cent of those for Jamaica (835/886) and 95 per cent of those for Trinidad and Tobago (1033/1083).

When the last child is not wanted however, one would expect desired family size to be less than actual. This condition is met in only 33 per cent of the cases for Guyana (441/1318), 41 per cent of those for Jamaica (327/802) and 54 per cent of those for Trinidad and Tobago (89/166). There are many cases where the last is not wanted and yet where desired equals actual, 41 per cent for Guyana, 35 per cent for Jamaica and 27 per cent for Trinidad and Tobago. The biggest discrepancy, however, occurs when desired exceeds actual (implying that more are wanted) and where last birth is recorded as unwanted, which happens in 339/1318 cases for Guyana (26 per cent), 196/802 for Jamaica (24 per cent) and 31/166 for Trinidad and Tobago (19 per cent).

To understand this discrepancy, we hark back to the discussion comparing desired family size and whether more wanted, which established that many respondents who say they want no more children also report a desired family size that exceeds actual number living. A popular explanation of this paradox is that some respondents answered the total number desired question as though it represented ideal family size, but Stycos' recent work on Costa Rica implies a very different situation under which 'want no mores' who desire additional children are – quite plausibly – in a borderline condition, and much more likely to switch to wanting more by next interview. This suggests that we should view such women as wanting to space rather than to stop childbearing, and that in turn we should regard 'last unwanted' in conjunction with 'more desired' as meaning 'last mistimed'. An alternative view is to keep on regarding total number desired as representing ideal family size and to think of 'last birth wanted' as more realistically capturing current reproductive motivation.

It seems more plausible to the present writer that 'last unwanted' plus 'desired exceeds actual' adds up to 'last mistimed'.

How should these results affect interpretation of estimates of desired birth rates based on desire for the last birth? One possible view is that because of these apparent inconsistencies one should place little faith in the estimates. The view to which we tend is that if indeed the 'last not wanted' responses capture mistimed last births, then the estimates need not be altered at all, since while women may have wanted additional births in the long run, in the short run they did not. Yet another view is that alternative estimates should be presented that incorporate the additional data (ie let consistent cases stand, but treat 'inconsistent' cases whose desired number exceeded or equalled the actual number as desiring the last birth). Some consideration will be given to these alternatives.

#### 1.5 STATISTICAL METHODOLOGY

The regression approach described in this chapter is used extensively in analysing social differentials and in other instances where social or demographic composition may affect the indicator being studied.

### Adjusting for sample composition

The need to adjust for sample composition when dealing with fertility preference variables and the techniques used to adjust, and the interpretation of the adjusted results are perhaps best illustrated by example. Table 4 (seen later as table 31), which is fairly typical of the format used, summarizes a substantial amount of information about social differentials in proportions wanting more children in the island of Jamaica, at four levels of statistical adjustment.

**1 Unadjusted proportions:** The unadjusted percentages wanting more children shown in column 1 of table 4 are just that – the ordinary percentages obtained through tabulating ‘whether more wanted’ by each of the 12 social and additional variables shown. The probability value attached to each variable in column 1 is the exact significance level implied by the F-ratio obtained from standard analysis of variance, and tells us how likely it is that the proportions observed in the categories of a particular variable are all the same. For example, the proportions wanting additional children classified by religion vary only slightly, from 48 to 52 per cent, and the probability that they are all the same is assessed at 0.819. On the other hand, the percentages vary substantially by respondent’s most recent (or current) occupation, from 39 to 61 per cent, and the probability that the means are all the same is assessed as rather unlikely, at 0.000 (the actual value calculated is 0.0000002; note that 0.000 is intended to mean  $p < 0.0005$ ).

The results in column 1 of table 4 may appear rather surprising. The unadjusted proportions wanting more children are substantially higher among urban women than among rural, very much higher among more educated women than among those with less schooling, and higher among women with husbands classified as professional than among those with husbands categorized as being in agriculture.

**2 Proportions adjusted for number of children and age:** The proportions wanting additional children presented in column 2 are standardized or adjusted for number of living children (NLC), age, and NLC-squared and age-squared (the squared terms being introduced to handle curvilinearities). Comparing columns 1 and 2 indicates that the standardization produces a radically different picture, in which higher status women have lower proportions wanting more children. This is consistent with the results in columns 6, 8 and 10, which show proportions wanting more children for women with two, three and four children. It is also consistent with the results in table 6, which shows that secondary educated women, for example, are both much younger and have many fewer children than women with 0–5 years’ education. It then becomes apparent, that the rather surprising results in column 1 are produced by differences between the various groups in composition by family size and age. This provides a good example of the need for standardizing.

The actual standardization for number of children and age is carried out by a technique little used in traditional demography, namely that of regression analysis, rather than calculating a mean for each category based on some standard distribution. In anything short of a massive sample, traditional standardization severely limits the

number of variables which can be standardized for, whereas multiple regression is much less limited.

In the regression procedure used, described in detail by Little and Perera (1981), each n-category socio-economic variable Z is treated as n–1 binary variables. The approach is identical to a multiple classification analysis in which significance levels are calculated for Z after all other covariates and factors are assessed (further details are given below). One purely cosmetic difference is that MCA results are usually presented in terms of deviations from the overall grand mean, while the adjusted mean for each cell in table 4 is obtained by adding the grand mean to the deviation for that particular cell. The prob values presented in column 2 are based on the addition to sum of squares when the particular variable in question enters the regression equation last.

**3 Adjusting for composition on other social variables.** It may be possible, for example, that the differences in proportions wanting more children observed in column 2 between the least educated women and the other educational categories are due not to education at all, but instead to the fact that the least educated women are so heavily rural, or that their husbands are largely in agriculture.

Table 4 contains two conceptually different kinds of adjustment for each social variable with respect to composition on the other social variables. In column 4, we adjust for all other social variables, which will tend to underestimate the differences between the categories of a particular variable if highly associated regressors such as respondent’s education and husband’s education are included (Little and Perera 1981 and Gordon 1968). Column 3 follows an alternative scheme, whose rationale has been described by Little and Perera, namely to force the variables to enter the regression in a predetermined order reflecting as closely as possible the predominant causal ordering between them, and to thereby secure an estimate of the total effect of each variable, where causally prior regressors are controlled for and causally posterior variables are not. ‘For example, if Y is the regressand variable and three regressor variables have the causal ordering

$$X(1) \rightarrow X(2) \rightarrow X(3) \rightarrow Y$$

then the total effect of X(1) is unadjusted, the total effect of X(2) is adjusted for X(1), and the total effect of X(3) is adjusted for X(1) and X(2). The idea is strongly related to recursive path analysis.’ Little and Perera point out, however, that while the procedure is theoretically satisfying, it is in practice limited by the weaknesses inherent in using an approximate causal ordering. Interactions among the most important factors were examined and found to be insignificant, which enables us to proceed with this additive approach.

The order of adjustment followed is that number of living children (NLC), NLC-squared, age and age-squared enter the regression prior to any other variables. The ordering of the subsequent variables is reflected in the physical layout of the table, with the following sequence: residence status (ethnicity), religion, education, current union status, occupation, whether working at time of

Table 4 Percentages wanting more children, Jamaica, by socio-economic groups

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- just- ed mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
				N		%	N	%	N	%	N
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
ALL JAMAICA	48.9	48.9	48.9	48.9	1866	63.3	278	49.3	229	38.2	157
RESIDENCE STATUS											
Resides in rural area	45.9	51.5	51.5	50.9	983	65.7	130	53.7	100	46.1	83
Born rural, resides urban	50.6	46.5	46.5	46.9	621	60.0	93	46.9	89	30.9	56
Born urban, resides urban	56.5	45.0	45.0	46.2	262	63.2	55	43.9	40	24.7	18
PROB VALUE	0.006	0.017	0.017	0.167		0.685		0.472		0.081	
RELIGION											
Church of God	50.6	51.9	51.7	51.2	389	63.4	50	56.6	42	40.0	41
Anglican-Methodist	48.2	46.7	47.0	47.4	311	64.9	50	48.6	50	36.7	28
Catholic	50.0	43.1	44.6	44.4	166	60.8	32	34.5	22	31.5	14
Bapt-Morav-Other Protestant	47.7	49.2	48.9	49.2	857	65.2	124	50.5	99	34.2	58
No religion	51.8	50.9	50.8	49.7	143	52.7	22	46.1	16	56.7	16
PROB VALUE	0.819	0.959	0.379	0.525		0.848		0.538		0.517	
RESPONDENT'S EDUCATION											
0-5 years	42.6	56.4	55.2	55.6	235	80.2	28	72.0	16	44.6	22
6-7 years	39.1	47.4	46.9	46.7	404	51.3	48	45.3	53	45.9	37
Completed primary	46.2	49.2	49.0	49.0	781	68.7	116	52.5	108	33.0	79
Secondary or higher	65.9	45.9	47.3	47.3	446	57.2	86	39.9	52	37.8	19
PROB VALUE	0.000	0.018	0.083	0.068		0.021		0.094		0.530	
UNION STATUS											
Married	38.0	48.6	48.9	48.6	724	63.4	109	48.3	100	26.6	62
Common-law	50.8	51.5	51.3	51.5	658	69.9	98	48.2	83	49.5	67
Visiting	62.8	45.9	45.8	45.9	484	54.0	71	53.7	46	37.2	28
PROB VALUE	0.000	0.087	0.113	0.097		0.101		0.807		0.033	
R'S LATEST OCCUPATION											
Prof-Tech-Admin	60.7	45.4	47.7	47.3	168	54.9	35	42.1	31	19.5	5
Clerical-White Collar Sales	58.8	47.9	50.0	50.7	335	63.1	60	36.7	40	23.9	23
Services-Blue Collar Sales	43.0	48.3	47.3	48.8	693	60.7	97	51.0	81	38.8	81
Skilled or unskilled manual	47.0	49.0	49.9	50.7	253	69.1	42	60.3	39	34.1	24
Agricultural	38.5	60.2	57.3	57.1	130	87.2	9	62.1	17	78.1	5
Never worked	51.2	48.6	47.7	42.7	287	66.2	53	47.2	21	52.8	19
PROB VALUE	0.000	0.053	0.205	0.166		0.507		0.264		0.157	
WORKING NOW?											
Now working	49.6	48.9	49.4	49.3	796	64.1	120	48.3	108	23.6	59
Not now working	48.4	48.9	48.6	48.7	1070	62.7	158	50.3	121	47.0	98
PROB VALUE	0.605	1.000	0.736	0.772		0.825		0.773		0.004	
WORKED BEFORE 1ST BIRTH?											
Worked before 1st birth	51.0	51.4	46.1	45.6	980	58.9	153	48.9	125	29.3	64
Did not work before 1st	46.6	46.7	52.1	52.7	886	68.7	125	49.8	100	44.4	93
PROB VALUE	0.057	0.015	0.007	0.003		0.105		0.888		0.051	
WORKED AFTER 1ST BIRTH?											
Worked after 1st birth	42.4	48.4	48.4	47.8	1239	64.5	215	48.4	193	36.6	129
Did not work after 1st	61.9	49.2	50.0	51.1	627	59.1	63	54.4	36	46.0	28
PROB VALUE	0.000	0.700	0.591	0.315		0.449		0.505		0.345	
HUSBAND/PARTNER'S EDUCATION											
0-5 years	37.7	54.0	50.3	50.0	199	66.6	21	63.7	15	53.3	12
6-7 years	38.6	50.0	47.8	47.9	254	65.9	31	48.5	23	33.8	26
Completed primary	45.4	48.3	47.9	48.2	973	63.6	146	50.4	138	40.9	96
Secondary or higher	67.7	47.4	51.1	50.7	440	61.0	80	42.8	53	24.3	23
PROB VALUE	0.000	0.301	0.647	0.810		0.946		0.510		0.292	



Table 4, continued

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- just- mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
				N		%	N	%	N	%	N
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
<b>HUSB/PARTNER'S OCCUPATION</b>											
Prof-tech-clerical	61.5	48.7	51.6	51.5	304	64.3	58	40.8	43	27.3	23
Sales or services	48.6	44.0	45.2	45.1	257	59.9	41	46.9	39	53.5	15
Agricultural	36.4	53.7	49.8	49.9	376	74.3	30	59.1	37	51.2	21
Skilled or unskilled manual	49.9	48.4	48.7	48.7	929	61.6	149	50.3	110	35.7	98
PROB VALUE	0.000	0.037	0.332	0.318		0.578		0.396		0.191	
<b>WILL CHILDREN CONTRIBUTE TO H/HOLD WHEN THEY START WORK?<sup>a</sup></b>											
Expects no contribution	55.6	50.6	51.8	51.3	234	59.7	57	50.3	35	18.8	15
Yes, expects contribution	46.6	49.8	49.7	50.1	1100	62.6	195	50.4	176	39.7	124
Not asked	50.8	46.4	46.1	45.6	532	76.4	26	37.1	18	44.4	18
PROB VALUE	0.028	0.346	0.251	0.192		0.462		0.600		0.233	
<b>EXPECTED SOURCES OF MONEY SUPPORT IN OLD AGE<sup>b</sup></b>											
Children not mentioned	56.1	49.8	50.7	50.7	1051	58.9	164	47.8	137	39.1	78
Children mentioned (spont.)	39.5	47.7	46.6	46.6	812	69.6	114	51.6	92	36.7	78
Not asked	66.7	66.8	67.4	67.4	3	-	0	-	0	88.7	1
PROB VALUE	0.000	0.410	0.106	0.106		0.043		0.726		0.538	

a Question: "Do you expect your children to contribute to your household when they start working?"

b Question: "What means of financial support do you think you will have when you and your partner are old, or can no longer work for any other reason?"

Note: In this table "number of living children" counts a current pregnancy as a living child.

interview, whether worked before the first birth, whether worked after the first birth, husband or partner's education, husband or partner's occupation, and, in the case of Jamaica, the two attitudinal variables, namely respondent's expectation of contribution to household when children begin work and respondent's expectation of money support from children in old age. In the case of Guyana and Trinidad and Tobago, ethnicity was the second social variable to enter the regression, directly following residence and before religion. Although there is fairly high multicollinearity among these factors, they were all included, because of interest in measuring the degree of variation according to each socio-economic factor as well as the overall effect of all the factors together. The multivariate techniques will, in any case, control for overlap between factors, when measuring the total effect of all variables.

The rationale for this somewhat arbitrary causal ordering is that residence, ethnicity and religion are the earliest variables in the life cycle, followed by education, followed by either union status or work. The respondent's own occupation is taken to be prior to the husband or partner in time, since large numbers of women work before the first birth. The characteristics of husband or partner are taken as temporally posterior to all the others, except for the expectations of child support variables.

In this particular table, the adjustment for demographic composition is seen to have a very substantial effect, while the subsequent adjustments for social composition in both columns 3 and 4 have very little. On the other hand, it is clear that several differentials 'survive' even when adjusted on all other variables. The least educated women, for example, are seen to have persistently high proportions wanting more children, and we can conclude (1) that after controlling for residence status and religion the differentials by respondent's education are attenuated only very slightly, (2) that after controlling for composition on all other variables, including husband/partner's education, occupation and work status, there still remains a statistically significant difference in the proportion wanting more children between women with 0-5 years' education and those with more.

We note that the prob value for a given variable Z in column 3 is calculated from the addition to sum of squares that is obtained when Z enters the regression after all causally prior variables but with all antecedent variables excluded. The prob value for Z in column 4, on the other hand, is based on Z's addition to sum of squares after all other variables have entered the regression equation. In actual practice, this meant performing a separate regression for every variable in column 4, in which that variable was forced to enter last.







### **Bivariate tables**

To facilitate interpretation of the multivariate tables, showing whether differentials between categories of each variable remain after adjusting for the composition of other variables, we present for each country a table containing a bivariate tabulation of each socio-economic background variable by every other background variable (see tables 5, 6 and 7). These two-way tabulations are intended to augment what is known about each background variable.

As can be seen from table 5 for Guyana, each bivariate table adds row-wise to 100 per cent. The tabulation of residence status by education, for example (see rows 1-3, columns 10-14), shows that urban born urban residents are the best educated group, that rural born urban residents are somewhat less well educated, and that the group of rural respondents have less education than either

of the other two residence groups; the same picture emerges in table 6 for Jamaica and table 7 for Trinidad and Tobago.

In the later analysis, there will be instances where these bivariate tabulations prove helpful in understanding a differential better. For example, table 6 is useful in explaining the unexpected result that Catholics in Jamaica have lower preferred family size, lower actual fertility and higher contraceptive use. The table shows that Jamaican Catholic women are relatively more urban, more educated and more likely to be currently working than most of the other religious groups.

In addition to the bivariate tables, the mean age for each category is shown in the third from last column and the mean number of living children (unadjusted) in the second from last column. The final column shows the mean number of living children adjusted for age. These three indicators are intended to further facilitate the analysis.

## 2 Desired Family Size and Proportions Wanting More

This chapter analyses fertility preferences at the national level. We first discuss some of the problems of definition and measurement. This is necessary to provide the framework within which estimates of preferences must be placed, given our uncertainty about the meaning of respondents' answers to these attitudinal questions. We then present estimates of mean desired family size at the national level and attempt to reconcile them. This section mentions the 'wanted fertility rate', a new measure which expresses the hypothetical effect of achieving fertility preferences, on the average family size. This measure is discussed in more detail in chapter 4. Variation in the number of children desired by age and parity is then discussed. The next section analyses proportions wanting additional children. Finally, the important issue of the stability of fertility preferences over time is explored.

### 2.1 MEAN DESIRED FAMILY SIZE

#### Problems of measurement of mean desired family size

To illustrate the difficulties that confront the analyst of desired family size data, this chapter simulates the behaviour of a known desired family size distribution under several different assumptions.

The analysis of desired family size data would be a simple and straightforward matter if family size desires were fixed at time of entry to reproduction – if we could be confident that each respondent chose a particular desired family size before she married and did not deviate from this number throughout life.

In the subsequent discussion we will assume that the true underlying desired family size distribution is as follows: 5 per cent want no children, 15 per cent want one, 40 per cent want two, 30 per cent want three and 10 per cent want four.

Table 8 illustrates the expected distribution of desired family size by actual family size if (1) family size desires are fixed at time of entry to reproduction, (2) all age and marriage cohorts possess the same underlying desired family size distribution as shown in the first row of the table, (3) no one ever uses contraception (ie no one 'implements' their desire for a particular family size by using contraception to terminate childbearing at that family size). For simplicity the table assumes six cohorts, each containing 100 women married at age 25 and capable of having a birth at the end of every three-year period; they have births at ages 28, 31, 34, 37 and 40, and then become infecund.

Under these assumptions, the women in table 8 will pass from parity to parity at identical speed, regardless of their reproductive desires, since none slow their ascent up the parity ladder with contraception. In this case the assumed 'underlying' desired family size distribution is reproduced

**Table 8** Illustration of expected desired family size distribution: fixed desires, equal in all cohorts, with no contraceptive use

Actual family size (parity) <i>i</i>	Numbers desiring <i>j</i> children at parity <i>i</i> , assuming 100 women in each cohort						Total	Mean
	<i>j</i> = 0	1	2	3	4			
0	5	15	40	30	10	100	2.25	
1	5	15	40	30	10	100	2.25	
2	5	15	40	30	10	100	2.25	
3	5	15	40	30	10	100	2.25	
4	5	15	40	30	10	100	2.25	
5	5	15	40	30	10	100	2.25	
All	30	90	240	180	60	600	2.25	

**Table 9** Illustration of expected desired family size distribution: fixed desires, equal in all cohorts, with perfect contraceptive use on achieving desired family size

Actual family size (parity) <i>i</i>	Numbers desiring <i>j</i> children at parity <i>i</i> , assuming 100 women in each cohort						Total	Mean
	<i>j</i> = 0	1	2	3	4			
0	30	15	40	30	10	125	1.80	
1		75	40	30	10	155	1.84	
2			160	30	10	200	2.25	
3				90	10	100	3.10	
4					20	20	4.00	
5								
All	30	90	240	180	60	600	2.25	

exactly at each actual family size. As can be seen, both the desired family size distribution and its mean remain the same with each increase in family size, and we can be in no doubt as to what the data are telling us.

Table 9 illustrates how radically matters change when we continue to assume the same underlying desired family size distribution as in table 8, but change just one assumption. Instead of taking it that no one implements their desire to stop childbearing, we assume that women adopt 100 per cent effective contraception on reaching desired family size, though we continue to assume fixity of desired family size and similar distributions in all cohorts. As can be seen, the mean rises with each increase in parity, and the distribution is different at every parity, though the overall distribution (final row) remains the same as does the overall mean.

**Table 10** Illustration of expected desired family size distribution: same underlying distribution as in tables 8 and 9, equal distribution in all cohorts, no implementation of contraception on reaching desired size, perfect rationalization

Actual family size (parity) $i$	Numbers desiring $j$ children at parity $i$ , assuming 100 women in each cohort							Mean
	$j=0$	1	2	3	4	5	Total	
0	5	15	40	30	10	0	100	2.25
1		20	40	30	10	0	100	2.30
2			60	30	10	0	100	2.50
3				90	10	0	100	3.10
4					100	0	100	4.00
5						100	100	5.00
All	5	35	140	180	140	100	600	3.192

Note that while table 9 illustrates exactly what would happen under 100 per cent implementation of perfect contraception on reaching desired family size, the table bears a considerable superficial resemblance to what happens under an entirely different assumption, namely no implementation and 'perfect rationalization', where all women who exceed their desired family size 'rationalize' or accept the new addition by revising their desired size upwards to conform with actual size. The reason for rationalization may be that they want to avoid implying to an interviewer that any of their children are unwanted, or, more fundamentally, an initially unwanted pregnancy may become a wanted birth in order to preserve cognitive consistency between motivation and reality.) Table 10 illustrates the expected distribution under perfect rationalization and no implementation. We see that it shares the same tendency as table 9 for the mean to rise and for there to be zero elements to the left of the main diagonal plus a relative bunching on the main diagonal, though the proportions collecting there are smaller than in table 9.

Unlike tables 8 and 9, the mean in table 10 for all women is 3.19 and has ceased to be identical to the true underlying mean of 2.25 children and is substantially biased upwards, by 9/10 of a child, solely through rationalization.

Table 8 is straightforward and easy to interpret. The reverse is true of tables 9 and 10, where the relationship between parity and numbers of children desired is complex and difficult to analyse. What, for example, is the true mean desired family size in these tables? To an outside observer unacquainted with our (so far) simple constructed rules, the only safe inference that can be made from the data presented in tables 9 and 10 is that the true mean lies somewhere between the lowest and the highest parity specific means.

The above tables help to illustrate how either 'rationalization' or 'implementation' can operate to produce a tendency – observed in nearly all real surveys – for mean desired family size to increase as actual family size rises. Table 11 presents a further possible example of an increase in mean desired family size with increasing parity, often

**Table 11** Illustration of underestimation by low parity women (or of 'modernization' effect, where younger cohorts have genuinely lower desired family size)

Actual family size (parity) $i$	Numbers desiring $j$ children at parity $i$ , assuming 100 women in each cohort							Mean
	$j=0$	1	2	3	4	5	Total	
0	5	15	40	30	10	0	100	2.25
1	5	15	20	45	15	0	100	2.50
2	5	15	20	25	35	0	100	2.70
3	5	15	20	15	35	10	100	2.90
4	5	15	20	15	20	25	100	3.05
5	5	15	20	15	10	35	100	3.15
All	30	90	140	145	125	70	600	2.758

closely approximated in reality. Here, women with no children or one tend to underestimate the number of children they will ultimately want, and the desired family size distribution changes with each rise in actual family size. Note that in tables 8, 9 and 10 this does not happen. For example, the proportion wanting three or more children is the same at family sizes 0, 1 and 2; but in table 11 the proportion wanting three or more children rises from 40 per cent among women with no children to 60 per cent among women with two.

There are two possible explanations for the kind of phenomenon exemplified in table 11. First, it is possible that low parity women tend to underestimate the number of children they will ultimately want. And secondly, it is possible that the assumption of equal desired family size distributions in all cohorts is incorrect, and that because of modernization younger women (who tend to be better educated, more urban, more travelled and to have had more exposure to the mass media) tend to have genuinely lower family size desires than older women. The analysis of actual data later will consider these two alternatives.

Table 12 compares three cases, (1) the perfect contraception case drawn from table 9, (2) the perfect rationalization and no contraception case drawn from table 10, and (3) a 'mixed' case where 50 per cent rationalize and 50 per cent implement perfectly. The final row presents means standardized on the overall population comprised by the three groups. Recalling that all three groups have identical desired family size distributions, we can see that in this particular case standardizing on the overall distribution has helped to reduce spurious differentials in mean desired family size that are due solely to rationalization but has by no means eliminated them. When real developing country populations fall between the perfect rationalization and mixed cases, we can see that in comparing differentials in desired family size between subgroups which differentially rationalize and implement, the safest strategy is to standardize on the overall population, controlling for number of living children. Even then, however, differentials in mean desired family size could easily come from differences in implementation though the underlying desired family size distribution may be the same.

**Table 12** Illustration of expected distortions comparing perfect contraceptors, perfect rationalizers and intermediate cases

Actual family size (parity) i	Perfect contraceptors		All rationalize (none use contraception)		Mixed case (50% contracept, 50% rationalize)		Total no of women (cols 2, 4, 6)
	Mean	No of women	Mean	No of women	Mean	No of women	
0	1.80	125	2.25	100	2.00	225	450
1	1.84	155	2.30	100	2.02	255	560
2	2.25	200	2.50	100	2.33	300	600
3	3.10	100	3.10	100	3.10	200	400
4	4.00	20	4.00	100	4.00	120	240
5		0	5.00	100	5.00	100	200
Total	2.25	600	3.19	600	2.72	1200	4800
Standardized	2.21		2.87		2.72		

Suppose, however, that underestimation effects are important. These will become especially problematic if some subgroups widely employ contraception for spacing purposes while others do not, since the subgroup that stays at a lower parity as a result of contracepting for spacing purposes will tend to understate its ultimate desired family size.

Bearing all these considerations in mind, the safest strategy is to compare differentials (1) controlling for actual family size, though if some space and all underestimate, and if some implement and others rationalize, this will exaggerate the differentials, (2) restricting the sample to women say 0-5 years in union, which will tend to underestimate the actual mean number wanted in any subgroup if underestimation effects are important, but which will protect against rationalization versus implementation effects in countries where few women want fewer than two children. In addition, it will be useful to compare parity specific means for particular subgroups and to look at levels of contraception for stopping and spacing purposes and levels of success or failure in controlling fertility.

### Results on mean desired family size

Despite the difficulties involved in estimating mean desired family size, it is still possible and useful to obtain acceptable measures. The underlying quantity we want to measure is the number of wanted births that women would have if (1) they stopped childbearing when they ceased wanting additional children, (2) they postponed childbearing when they wanted to postpone – and some might want to postpone until menopause – and (3) they were subject to normal fecundity constraints. Although the data at hand are inadequate for this task, we can still use this framework in interpreting the results. This section compares various estimates of mean desired family size at the national level for the three countries, and with the above framework in mind we shall attempt to come to firmer interpretations of the various means.

#### *Guyana: mean desired family size*

The conventional mean number of children desired for Guyana (based on the total number desired question) untruncated and untrimmed is 4.58. Truncated at family

size 7 it becomes 4.28. Truncated at family size 14 and then 'trimmed' into consistency with statements about whether more children are desired and whether the last birth was wanted it then becomes 4.00.

Synthetic cohort estimates of mean number of living children desired put the mean at between 4.08 children by the Rodríguez and Trussell method and 3.69 children by the Lightbourne method (see Rodríguez and Trussell 1981 for a full explanation of the methods). These estimates measure the number of children women would have if they stopped when they wanted no additional children, if they were not subject to fecundity constraints, and if spacing was not brought into the picture.

The wanted total fertility rate method, on the other hand, estimates the total number of live births women would have over a lifetime if they avoided unwanted childbearing (see p 80 for description of wanted fertility rate methods), and for Guyana as a whole the definition 1 figure is 2.69 births desired as against 3.66 under definition 2 (definition 1 being based on whether last birth was wanted plus whether actual exceeded desired and definition 2 solely on whether actual exceeded desired). The difference between definition 1 and definition 2 is quite likely the result of mis-timed births, while the difference between definition 2 and the total fertility rate of 4.37 (0.71 births) is the number in excess of desired family size, which may be considered as the number definitely unwanted (see chapter 4 for a fuller discussion of wanted fertility rates). These wanted total fertility rates are meaningful as a measure of what the level of fertility would be if women began to implement their preferences.

To the extent that contraceptive use among women who want more children reduces the TFR, however, it could be argued that wanted TFRs to some extent underestimate the number of births desired. Without accurate data on how long women want to postpone it is hard to evaluate this argument. We hypothesize that there may be very substantial numbers of women who will never cease wanting to postpone the next birth, in which case the number of children women would have under perfect implementation of both stopping and spacing motives could be lower than even the definition 1 wanted TFR of 2.69 births.

In contrast with the wanted TFR estimates of 2.69 and 3.66 births desired, we adjusted a trimmed desired family



size distribution for child mortality and for fecundity constraints and produced an estimate that if Guyanese women terminated childbearing on reaching desired family size they would have 3.58 births, assuming the parity progression of ever-married Guyanese rural women.

Another interesting estimate to be borne in mind is that, in the absence of infecundity, Guyanese women would have 4.6 desired births, which would result in 4.2 survivors to age 21. Given governmental interest in increasing or at least maintaining the rate of population growth, it would seem that efforts to both treat fecundity impairments and further lower child mortality might help progress in this direction.

#### *Jamaica: mean desired family size*

The conventional mean for Jamaica is, without any adjustment, 4.05. If responses exceeding 7 are reset to 7, it then becomes 3.89. If responses exceeding 14 are reset to 14 and then forced into consistency with the whether more wanted and whether last birth wanted items, the resulting trimmed mean is 3.69.

The synthetic cohort estimates of the national mean are, respectively, 4.00 and 3.85 by the Rodriguez-Trussell and Lightbourne estimators.

These estimates of number of living children desired are substantially higher than the number desired estimated by the wanted total fertility rate. The latter method estimates a mean of 2.28 births under definition 1 and of 3.40 under definition 2, compared to an actual total fertility rate of 4.39. If the 'mistiming' hypothesis is correct, then 1.12 (3.40-2.28) births were mistimed, while 0.99 were unwanted (4.39-3.40).

The method of adjusting the desired family size distribution for child mortality and parental fecundity constraints yields an estimate of between 2.94 and 3.28 births desired (depending on the proxy fecundity schedule used).

#### *Trinidad and Tobago: mean desired family size*

For Trinidad and Tobago, the conventional mean stemming from the total number desired question without any adjustments is 3.77 children, and the mean truncated at family size 7 is 3.69. The mean trimmed for inconsistent cases is 3.55, which is possibly an overestimate given the small number asked whether they wanted the last birth.

The synthetic cohort estimates of the mean were 6.05 and 5.96 respectively for the Rodriguez-Trussell and Lightbourne methods, which are obviously severe overestimates resulting from the very high levels of contraceptive use for childspacing purposes which naturally inflate the proportions wanting more children substantially at each family size. Indeed, the proportion wanting more children is substantially higher at each parity in Trinidad and Tobago than in Guyana or Jamaica, despite the fact that mean desired family size at each parity is lower, which reinforces our point, made elsewhere, that proportions wanting more children are potentially misleading as indicators of relative reproductive motivation.

The definition 1 version of the wanted fertility rate for Trinidad and Tobago estimates a wanted TFR of 2.42 births, which is undoubtedly on the high side, as against a definition 2 estimate of 2.46 births desired, which is 0.67 points below the estimate of 3.13 births desired that we obtained through adjusting the trimmed mean for child

mortality and for constraints on parental fecundity (assuming the constraints that appeared to operate among ever-married rural Guyanese women aged 40-49). This gap could very easily be explained by the high level of contraceptive use among women who want more children in Trinidad, where 50 per cent of those aged 15-39 are using.

The overall picture that emerges from the assessment of the Trinidad and Tobago data on mean desired family size is that the mean number of births ultimately desired is certainly no higher than 3.5, and that in the short run the total fertility rate would come down to at the most 2.4, probably lower, if unwanted fertility could be prevented.

#### **Variation by age and parity in mean desired family size**

As noted above, in most surveys the average number of children desired increases quite noticeably with each increase in actual family size. This typically produces a strong correlation between the actual number of children living and the number desired. Table 13 shows that this holds true in the WFS surveys of Guyana, Jamaica and Trinidad and Tobago. In Guyana, desired family size rises by 2.6 children between parities 0 and 8, in Jamaica it rises by 2.3 children, and in Trinidad and Tobago it rises markedly less, by 1.4 children.

To date, the three main factors have been identified that should explain most or all of the strong correlation typically observed between actual and desired family size. These factors (discussed above) are modernization, underestimation and rationalization. A precise disentangling of them would require following actual and desired family size on the same respondents over time, in a set of repeat surveys. From the cross-sectional data at hand, however, certain conclusions may be drawn.

#### *The modernization hypothesis*

The modernization hypothesis argues that younger women may come to have genuinely lower desired family size, and to implement this preference, in response to social changes such as increasing urbanization, rises in housing costs, declining child mortality, improvements in education, and changes in the occupational structure away from home-based occupations in which children are economic assets to parents and childcare is simplified. Thus, part or all of the correlation is produced by the simple fact that women

**Table 13** Mean desired family size by number of living children

Parity (no of living children)	Guyana	Jamaica	Trinidad and Tobago
0	3.5	3.1	3.1
2	3.6	3.5	3.5
4	4.6	4.3	4.2
6	5.5	5.2	4.5
8	6.1	5.4	4.5

NOTE: In this table, women wanting ten or more children were recoded as wanting nine.

**Table 14** Differentials by age in mean number of children desired, standardized for NLC (number of living children) and unstandardized; Guyana, Jamaica and Trinidad and Tobago

Age	Guyana			Jamaica			Trinidad and Tobago		
	Unad just -ed (1)	Adj. for NLC <sup>a</sup> (2)	N (3)	Unad just -ed (4)	Adj. for NLC <sup>a</sup> (5)	N (6)	Unad just -ed (7)	Adj. for NLC <sup>a</sup> (8)	N (9)
15-19	3.36	4.21	311	3.26	4.05	201	3.09	3.64	230
20-24	3.67	4.27	633	3.46	3.95	420	3.36	3.75	606
25-29	4.13	4.33	613	3.77	3.91	348	3.48	3.65	589
30-34	4.62	4.25	483	4.06	3.79	290	3.81	3.70	550
35-39	4.82	4.27	421	4.14	3.71	282	3.91	3.63	429
40-44	4.84	4.33	340	4.49	4.00	241	3.96	3.54	340
45-49	4.88	4.30	296	4.30	3.82	206	4.38	3.91	297
15-49	4.28	4.28	3097	3.89	3.89	1988	3.69	3.69	3040
F-ratio	61.298	0.332		18.374	1.324		30.142	2.508	
Prob	0.000	0.920		0.000	0.242		0.000	0.020	

<sup>a</sup>Standardized via multiple regression for NLC and NLC squared.

**Table 15** Differentials by NLC (number of living children) in mean number of children desired, standardized for age and unstandardized: Guyana, Jamaica and Trinidad and Tobago

NLC	Guyana			Jamaica			Trinidad and Tobago		
	Unad just -ed (1)	Adj. for age <sup>a</sup> (2)	N (3)	Unad just -ed (4)	Adj. for age <sup>a</sup> (5)	N (6)	Unad just -ed (7)	Adj. for age <sup>a</sup> (8)	N (9)
0	3.42	3.44	399	3.05	3.00	259	3.12	3.12	552
1	3.36	3.38	459	3.04	2.99	349	3.10	3.09	524
2	3.54	3.54	426	3.44	3.42	321	3.43	3.44	551
3	4.04	4.03	399	3.93	3.94	269	3.77	3.77	364
4	4.58	4.57	337	4.24	4.27	188	4.14	4.15	307
5	4.91	4.90	288	4.47	4.52	151	4.41	4.43	231
6	5.25	5.25	245	4.92	4.98	129	4.35	4.35	158
7	5.56	5.55	182	4.92	4.96	93	4.52	4.52	124
8	5.37	5.36	135	4.91	4.96	89	4.22	4.23	86
9+	5.49	5.47	227	5.14	5.18	140	4.93	4.89	143
0-9	4.28	4.28	3097	3.89	3.89	1988	3.69	3.69	3040
F-ratio	112.94	67.30		51.31	38.13		59.41	38.91	
Prob	0.000	0.000		0.000	0.000		0.000	0.000	

<sup>a</sup>Standardized via regression for age and age squared.

<sup>b</sup>NLC denotes number of living children; a current pregnancy is not counted as a living child.

who want small families are successful in restricting their fertility, while women who want large families tend to go ahead and have them (Knodel and Prachuabmoh 1973).

In the first place, it is possible to dismiss the modernization theory as being probably of little or no importance in explaining the strong association between actual and desired family size in the three countries. This conclusion is based on table 14, which shows that once actual family size is adjusted for, there is no significant tendency for

younger women to have lower desired family size. In the case of Guyana the youngest women have an adjusted mean of 4.21, for Jamaica the adjusted mean is 4.05, and in Trinidad and Tobago it is 3.64. But while adjusting for parity removes the difference by age, table 15 shows that, again in all three countries, adjusting for age does little to affect the deviations from the grand mean by number of living children. Parity, then, is plainly the dominant variable.

From a policy standpoint this conclusion that desired family size is underlyingly invariant with age is quite important, given the pro-fertility policy of the Government of Guyana and that of wishing to reduce fertility of the Governments of Jamaica and of Trinidad and Tobago.

If these countries were the only ones for which data were available, there would be more doubt concerning the conclusion that desired family size fails to rise with age once number of living children is controlled for especially since it is possible to conceive of circumstances where younger women are more successful in implementing their preferences and selecting themselves to their desired parities. But the same lack of relationship between age and desired family size once actual family size is controlled for has been observed in a much larger group of countries, including several such as Pakistan and Bangladesh where implementation of preferences is comparatively rare (Lightbourne and MacDonald 1982).

#### *Underestimation effects*

A second factor that may help to produce the correlation between number of children living and number of children desired is a recently identified tendency of childless women and those with one or two children to systematically underestimate the number of children they will ultimately desire (Lightbourne and MacDonald 1982).

The issue of underestimation effects can be investigated through cross-tabulating desired family size by number of living children as in table 16, then cumulating as in table 17 to show the proportion desiring more than  $j$  children at each parity. By then focusing on cumulations in each column of table 17 that occur *above* the main diagonal, we can examine the degree to which low parity women tend to underestimate the number of children they will ultimately want without any contamination by rationalization or implementation, since attention is confined to women who have not yet achieved desired family size.

When examined in this way, table 17 indicates that the proportion desiring  $j$  or more children typically increases with each rise in parity, for parities  $0, 1, \dots, j-1$ . The results for Guyana, for example, demonstrate that the proportion wanting five or more children rises sharply from 16–17 per cent at parities 0–2 to 28 per cent at parity 3 to 47 per cent at parity 4.

Further inspection of table 17 reveals that this association exists not only for Guyana, but for Jamaica and Trinidad and Tobago as well, indicating that there is indeed a general tendency for women in these surveys to understate the number of children they will ultimately desire.

The conclusion that emerges from this examination of the data is that in all three countries, underestimation of the number of children ultimately wanted is an important factor in explaining the rise in desired family size and actual family size, and that much of the rise is wholly unconnected with rationalization of undesired births or with successful implementation of contraception to terminate childbearing.

#### *Rationalization*

Thirdly, where women go on childbearing after they reach the parity where they want to stop having children, it may be that such women report their current family size as their

**Table 16** Number of children desired by number of living children: Guyana, Jamaica and Trinidad and Tobago

No of living children	No of children desired										Total
	0	1	2	3	4	5	6	7	8	9+	
<b>A Guyana</b>											
0	5	11	90	114	115	29	19	4	2	10	399
1	2	14	124	128	115	35	25	5	0	11	459
2	1	3	95	111	148	34	19	2	5	8	426
3	0	1	22	130	134	54	34	7	6	11	399
4	1	1	16	17	144	79	64	5	5	5	337
5	2	4	22	20	38	102	57	18	8	17	288
6	0	0	22	13	48	12	98	21	10	21	245
7	1	0	12	12	36	14	12	56	13	26	182
8	1	0	12	12	25	6	18	0	27	34	135
9+	2	0	14	20	39	26	11	1	3	111	143
Total	15	34	429	577	842	391	357	119	79	254	3097
<b>B Jamaica</b>											
0	6	15	94	54	57	9	15	0	2	7	259
1	0	24	120	86	87	8	18	4	1	1	349
2	2	4	73	88	115	11	21	1	3	3	321
3	3	2	17	69	118	26	26	0	4	4	269
4	4	1	29	6	78	25	31	3	6	5	188
5	4	3	21	17	23	32	30	10	3	8	151
6	1	3	13	13	30	2	32	11	6	18	129
7	1	5	11	7	23	0	4	26	9	7	93
8	1	1	12	7	26	1	5	1	24	11	89
9+	3	3	13	6	32	10	16	1	3	53	140
Total	25	61	403	353	589	124	198	57	61	117	1988
<b>C Trinidad and Tobago</b>											
0	3	6	200	132	167	16	20	1	3	3	551
1	3	13	177	138	151	21	15	1	1	3	524
2	1	9	140	101	243	25	22	2	1	7	551
3	0	7	32	94	167	37	23	1	2	1	363
4	3	6	39	14	156	32	42	5	7	4	308
5	4	6	25	28	54	44	48	9	4	9	231
6	4	3	24	15	50	3	35	6	7	10	158
7	2	2	15	9	49	8	12	22	2	4	124
8	3	1	15	7	32	6	6	0	11	6	86
9+	1	2	12	6	54	9	16	3	3	37	143
Total	22	54	681	546	1123	201	240	49	41	85	3040

desired one either in order to avoid implying to an interviewer that any of their children are unwanted or that they have failed as planners, or else because they have genuinely come to want the births that occurred after the stopping point was reached. Such upward revisions where desired family size is amended to conform with actual size are commonly called 'rationalization effects'.

Table 16, which shows the desired family size distribution at each parity, indicates that quite sizable numbers of women report desired family size less than actual size.

**Table 17** Cumulated desired family size distributions: Guyana, Jamaica and Trinidad and Tobago

Actual family size i	Cumulative distribution; percentages desiring										Mean
	0 or more	1 or more	2 or more	3 or more	4 or more	5 or more	6 or more	7 or more	8 or more	9 or more	
<b>A Guyana</b>											
0	100.0	98.7	96.0	73.4	44.9	16.0	8.8	4.0	3.0	2.5	3.47
1	100.0	99.6	96.5	69.5	41.6	16.6	8.9	3.5	2.4	2.4	3.41
2	100.0	99.8	99.1	76.8	50.7	16.0	8.0	3.5	3.1	1.9	3.59
3	100.0	100.0	99.7	94.2	61.7	28.1	14.5	6.0	4.3	2.8	4.11
4	100.0	99.7	99.4	94.7	89.6	46.9	23.4	4.5	3.0	1.5	4.63
5	100.0	99.3	97.9	90.3	83.3	70.1	34.7	14.9	8.7	5.9	5.05
6	100.0	100.0	100.0	91.0	85.7	66.1	61.2	21.2	12.7	8.6	5.47
7	100.0	99.5	99.5	92.9	86.3	66.5	58.8	52.2	21.4	14.3	5.91
8	100.0	99.3	99.3	90.4	81.5	63.0	58.5	45.2	45.2	25.2	6.07
9	100.0	99.1	99.1	93.0	84.1	67.0	55.5	50.7	50.2	48.9	6.48
0-9+	100.0	99.5	98.4	84.6	65.9	38.7	26.1	14.6	10.8	8.2	4.47
<b>B Jamaica</b>											
0	100.0	97.7	91.9	55.6	34.7	12.7	9.3	3.5	3.5	2.7	3.12
1	100.0	100.0	93.1	58.7	34.1	9.2	6.9	1.7	0.6	0.3	3.05
2	100.0	99.4	98.1	75.4	48.0	12.1	8.7	2.2	1.9	0.9	3.47
3	100.0	98.9	98.1	91.8	66.2	22.3	12.6	3.0	3.0	1.5	3.97
4	100.0	97.9	97.3	81.9	78.7	37.2	23.9	7.4	5.9	2.7	4.33
5	100.0	97.4	95.4	81.5	70.2	55.0	33.8	13.9	7.3	5.3	4.60
6	100.0	99.2	96.9	86.8	76.7	53.5	51.9	27.1	18.6	14.0	5.25
7	100.0	98.9	93.5	81.7	74.2	49.5	49.5	45.2	17.2	7.5	5.17
8	100.0	98.9	97.8	84.3	76.4	47.2	46.1	40.4	39.3	12.4	5.43
9	100.0	97.9	95.7	86.4	82.1	59.3	52.1	40.7	40.0	37.9	5.92
0-9+	100.0	98.7	95.7	75.4	57.6	28.0	21.8	11.8	9.0	5.9	4.04
<b>C Trinidad and Tobago</b>											
0	100.0	99.5	98.4	62.1	38.1	7.8	4.9	1.3	1.1	0.5	3.14
1	100.0	99.4	96.9	63.1	36.7	7.8	3.8	1.0	0.8	0.6	3.10
2	100.0	99.8	98.2	72.8	54.4	10.3	5.8	1.8	1.5	1.3	3.46
3	100.0	100.0	98.1	89.3	63.5	17.6	7.4	1.1	0.8	0.3	3.78
4	100.0	99.0	97.1	84.4	79.9	29.2	18.8	5.2	3.6	1.3	4.19
5	100.0	98.3	95.7	84.8	72.7	49.4	30.3	9.5	5.6	3.9	4.50
6	100.0	97.5	95.5	80.3	70.7	38.9	36.9	14.6	10.8	6.4	4.52
7	100.0	98.4	96.8	84.8	77.6	38.4	32.0	22.4	4.8	3.2	4.58
8	100.0	96.6	95.4	78.2	70.1	33.3	26.4	19.5	19.5	6.9	4.46
9	100.0	99.3	97.9	89.5	85.3	47.6	41.3	30.1	28.0	25.9	5.45
0-9+	100.0	99.2	97.4	75.1	57.2	20.2	13.6	5.8	4.1	2.8	3.75

When the detailed percentages are added together, the pattern shown in table 18 emerges for the three countries.

These results indicate that large numbers of women do not rationalize all of their births (ie they do not automatically revise their desired family size to correspond with their actual family size), though the possibility that they raise their *ex ante* desired family size somewhat with each increase in actual size cannot be resolved without longitudinal data that keep track of changes in actual and desired family size.

On the other hand, the main diagonal cells in table 16 almost invariably contain disproportionately large numbers of respondents at parities 4 and above. This is true for all three countries (five out of six for Guyana and Trinidad and Tobago and six out of six for Jamaica), and points to some degree of preference for the current family size among high parity women, which in turn indicates some amount of either rationalization, or implementation, or both. Table 18 also suggests some rationalization, especially in Guyana.

**Table 18** Percentages who have exceeded desired family size by parity

Parity	Guyana	Jamaica	Trinidad and Tobago
1	0.4	0.0	0.6
2	0.9	1.8	1.8
3	5.8	8.2	10.7
4	10.3	21.3	20.1
5	29.8	40.5	50.6
6	38.8	48.8	63.0
7	47.8	54.8	77.6
8	54.7	60.7	80.5
9+	51.1	62.1	74.1

However, it is clear from table 18 that by no means all of the high parity women rationalize all of their children, though only a longitudinal study could show whether or not they rationalize some.

### Conclusions

The basic conclusions that emerge from the above data are (1) modernization is unimportant in explaining the rise in desired family size with that in actual family size in the cross-sectional data we have, (2) underestimation effects are evidently a major component in explaining much of the rise, (3) large numbers of women do not rationalize all of their births, (4) there is some tendency to choose actual family size as desired size at parity 4 and higher, which could be due to either rationalization or implementation.

One problem in arriving at a thorough quantitative assessment of the relative role of these factors in explaining the rise in desired family size with that in actual family size is that it is not possible to positively identify 'implementers' from the data at hand. This would require knowing the parity at which respondents first reached desired family size and their subsequent history of contraceptive use.

On the other hand, the fact that much of the rise clearly has to be attributed to underestimation is helpful in making decisions about how to analyse the data.

## 2.2 PROPORTIONS WANTING ADDITIONAL CHILDREN

### Pitfalls in analysing proportions wanting more

We should first emphasize that the desire for additional children is in several respects an appealing and very useful variable. Much of the appeal lies in the apparent simplicity of the question, and indeed it seems only logical to suppose that while it may be difficult for a respondent to assess how many children she wants in all, it is comparatively easy for her to say whether she wants additional children or to terminate childbearing. Additionally, and perhaps most important, information on proportions wanting more children has played a critical role in demonstrating that in many developing countries there are massive numbers of women who do not want additional children, and also in estimating the extent of potential need for contraception for purposes of stopping childbearing. The variable is

useful, also, in constructing synthetic cohort estimates of desired family size.

Despite these extremely useful properties, information on whether additional children are wanted can be a potentially misleading indicator of relative reproductive motivation both between countries and between socio-economic subgroups, if we have any reason to believe the groups vary in their contraceptive behaviour and contraceptive success or in the speed with which they reproduce. A particularly striking example is the contrast between Jordan and Nepal:

	Jordan	Nepal
Per cent wanting more children	59	70
Mean desired family size	6.2	3.9

As can be seen, Jordan has a substantially lower proportion wanting additional children, which might easily be misconstrued as meaning that demand for children is lower in Jordan than it is in Nepal. Yet it is clear that, with a desired family size of 6.2, Jordanian women have much higher size preferences than do Nepalese.

The three Caribbean countries offer a further example of this contradictory association between proportions wanting more children and desired family size, as follows:

	Guyana	Jamaica	Trinidad and Tobago
Per cent wanting more children	45	49	53
Mean desired family size	4.3	3.9	3.7

The central mechanism which underlies these apparent anomalies is differences in speed of reproduction. Given two groups with identical desired family size distributions, it is obvious that the group which reproduces fastest will reach desired family size soonest and, observed in a cross-sectional survey, will have lower proportions wanting more children. The anomaly between Nepal and Jordan is simply the result of much slower reproduction in Nepal, since it takes Nepalese women longer to reach their reproductive targets than it does Jordanians, so that Jordanian women manage to maintain high desired family size and relatively low proportions wanting more children through having very closely spaced births.

The anomaly between Guyana, Jamaica and Trinidad and Tobago can most probably be similarly explained, since there are very clear differences in the extent of contraceptive use for childspacing<sup>1</sup> purposes between the three countries, 26 per cent of Guyanese women who want more children being contraceptive users versus 36 per cent of Jamaican women, and 50 per cent of women in Trinidad and Tobago.<sup>2</sup>

<sup>1</sup> Contraceptive use among women who want more children is usually because they want to space the next birth, but there will also probably be instances where it is at the behest of the husband or partner, among women who want an immediate pregnancy.

<sup>2</sup> Note that the figures given here involve defining 'wanting more children' as including pregnant women who want the current pregnancy but who do not want any children after that.

### Parity-specific controls and proportions wanting more

It might seem that this 'speed of reproduction' distortion to proportions wanting more children could be solved if we controlled for number of living children, and compared parity-specific proportions wanting more children. It can be shown, however, that even at the parity-specific level of measurement, differential use of contraception can still produce very major differences in proportions wanting more children.

Consider again the case of two groups with identical desired distributions, and assume that women in group A successfully use contraception for purposes of stopping childbearing, while women in group B never use contraception. The consequence of these patterns of behaviour will be that women in group A will stop at their various desired family sizes, and at each parity where they stop they will contribute purely to the denominator of the proportion wanting more children and nothing to the numerator. Women in group B, on the other hand, will progress from parity to parity at equal speed, regardless of whether or not they want additional children, so there will be no inflation of denominators; there will thus be higher proportions wanting additional children in this group purely as a consequence of their lesser use of contraception for terminating childbearing, even though their underlying family size preferences are identical.

The potential effect is far from trivial. Reproduced below is the result of a detailed and fairly realistic month by month simulation of reproduction behaviour that assumed an identical desired family size distribution (taken from Japan, 1950) in which one group uses highly effective contraception to terminate childbearing while the other uses none. As can be seen, the contraceptive users have very much lower proportions wanting additional children at parities 0-3, even though both groups share the same family size preference distribution.

Parity <sup>a</sup> i	Per cent wanting more children		Desired <sup>b</sup> family size distribution
	Effective contraception	No contraception	
0	72	96	4
1	68	91	5
2	38	69	21
3	19	36	34
4	16	16	20
5	0	0	16
6	0	0	0
Total			100

<sup>a</sup> Parity refers to number of living children.

<sup>b</sup> Percentages desiring exactly *i* children.

Source: Lightbourne (1977, p 71)

### Effects of contraception for spacing purposes

We have just seen that contraceptive use for terminating childbearing can profoundly depress parity-specific proportions wanting more children. But to the extent that women use contraception at a particular parity for purposes of childspacing, the opposite effect will occur, since if sufficient numbers of 'spacers' wait sufficiently long at a given parity they will inflate both numerator and

denominator at that parity sufficiently to offset any contraceptive use for stopping purposes and to substantially raise the proportion wanting more children. If one compares populations which are equally successful in terminating childbearing, then, with identical desired family size distributions, the one which spaces most will have higher proportions wanting more children.

As a concrete example of this spacing effect, consider figures 1 and 2, which, respectively, compare parity-specific proportions wanting more children in Guyana, Jamaica and Trinidad and Tobago and mean desired family size at each parity. We see that mean desired family size is somewhat lower at all parities in Trinidad and Tobago yet parity-specific proportions wanting more children are substantially higher, and there is a considerable amount of evidence to suggest that this reflects relatively widespread and successful use of contraception among women who want more children in Trinidad and Tobago.

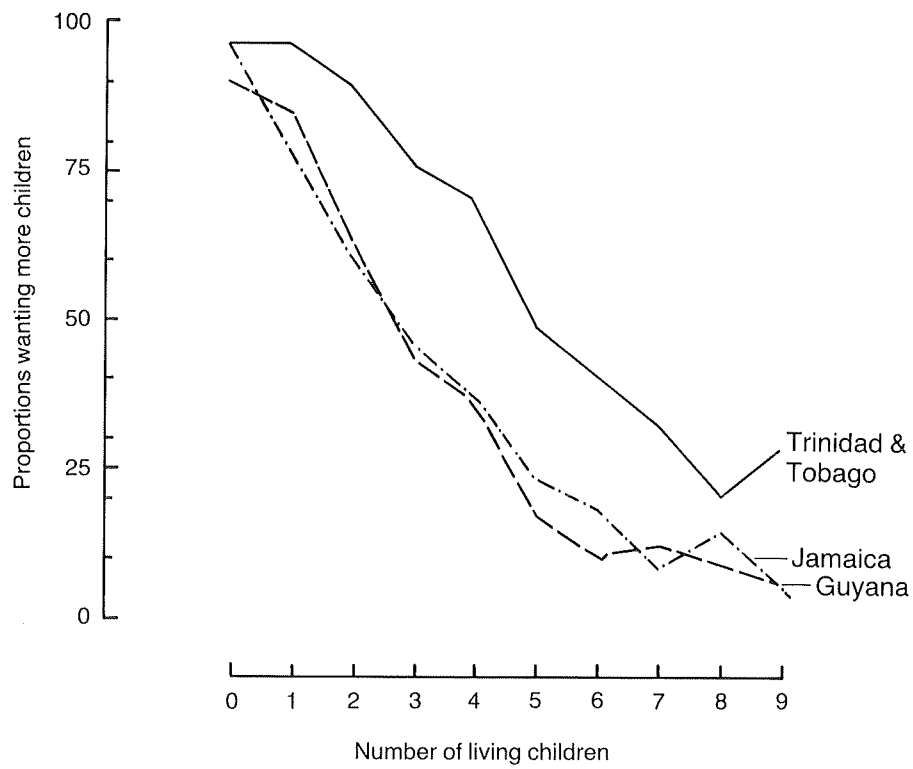
It is with these caveats in mind that we turn now to analysing the actual data on proportions wanting additional children in the three countries concerned.

### Variation by age and parity in proportions wanting more

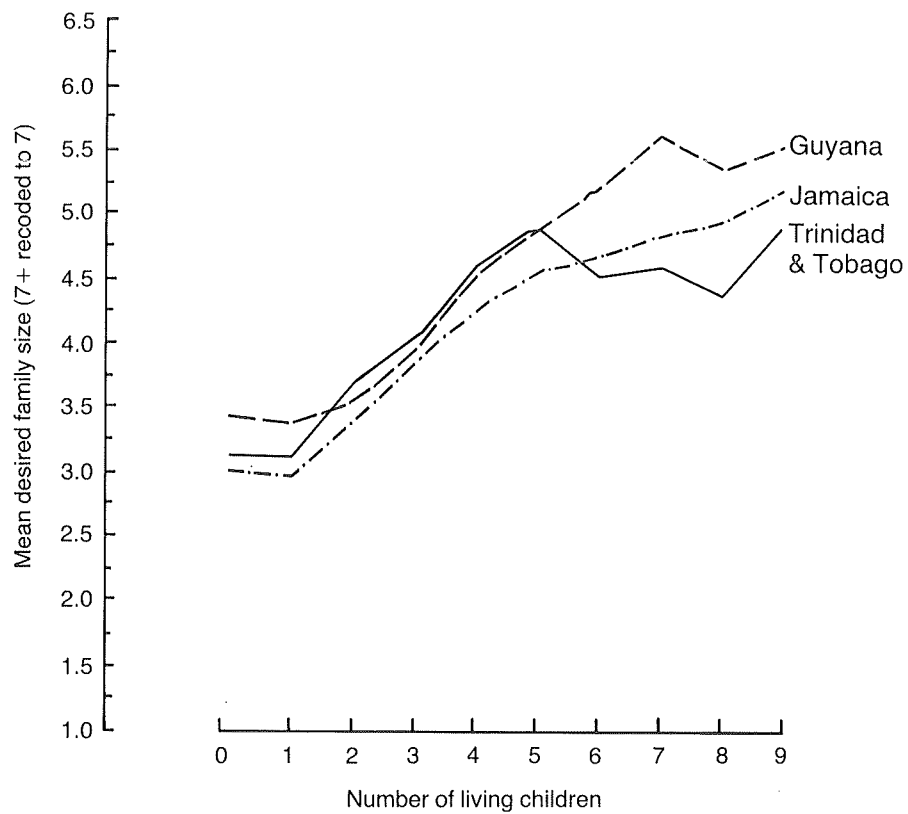
A particularly interesting finding noted in the Jamaica Fertility Survey First Country report is the tendency for the percentage wanting more children to rise with age up to age 30, and then to fall quite substantially at subsequent ages, once number of living children is controlled for.

Table 19 indicates that when multiple classification analysis is used to control for parity, the same tendency is observed not only in Jamaica but also in Guyana and Trinidad and Tobago. It is intriguing that this noticeable fall in the proportion wanting more children after age 30 is not restricted to these three Caribbean countries. Table 20 shows that in ten other countries for which data are readily available there is the same tendency towards a marked fall in the proportion wanting additional children after age 30 or 35 when parity is controlled for though it is much more pronounced in some countries than in others. This finding differs from the results on mean desired family size, where, after parity was controlled for, no definite pattern by age remained. Clearly the question on current preference - wanting more - is capturing something different from the lifetime preference question.

Why is there such a universal fall-off in percentages wanting more children beyond age 30 or 35, after we adjust for parity? To some extent it may be because women want to avoid births once they have adolescent children. Another possible interpretation is that women who bear their children at longer intervals, either through deliberately spacing births, or through more extended breastfeeding or through lower fecundability, are likely to become more aware of the costs of childbearing as they age. If this latter interpretation is correct, then there is a clear policy implication to the effect that women who postpone childbearing are likely to want fewer children in the long run, and that promotion of contraception for childspacing purposes is likely to have fertility-reducing effects above and beyond increasing the mean length between generations and habituating couples to contraceptive practice before they reach their desired stopping point.



**Figure 1** Proportions wanting more children: Guyana, Jamaica and Trinidad and Tobago



**Figure 2** Average desired family size in Guyana, Jamaica and Trinidad and Tobago: based on currently married and fecund women

**Table 19** Deviations from grand mean percentage wanting more children by age and family size: Guyana, Jamaica and Trinidad and Tobago

Guyana: Deviations from grand mean of 44.89 per cent				Jamaica: Deviations from grand mean of 48.93 per cent				Trinidad and Tobago: Deviations from grand mean of 53.32 per cent			
Age	Unadj. devns	Adj. for N family size		Age	Unadj. devns	Adj. for N family size		Age	Unadj. devns	Adj. for N family size	
15-19	28.42	-4.68	311	15-19	28.68	3.58	201	15-19	35.47	6.79	231
20-24	22.47	5.34	625	20-24	22.06	9.11	417	20-24	27.67	11.02	603
25-29	10.25	9.16	613	25-29	12.81	11.31	345	25-29	13.03	8.55	586
30-34	-11.14	3.23	474	30-34	-13.91	-5.32	277	30-34	-6.58	0.64	538
35-39	-21.43	-3.97	405	35-39	-20.94	-8.52	268	35-39	-23.45	-10.04	400
40-44	-28.45	-14.31	298	40-44	-24.73	-10.73	219	40-44	-35.11	-16.87	306
45-49	-32.03	-15.03	210	45-49	-32.38	-16.64	139	45-49	-37.98	-18.89	232
			2936				1866				2895
F-ratio	109.690	17.425		F-ratio	71.636	12.595		F-ratio	160.990	98.079	
Prob <sup>a</sup>	0.000	0.000		Prob	0.000	0.000		Prob	0.000	0.000	
Family size <sup>b</sup>	Unadj. devns	Adj. for N age		Family size <sup>a</sup>	Unadj. devns	Adj. for N age		Family size <sup>a</sup>	Unadj. devns	Adj. for N age	
0	46.08	45.95	310	0	47.30	44.04	212	0	42.66	36.90	436
1	38.26	37.26	451	1	27.52	23.53	327	1	33.90	28.24	530
2	13.92	10.77	437	2	11.71	7.62	315	2	7.81	4.59	557
3	-1.39	-4.40	400	3	-2.05	-4.16	256	3	-12.62	-13.38	367
4	-9.26	-11.59	334	4	-13.06	-14.50	184	4	-28.88	-25.84	297
5	-28.40	-28.41	285	5	-26.41	-23.25	151	5	-32.36	-26.87	221
6	-34.53	-32.86	222	6	-29.76	-23.99	120	6	-38.80	-29.87	153
7	-33.23	-27.94	163	7	-41.24	-32.64	78	7	-43.02	-33.24	120
8	-35.95	-29.52	123	8	-35.45	-26.92	89	8	-46.01	-32.91	78
9+	-39.68	-31.05	211	9+	-43.70	-32.56	134	9+	-43.44	-29.33	136
			2936				1866				2985
F-ratio	164.115	102.638		F-ratio	88.587	51.421		F-ratio	199.339	98.079	
Prob	0.000	0.000		Prob	0.000	0.000		Prob	0.000	0.000	

<sup>a</sup>Prob refers to the probability that all percentages are identical.

<sup>b</sup>Family size here refers to number of living children, counting a current pregnancy as a living child.

**Table 20** Percentages wanting more children by age, adjusted for the effect of number of living children using multiple classification analysis

Country	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Grand mean
<b>A Asia and Pacific</b>								
Fiji	53	57	56	52	42	35	32	50
Indonesia	70	72	67	58	51	42	32	61
Jordan	68	72	66	55	46	37	39	58
Korea, Rep. of	50	44	38	24	19	15	16	28
Malaysia	67	67	64	55	48	37	35	55
Nepal	75	74	74	70	63	55	52	70
Pakistan	63	64	62	56	49	42	38	57
Philippines	51	54	51	48	42	37	35	46
<b>B Latin America and Caribbean</b>								
Guyana	40	50	54	48	41	31	30	45
Jamaica	52	58	60	45	41	37	32	49
Panama	-	51	41	35	31	27	22	37
Peru	36	42	43	39	37	35	34	39
Trinidad and Tobago	60	65	62	54	44	37	35	53



Table 19 also indicates that adjusting for age has little effect on the parity-specific deviations from the grand mean for parities below 5, but above that parity it raises the proportions wanting more children quite substantially in all three countries. The broad implication of this finding is that higher parity women would be more likely to desire additional children if they were younger, since the adjustment process in effect involves assuming the age distribution of the population at large. Similarly, the data imply that if low parity women were somewhat older, they would be less likely to want additional children.

A notable feature of table 19 is the large number of women at parity 0 who said they did not want any children, and also the sizeable numbers at family size 1 who said they wanted no more children. When parity 0 women saying they do not want any children are classified by age, we find the desire to have none confined largely to older women, presumably due to self-selection of a volitional or non-volitional nature.

Percentages not wanting any children by age, for parity-0 women

Country	15-49	15-34	35-49
Guyana	9 (310)	4 (263)	36 (47)
Jamaica	4 (212)	2 (175)	14 (37)
Trinidad and Tobago	4 (431)	2 (385)	16 (51)

NOTE: Bracketed number are denominators.

The same, however, is not true of parity 1 women, since in all three countries quite substantial numbers of younger parity 1 women aged 15-24 said they wanted to stop childbearing. As can be seen in table 21, the figures are 15

**Table 21** Profile of women with one child

Proportions wanting no more	Guyana	Jamaica	Trinidad & Tobago
<b>All women</b>			
<i>Age group</i>			
15-24	15 (304)	19 (158)	8 (291)
25-34	9 (97)	13 (80)	9 (181)
35-49	42 (50)	53 (47)	46 (59)
All women	17 (451)	24 (327)	13 (530)
<i>Union status</i>			
Married	14 (279)	18 (89)	89 (269)
Common law	26 (54)	24 (106)	84 (95)
Visiting	20 (118)	27 (132)	86 (166)
<i>Ethnicity</i>			
Non-Indian	17 (244)	—	13 (341)
Indian	16 (207)	—	13 (189)
<i>Among 'want no more' cases</i>			
% desiring 0 or 1 child	16 (76)	72 (75)	18 (68)
% using contraception	13 (76)	20 (75)	47 (68)

NOTE: Bracketed numbers are denominators.

per cent in Guyana, 19 per cent in Jamaica and 8 per cent in Trinidad and Tobago. To probe further, we looked at desired family size among parity 1 women recorded as wanting no more children; in Guyana and Trinidad and Tobago, more than 80 per cent said they desired two or more children, and in Jamaica 64 per cent said the same. Contraceptive use among parity 1 women who wanted no more children was decidedly on the low side, being 13 per cent in Guyana (versus a national average of 41 per cent), 20 per cent in Jamaica as against 50 per cent using among all parities, and a relatively high 47 per cent in Trinidad and Tobago compared to the national average of 66 per cent among women who wanted no more children. In all three countries, married women with one child were least likely to say they wanted no more children, when compared to women in common law or visiting unions.

One conclusion is that these results suggest that the 'want no more' group are partly reporting an intention to space, especially among low parity, or young women. In addition, they may reflect instability of the current union – the respondent may not want any more children in this union but her preferred total family size could exceed the actual.

### 2.3 STABILITY OVER TIME IN DESIRED FAMILY SIZE

In interpreting the implications of the fertility preference data, it is obviously important to assess whether preferences are volatile or stable. Indeed, the writer recalls a conversation with a senior family planning administrator who asserted that the WFS preference data, while interesting, were out of date and thus of no practical value to his organization, because in his view reproductive motives were so changeable that only a very recent survey was likely to reflect the current situation.

It is therefore quite important to know whether this 'stale data' theory is supported or challenged by the available evidence. This will not, of course, prove matters one way or the other, but will provide some kind of indication as to whether the analysis has or has not a measure of contemporary relevance.

This chapter looks at two sources of evidence of change in preferences. The best form of evidence, examined first, comes in the form of time series, where one compares results from various surveys. A second and weaker form comes from looking at the cross-sectional data themselves to see whether older women have higher preferences than younger women. This second source is weaker because it is always possible that when preferences change they do so among all age groups, who, after all, are to a great degree subject to the same economic and social conditions, except that the young quite frequently have not secured an economic niche while older individuals have.

For Jamaica and Trinidad and Tobago, it has been possible to locate other surveys that asked questions on fertility preferences, enabling comparisons that will help indicate how much stability or change in preferences there is in these countries. For Guyana, unfortunately, we have been unable to locate any national-level survey asking about preferences, so the discussion below is necessarily limited to Jamaica and Trinidad and Tobago.

### Trends in Jamaican preferences

The 1979 Contraceptive Prevalence Survey asked respondents, 'How many children in all would you like to have?', and recoded responses of more than five children to 5. This survey indicated that in 1979 Jamaican women desired an average of 3.52 children (Powell 1980).

The 1975/6 Jamaica Fertility Survey asked, 'If you could choose exactly the number of children to have in your whole life, how many would that be?'. When the WFS responses of higher than five are recoded to 5 in order to allow comparison with the 1979 survey, the mean number chosen is 3.46.

A 1956 survey of 1368 women with a sixth-standard education or less, reported by Stycos and Back (1964), asked women, 'If you could live your life over, how many children in all would you like to have?'. When responses higher than five are recoded to 5, the mean number desired is 3.08 children (source: Roper Center Codebook to the 1956 survey, p. 20).

Taken at face value, these comparisons imply a rise in recoded number of children desired, from 3.1 in 1956 to 3.5 in 1975/6, and then no change between 1975/6 and 1979.

The comparison in table 22 of parity-specific means for 1956 and 1975/6 introduces some doubt as to whether the 1956 mean is really lower. At parities 0-2 the means are close. But above parity 2 the 1956 mean behaves unusually, and does not rise with each successive increase in parity (in most surveys the mean tends to increase as number of children rises).

An additional comparison between 1956 and 1975/6 supports the theory of a rise. Both surveys asked respondents whether they wanted more children, 'Do you want to have any more children?' (1956 survey), and in the 1975/6 survey, 'Do you want to have another child sometime?' (asked of non-pregnant women) and 'Do you want to have another child sometime, in addition to the one you are expecting?' (asked of pregnant women).

**Table 22** Desired family size in 1956 and 1975/6 by parity: Jamaica

Parity no of living children)	1956		1975/6	
	Mean	N	Mean	N
0	3.28	378	3.25	109
1	3.02	388	3.07	207
2	3.50	349	3.36	233
3	3.36	236	3.94	195
4	3.72	162	4.38	173
5	3.36	116	4.60	132
6	3.34	103	5.02	95
7	3.78	49	4.76	50
8	3.91	33	6.05	59
9	3.81	21	6.24	38
Total	3.36	1835	3.73 <sup>a</sup>	1291

<sup>a</sup>1975/6 overall mean is standardized on N for 1956. Source: Special tabulations of 1956 data tape from Roper Center; N for 1956 is weighted. Data for 1975/6 restricted to women aged 15-40 with sixth-standard or less education.

The parity-specific percentages wanting more children (defining parity as number of living children and excluding pregnant women from the 1975/6 figures) are as follows, for women aged 14-40 in the 1956 survey and for women aged 15-40 with sixth-standard or less education in the 1975/6 survey.

	Parity									
	0	1	2	3	4	5	6	7	8	9+
1956	93	65	45	34	24	16	8	19	28	18
1975/6	97	83	68	54	44	25	23	5	19	8

Source: Special tabulations of 1956 and 1975/6 surveys

These results contradict the expectation that, with the modernization that took place between 1956 and the mid-1970s, preferences would have fallen rather than risen, with rising proportions educated, a sharp decline in the agricultural sector and a rise in proportions urban. On the other hand, real income did rise over the period, and perhaps the explanation lies there. Alternatively, the 1956 survey responses could have been affected by the including of the questions just discussed as part of a large number of items probing preferences, which may have prompted respondents into lowering their estimates of number preferred and whether more were wanted. Moreover, differences in the wording of the questions (the 1956 question is somewhat more hypothetical) could also help to account for the different results.

Set against the apparent rise in preferences between 1956 and 1975/6 and the invariance between 1975/6 and 1979, current use of contraception rose from 2 per cent in 1956 (Roper Center codebook KAPS4701, p. 41) among women 14-39 to 40 per cent in 1975/6 among women aged 15-45 to 55 per cent in 1979 among similarly aged women.

These findings suggest that when preferences are moderate to begin with, contraceptive use can rise markedly without reducing them at all. They also imply that while contraception practice appears to have changed markedly between 1975/6 and 1979, preferences remained virtually static. Longitudinal analyses of Taiwanese data give similar findings to these (Freedman *et al* 1965 and Jeejeebhoy 1981).

### Trends in Trinidad and Tobago preferences

A nationally representative 1970 survey of Trinidad and Tobago which included 1988 in union women aged 15-44 asked respondents, 'How many children do you think a woman should have in her lifetime?', and recoded responses of more than five to 5 (Harewood and Abdullah 1971 and Harewood 1978). The average ideal number of children reported by women in union at time of interview was 3.61 (Harewood and Abdullah 1971 appendix III). The wording used in the 1970 survey question obviously asks for a generalized ideal, which is somewhat different in concept from the personal desired family size requested in the 1977 Trinidad and Tobago Fertility Survey (TTFS), where respondents were asked the standard WFS question,

**Table 23** Total number desired in the 1977 TTFS compared with ideal family size in the 1970 survey by parity: Trinidad and Tobago

Parity	1970	1977
0	3.5	3.1
1	3.5	3.1
2	3.5	3.4
3	3.6	3.8
4	3.7	4.1
5+	3.6	4.4

'If you could choose exactly the number of children to have in your whole life, how many would that be?'

When the TTFS responses of higher than five are recoded to 5, and restricted to the 2810 respondents aged 15-44, the mean number desired is 3.44.

This may seem to imply a slight fall in preferences over the period. But when the parity-specific means for 1970 and 1977 are compared in table 23, it becomes apparent that the two surveys evoked somewhat different responses; the personal desired family size asked for in the 1977 survey correlates much more strongly with actual family size than does the generalized ideal size requested in the 1970 survey.

Despite the lack of exact comparability, however, the responses at parities 2 and 3 are quite close, and when one considers the evidence offered concerning underestimation effects (section 2.1), it seems probable that there has been little change over the periods, since there are strong grounds for believing that women at parities 0 and 1 tend to revise their desired family size upwards as they age and have more children.

Overall, these comparisons suggest little change in preferences between the two surveys, though the lack of comparability in the question on total number preferred requires a measure of caution to be added. The comparisons also illustrate the desirability of inserting comparable questions in successive surveys.

It is interesting that during the same period current use of contraception rose from 43.5 per cent in 1970 among currently in union women to 54 per cent in 1977 among in union women aged 15-44. Here, then, is a second instance where a marked rise in contraceptive use occurred without any apparent shift in preferences.

#### Cross-sectional evidence

Several analyses of survey data have classified mean desired family size by age without controlling for number of living children, and, finding that mean desired family

**Table 24** Mean desired family size by age and parity among all currently in union women

Age	Guyana	Jamaica	Trinidad and Tobago
<b>A Parity 2</b>			
15-24	3.51 (247)	3.42 (175)	3.35 (173)
25-34	3.74 (159)	3.26 (130)	3.51 (285)
35-39	3.66 (58)	3.53 (79)	3.40 (122)
Prob <sup>a</sup>	0.437	0.347	0.570
<b>B Parity 3</b>			
15-24	3.93 (121)	3.97 (92)	4.08 (85)
25-34	3.96 (204)	3.85 (129)	3.71 (187)
35-49	4.36 (26)	3.90 (71)	3.59 (116)
Prob <sup>a</sup>	0.074	0.824	0.015
<b>C Parity 4</b>			
15-24	4.68 (59)	4.59 (49)	4.33 (26)
25-34	4.64 (198)	4.58 (106)	4.25 (150)
35-39	4.63 (102)	4.07 (74)	4.06 (139)
Prob <sup>a</sup>	0.976	0.217	0.492

<sup>a</sup>Probability all means are the same.

NOTES: Desired number of children not recoded; 'parity' here refers to number of living children, counting pregnancy as a living child.

size indeed rises with age, have somewhat rashly concluded that older women prefer more children than younger women.

A recent analysis of 19 WFS surveys, however, including Guyana and Jamaica but not Trinidad and Tobago, found that in 17 of the 19 there were no demonstrable differences in desired family size by age once parity was controlled for by cross-tabulation (Lightbourne and MacDonald 1982, p. 34). A similar cross-tabulation for the three countries discussed here reveals the same result, in table 24.

The regression analysis presented as table 23 supports this conclusion, showing that once number of living children is controlled for, there is no general pattern of desired family size increasing with age. Similar results have emerged for countries with little or no contraceptive use, which greatly undermines the counterargument that older women who desire fewer children use contraception to select themselves to low parities and thus create a spurious lack of relationship between age and number desired.

Taking the rather imperfect time series evidence and the cross-sectional results together, there is strong evidence that there has been little recent change in number preferences yet, at the same time a substantial increase in contraceptive use.

### 3 Correlates of Fertility Preferences

This chapter focuses mainly on the strength of the relationship between socio-economic characteristics and two measures of fertility preferences, mean desired family size and proportion wanting no more children. It describes variation in preferences according to socio-economic characteristics and the strength of the relationships between preferences and these explanatory factors. A subsequent chapter (5) expands further on socio-economic characteristics, covering the subject of differential success in achieving fertility preferences among subgroups. However, three other factors of special interest for these countries are also treated in the present chapter, in separate sections: dissolution and remarriage (using marriage in a wide sense, to cover all unions) and preference for children of a particular sex for all three countries, and regional differentials in preferences for Jamaica alone.

#### 3.1 SOCIO-ECONOMIC FACTORS AND PREFERENCES

##### **Socio-economic factors and desired family size**

The introductory chapter described the regression technique used in the analysis. We include several characteristics of the respondent in the analysis (her place of residence, educational attainment, employment characteristics, religion and, in Guyana and Trinidad only, ethnicity) and two characteristics of the current or most recent partner (his occupation and educational attainment). Work characteristics of women are especially relevant in the Caribbean, where a large proportion of women work and a substantial proportion are heads of households. Ethnicity is relevant in the study of preferences because of the possibility of the traditional Hindu or Muslim values continuing to influence the Indian subgroup's preferences and fertility. The strong differentials in actual fertility which have been documented for socio-economic subgroups emphasize the need to determine whether or not differentials in fertility preferences are equally large. These findings are later related to actual fertility differentials among subgroups (in chapter 5), as it would be a very useful input into population planning to know whether fertility differences are due to differences in preferences or to differential success in achieving preferred family size.

The analyses were carried out for two base populations – all women in union and women whose first union began 0–59 months before the date of interview. The first base population is the one in general use. The second was used as an analytical strategy to resolve the problem of rationalization discussed in chapter 2. We borrowed this approach from a recent analysis of desired family size in the Philippines by Pullum, Immerwahr and Cabigon

(1981). Their solution to the problems posed by increase of desired family size with parity was to conduct several separate regressions, one containing all in union women that controlled for actual family size and a separate one for women who had been in a union for less than five years and hence lacked the opportunity to exceed desired family size and then rationalize undesired births. One theoretical difficulty with this 'less than five years' group, of course, is that their preferences may have not had time to crystallize, and this may well be a problem in the case of the West Indian data being considered, where there is a strong indication that many low parity women tend to understate the number of children they ultimately want.

One practical difficulty is that while the Philippines sample was about 9000 women, the West Indian samples are much smaller, being half that size for Guyana and Trinidad and Tobago and one third for Jamaica. It was therefore decided not to look at desired family size among women with a particular family size, but to adopt the strategy of analysing the differentials among in union women with 0–59 months elapsed since first union began (sometimes abbreviated MESFUB in the following discussion).

One obvious main problem in this repeat analysis, however, is that sample size is greatly reduced, so that a larger substantive differential is required to reach the same level of significance. A further adaptation needed for this second population was to control for differential exposure in a different manner. We control here for age at first union and months elapsed since first union began (MESFUB in the tables) as a substitute for number of living children and age.

Although we have performed both analyses, our discussion will concentrate on the results for all in union women, mentioning the second population only where interesting differences emerge. We briefly discuss some alternative techniques for standardizing by family size, then present the results on differentials in family size and differentials in proportions wanting more children.

As discussed earlier, in studying desired family size we adjust for actual family size in an effort to remove differentials that would otherwise occur as a result of rationalization of undesired births and of underestimation effects. While ordinary standardization on the basis of the overall population distribution by number of living children would be one way of accomplishing this, it is more convenient to use a regression procedure so as to integrate results into the more general framework of the multivariate analysis.

We verified that the regression procedure in fact approximates an ordinary standardization. We also tested two regression approaches, and found that they agree closely (use of nine dummy variables for single parities, or use of number of living children (NLC) as a continuous

Table 25 Adjusted and unadjusted mean desired family size among all currently in union women (columns 1-5) and women whose first union began 0-59 months before interview (columns 6-10); Guyana

	ALL CURRENTLY IN UNION WOMEN					WOMEN WHOSE FIRST UNION BEGAN 0-59 MONTHS PRIOR TO DATE OF SURVEY				
	Unad-just-ed means	Means adjusted for:				Unad-just-ed means	Means adjusted for:			
	NLC, Age	NLC, Age, All prior vari-ables	NLC, Age, All other vari-ables	No of women		AGFU, MESFU	AGFU, MESFU and All prior vari-ables	AGFU, MESFU and All other vari-ables	No of women	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ALL GUYANA	4.28	4.28	4.28	4.28	3097	3.41	3.41	3.41	3.41	2967
RESIDENCE STATUS										
Rural born, resides rural	4.38	4.28	4.28	4.33	2015	3.33	3.34	3.34	3.45	446
Rural born, resides urban	4.16	4.29	4.29	4.22	563	3.65	3.63	3.63	3.52	153
Urban born, resides urban	4.02	4.27	4.27	4.13	519	3.39	3.39	3.39	3.13	138
PROB VALUE	0.000	0.974	0.974	0.049		0.025	0.049	0.049	0.025	
ETHNICITY										
Non-Indian	4.37	4.48	4.52	4.51	1383	3.72	3.71	3.75	3.74	343
Indian	4.21	4.12	4.08	4.09	1714	3.14	3.15	3.11	3.12	394
PROB VALUE	0.007	0.000	0.000	0.000		0.000	0.000	0.000	0.002	
RELIGION										
Catholic	4.19	4.39	4.31	4.32	372	3.51	3.51	3.30	3.27	112
Other Christian	4.37	4.45	4.32	4.33	1218	3.71	3.70	3.46	3.42	272
Hindu	4.25	4.13	4.25	4.23	1168	3.14	3.16	3.40	3.45	272
Muslim	4.14	4.08	4.21	4.21	339	3.16	3.15	3.41	3.42	81
PROB VALUE	0.045	0.000	0.864	0.815		0.000	0.000	0.793	0.806	
RESPONDENT'S EDUCATION										
0-5 years	4.62	4.19	4.33	4.31	530	2.88	2.89	3.02	3.09	43
6-7 years	4.55	4.28	4.34	4.34	741	3.14	3.12	3.21	3.24	83
Completed primary	4.53	4.27	4.19	4.21	709	3.61	3.54	3.59	3.61	38
Incomplete secondary	3.80	4.32	4.27	4.28	766	3.46	3.48	3.47	3.50	408
Completed secondary	3.74	4.20	4.28	4.25	351	3.52	3.50	3.40	3.30	165
PROB VALUE	0.000	0.555	0.407	0.567		0.009	0.008	0.101	0.094	
UNION STATUS										
Married	4.31	4.22	4.26	4.26	2240	3.28	3.27	3.38	3.39	468
Common-law	4.39	4.31	4.22	4.25	423	3.44	3.43	3.34	3.41	66
Visiting	4.01	4.58	4.44	4.42	434	3.70	3.72	3.49	3.45	203
PROB VALUE	0.001	0.000	0.073	0.168		0.000	0.000	0.664	0.936	
R'S LATEST OCCUPATION										
Prof-clerical-shop assistant	3.96	4.30	4.23	4.27	506	3.55	3.55	3.43	3.26	173
Services-street vendors	4.49	4.35	4.24	4.34	658	3.54	3.51	3.42	3.34	105
Skilled-unskilled manual	4.20	4.21	4.18	4.26	249	3.56	3.53	3.52	3.37	34
Agriculture	4.94	4.44	4.49	4.56	281	3.05	3.01	3.17	3.01	20
Never worked	4.18	4.22	4.29	4.20	1403	3.32	3.33	3.40	3.51	405
PROB VALUE	0.000	0.110	0.134	0.087		0.108	0.199	0.910	0.723	
WORKING NOW ?										
Now working	4.42	4.40	4.37	4.44	877	3.68	3.67	3.63	3.68	172
Not now working	4.22	4.23	4.24	4.21	2220	3.33	3.33	3.34	3.33	565
PROB VALUE	0.003	0.006	0.078	0.004		0.001	0.003	0.051	0.027	
WORKED BEFORE 1ST BIRTH ?										
Worked before 1st birth	4.32	4.33	4.29	4.22	1139	3.53	3.34	3.58	3.52	283
Did not work before 1st	4.21	4.25	4.27	4.31	1958	3.33	3.53	3.30	3.34	454
PROB VALUE	0.097	0.140	0.751	0.255		0.042	0.063	0.166	0.447	
WORKED AFTER 1ST BIRTH ?										
Worked after 1st birth	4.51	4.29	4.08	4.08	1199	3.56	3.40	3.27	3.28	137
Did not work after 1st	4.13	4.28	4.41	4.41	1898	3.37	3.47	3.44	3.44	600
PROB VALUE	0.000	0.821	0.001	0.001		0.120	0.549	0.348	0.363	

Table 25, continued

	ALL CURRENTLY IN UNION WOMEN					WOMEN WHOSE FIRST UNION BEGAN 0-59 MONTHS PRIOR TO DATE OF SURVEY				
	Unad-just-ed means	Means adjusted for:				Unad-just-ed means	Means adjusted for:			
	NLC, Age	NLC, Age, All prior variables	NLC, Age, All other variables	No of women		AGFU, MESFU	AGFU, MESFU and All prior variables	AGFU, MESFU and All other variables	No of women	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>HUSBAND/PARTNER'S EDUCATION</b>										
0-5 years	4.47	4.24	4.26	4.25	587	3.20	3.19	3.28	3.27	95
6-7 years	4.51	4.21	4.22	4.21	584	3.25	3.26	3.40	3.40	75
Completed primary	4.47	4.29	4.26	4.26	866	3.48	3.46	3.38	3.38	96
Incomplete secondary	3.89	4.30	4.30	4.31	549	3.37	3.38	3.38	3.38	264
Completed secondary	3.89	4.37	4.38	4.39	511	3.57	3.58	3.53	3.53	207
PROB VALUE	0.000	0.442	0.613	0.563		0.105	0.127	0.658	0.660	
<b>HUSB/PARTNER'S OCCUPATION</b>										
Prof-tech-admin-clerical	4.03	4.30	4.25	4.25	496	3.52	3.53	3.40	3.40	145
Services-sales	4.17	4.29	4.23	4.23	534	3.59	3.59	3.44	3.44	147
Agriculture	4.57	4.31	4.40	4.40	692	3.23	3.26	3.52	3.52	128
Skilled-unskilled manual	4.26	4.25	4.25	4.25	1375	3.34	3.34	3.35	3.35	317
PROB VALUE	0.000	0.812	0.202	0.202		0.064	0.081	0.649	0.649	

Note: Desired family sizes exceeding 7 were reset to 7. Means in column 2 were adjusted for NLC (number of living children), NLC squared, age, and age squared. Means in column 3 were adjusted for all variables listed above the variable in question (e.g. means for religion were adjusted for residence status and ethnicity). Means for a given variable in column 4 were adjusted for all other variables shown. Means in column 7 were adjusted for AGFU (age at first union), age at first union squared, MESFU (months elapsed since first union began), and MESFU squared. Prob values refer to the probability that all of the means are the same as the mean of the reference category, where reference category is always the last category for each variable (e.g. visiting is the reference category for the union status variable).

variable and NLC squared). On the strength of this test we decided to use the second alternative, with continuous variables.

#### **Guyana: Socio-economic differentials in desired family size**

##### *Guyana: Results for all in union women*

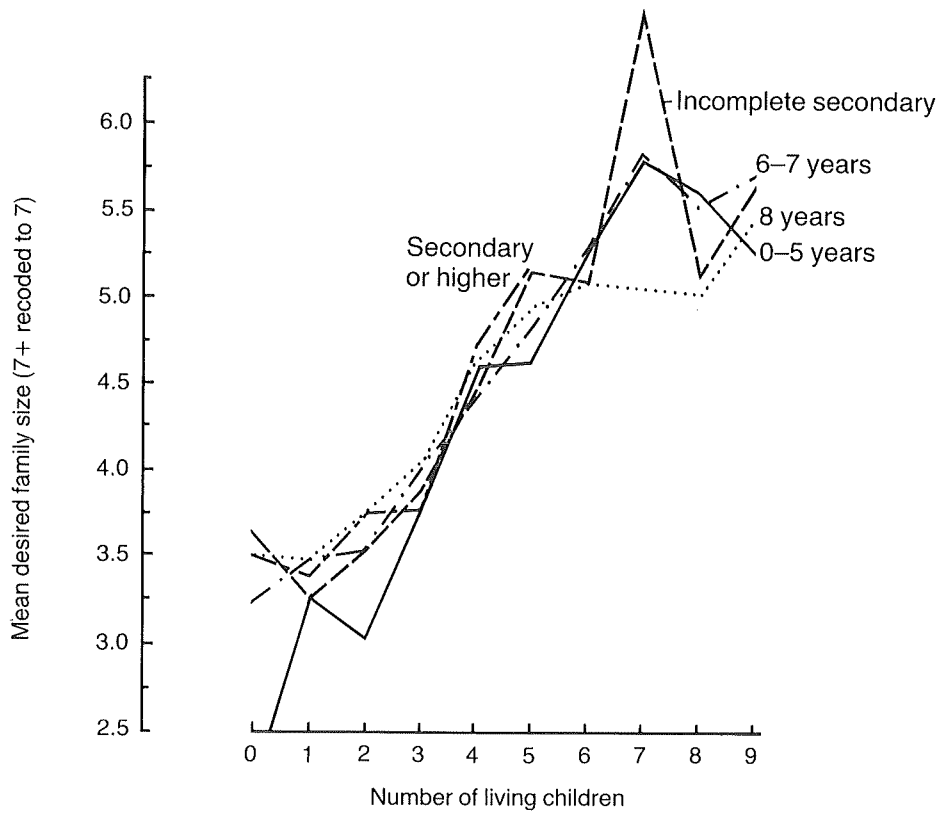
The unadjusted means in column 1 of table 25 indicate several quite large differences in the hypothesized direction. Women with traditionally middle-class characteristics (ie secondary education, secondary educated husbands, white collar occupations, spouses in white collar occupations) desire between a half to a whole child less than women with working-class characteristics. The gap between rural women (4.4 children desired) and urban born urban residents (4.0 children desired) is also in the expected direction.

On the other hand, theory also predicts that female labour force participation should lead both to lower fertility and lower fertility preferences, yet every contrast between work and non-work appears to operate in the opposite direction, showing higher preferred family size among working women. Respondents who were working

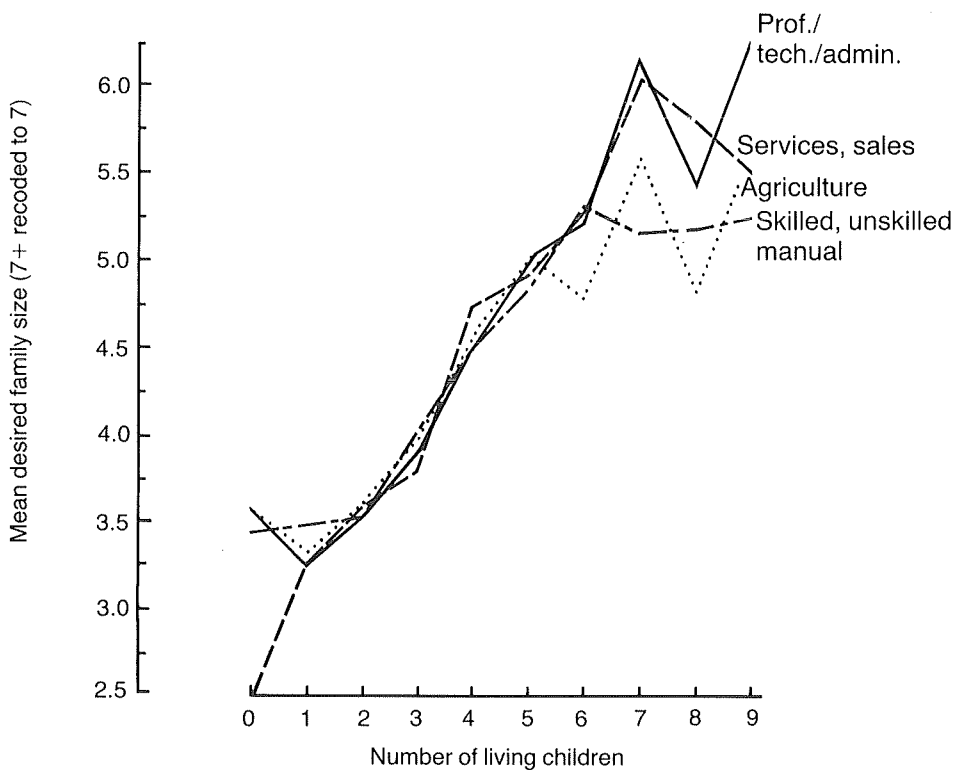
at time of interview desired 2/10 of a child more than those who were not working, those who worked before the first birth desired 1/10 of a child more, those who worked after the last birth desired 4/10 of a child more, while those who had never worked were 1/10 of a child below the national average of 4.28 children desired.

Also somewhat unexpectedly, Catholics had slightly lower desired family size than other Christians (4.19 versus 4.37), while Muslims had the lowest desired family size (4.14) and Hindus only slightly higher preferences than Catholics (4.25 versus 4.19).

The results in column 2 of table 25, adjusted for NLC (number of living children), NLC squared, age and age squared, force a very different set of conclusions than are suggested by the data in column 1. In particular, they indicate that the differentials by education and occupation of both respondent and respondent's spouse dwindle to substantive and statistical non-significance once demographic composition (ie NLC and age) is adjusted for. The results in column 3 indicate that these differentials do not regain significance when controls for composition on causally prior variables are added in, and those in column 4 that they do not revive when all other variables are adjusted for.



**Figure 3** Mean desired family size by woman's education: Guyana



**Figure 4** Mean desired family size by husband's occupation: Guyana

Figures 3 and 4 show that desired family size is indeed, very similar at the parity-specific level by woman's education and partner's occupation, and it becomes plain that the explanation for the large unadjusted differentials lies in the fact that women with working-class characteristics have larger families, as shown in table 5; this indicates that the least educated women average 5.21 children ever born as opposed to 1.57 children ever born among the most educated women, which is in itself partly an artifact of the distribution of education by age. Indeed, table 5 shows that the mean age of the least educated women is 35.0, while that for the most educated is 26.6.

The graph by ethnicity (figure 5) shows that at all family sizes except parity 6, Indian women desire fewer children than non-Indian, and indeed in the multivariate analysis the differential in average desired family size begins in column 1 as only a small unadjusted difference of 0.16 children. It expands considerably in column 2 to a difference of 0.36 when demographic composition is controlled for, then slightly more in column 3 to a difference of 0.44 children after composition on causally prior variables (ie residence status) is adjusted for. The addition of eight further controls in column 4 very slightly narrows the difference between the adjusted means for Indians and non-Indians, but it is plain that the difference of 4/10 of a child between the ethnic groups cannot be attributed to their composition on the large array of other socio-economic variables shown, including residence, education, occupation, religion, work status and union status. Table 26 indicates that when Indians and non-Indians are analysed separately, there is the same lack of relationship between education and desired family size observed in table 25.

The graph by residence status (figure 6) shows that desired family size is very similar between rural and urban women at the most heavily weighted parities and then that rural women have somewhat higher desired family size at the low-weighted family sizes 7 and 8. The consequence is that while there is a relatively modest rural-urban differential of 4/10 of a child in column 1, this almost completely disappears when demographic composition on family size and age are controlled for in column 2. The results in column 3 by residence status are of course the same as in column 2, because here only causally prior variables are controlled for, and since residence status has been placed first in the chain of causality the controls remain the same as in column 2. In column 4, however, differentials by residence status do reappear after all other variables are controlled for; quite possibly this is because of the control for ethnicity, since rural women are predominantly Indian in origin (71 per cent, according to table 5), so that the slight rise in the rural mean and slight fall in the urban mean that occur between columns 3 and 4 probably reflect what would happen if Indian origin women were redistributed so that their rural and urban proportions reflected their proportion in the national population as a whole.

The religion variable exhibited quite strong differentials in column 2, but these vanish once ethnicity and residence are controlled for in column 3, and do not reappear in column 4.

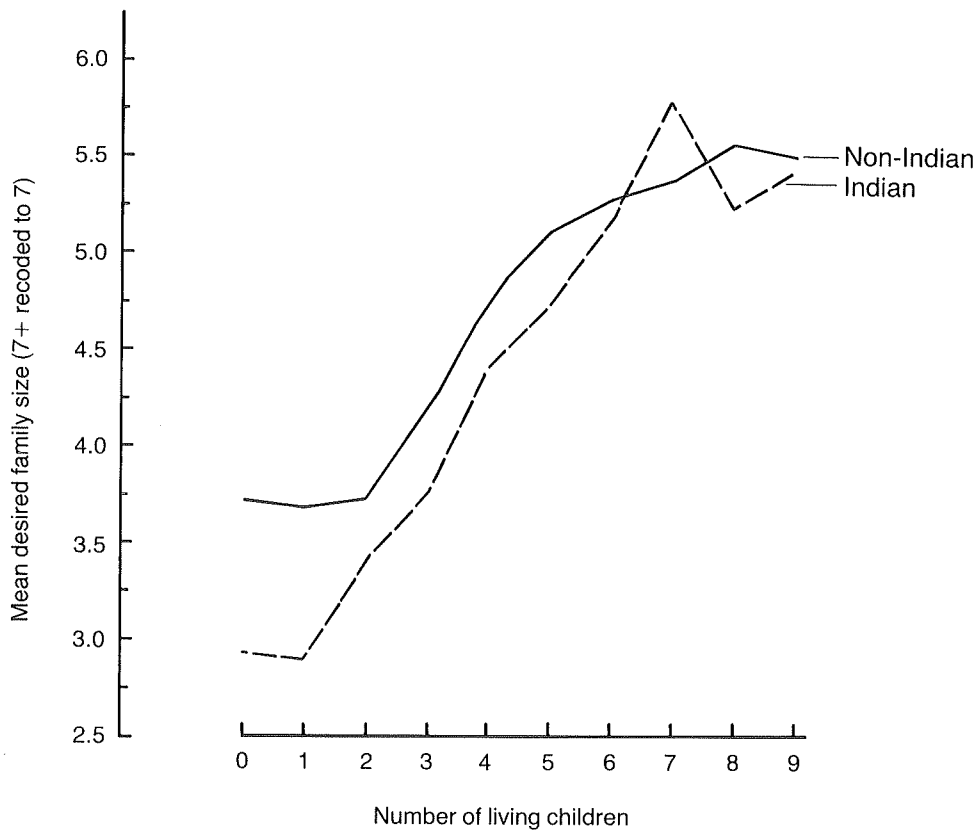
The differentials by union status are seen to be heavily affected by demographic composition. In column 1, visiting women had lower desired family size (4.0) than either married (4.3) or common law women. But in column 2, we see that once their composition by age and parity is

**Table 26** Means and deviations from the grand mean total number of children desired (4.2790) for currently married Guyanese women, adjusted by multiple regression: (A) for number of living children and age; (B) for number of living children, age and all prior variables; (C) for number of living children, age and all other variables

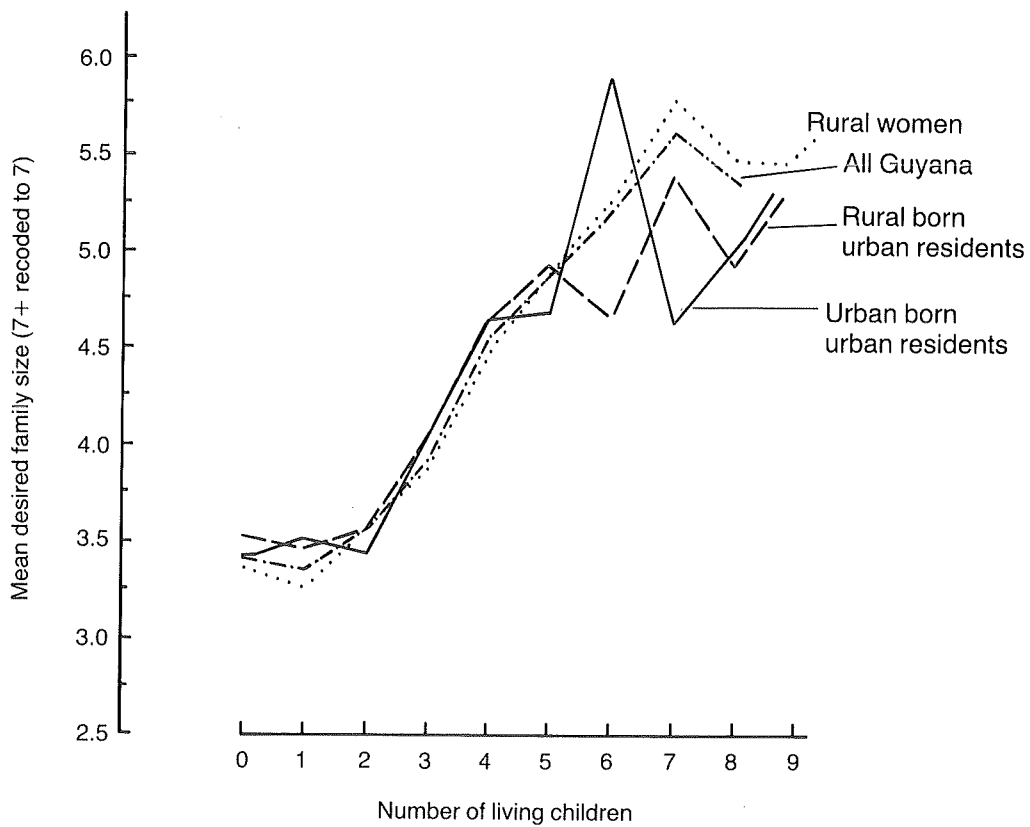
Education	Unadjusted mean	Adjusted means			Unadjusted % deviation	Per cent deviations from grand mean, adjusted			
		(A)	(B)	(C)		(A)	(B)	(C)	N
<b>A Indians (mean=4.21)</b>									
0-5 years	4.59	4.19	4.18	4.16	7.3	-2.1	-0.6	-1.0	482
6-7 years	4.48	4.27	4.27	4.28	4.7	-0.2	1.4	1.7	531
Completed primary	4.38	4.24	4.24	4.27	2.4	-0.9	0.8	1.5	244
Incomplete secondary	3.41	4.12	4.12	4.12	-20.3	-3.7	-2.1	-1.9	352
Completed secondary	3.36	4.24	4.24	4.18	-21.5	-0.9	0.8	-0.6	105
F-ratio, signif. level	39.972	0.533	0.541	0.704					
<b>B Non-Indians (mean=4.37)</b>									
0-5 years	4.92	4.61	4.64	4.66	15.0	7.7	6.2	6.7	48
6-7 years	4.74	4.44	4.40	4.41	10.8	3.8	0.6	0.9	210
Completed primary	4.61	4.30	4.30	4.28	7.7	0.5	-1.6	-1.9	465
Incomplete secondary	4.13	4.42	4.43	4.44	-3.5	3.3	1.4	1.5	414
Completed secondary	3.89	4.30	4.32	4.32	-9.1	0.5	-1.0	-1.0	246
F-ratio, signif. level	15.087	0.865	0.828	0.960					

NOTE: Results for 'priors adjusted' reflect adjustment for number of living children, number of living children squared, age, age squared, residence status and religion. Results for 'all adjusted' reflect adjustment for the same variables plus union status, three work status variables, husband's education and husband's occupation.





**Figure 5** Mean desired family size by ethnicity: Guyana



**Figure 6** Mean desired family size by residence status: Guyana

standardized for, there is a spectacular reversal, with visiting women having substantially higher desired family size of 4.6; indeed, consulting table 5, we find that visiting women were both much younger and had much fewer living children than women in the other two union statuses. But once ethnicity is controlled for in column 3, the differentials in desired family size by union status become substantively negligible and below the 90 per cent level of statistical significance. Again consulting table 5, we find that 92 per cent of women in visiting unions are non-Indian. The graph of desired family size by union status, however, shown as figure 7, indicates that visiting women only had higher desired family size because of exceptionally high means at family sizes 0 and 1, but then had rather similar means at parities 2, 3 and 4, followed by erratic swings in the mean at the higher parities, no doubt reflecting small denominators.

An interesting feature of the data is that after composition on all other variables is adjusted for, respondents who were currently working continued to have relatively high desired family size, while those who had never worked continued to have relatively low desired family size, suggesting perhaps that in Guyana women work to support or make possible large families.

The main conclusion we would draw from the analysis, however, is that desired family size is remarkably homogeneous once the demographic controls for number of living children and age are introduced, with the exception of the differential by ethnicity, which is relatively large at 4/10 of a child.

#### Guyana: women 0-59 months in union

As discussed earlier, the object of repeating the analysis of socio-economic differentials in desired family size with a subset of the sample with 0-59 months in union is to control to some extent for rationalization and implementation which cannot much affect mean desired family size among women with such short marital durations, since few such women will have had time to exceed their desired family size. Comparing the fully adjusted differentials for all women (column 4) with those for women 0-59 months in union (column 9) and restricting attention to cases where one or both columns contains a statistically significant (ie at the 90 per cent level or better) difference between reference category and the other means, we find that out of three comparisons fulfilling these conditions (ie for residence status, ethnicity, whether working now, after first birth), there is quite a high degree of consistency in two and a minor inconsistency in one.

By far the strongest variable in both columns 4 and 9 is ethnicity, and both agree in direction of the differential though not in magnitude (0.4 of a child difference in the all women case and 0.6 in the 0-59 month group). The 'working now' differential is similar in both cases, pointing again to the surprising conclusion of a positive association between female labour force participation and desired family size. This finding among the women 0-59 months in union supports the suggestion that Guyanese women work because they must support their children (eg in visiting unions), even though their families are still relatively small.

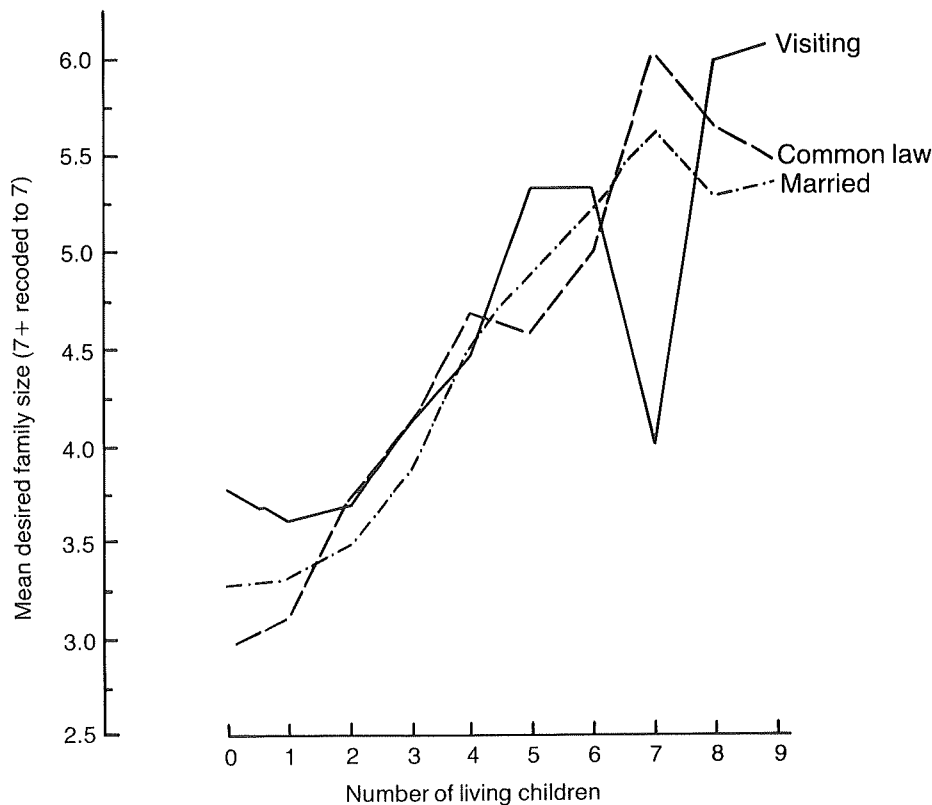


Figure 7 Mean desired family size by union status: Guyana

Residence status has the next strongest differential, with an adequate number of cases in each category. In both columns 4 and 9, urban born women have lower desired family size than rural born women, though rural born rural residents have slightly higher desired size than rural born urban residents in column 4 and slightly lower in column 9.

There is only one strong differential in column 4 that failed to be reflected in column 9, namely the differential by work after first birth, which is non-significant there possibly because of very different distributions, as only 19 per cent of the 737 women 0–59 months in union have worked after a first birth compared with 40 per cent of all currently in union women.

With these results, there is reasonably strong assurance that the observed Guyanese differentials cannot be attributed to either rationalization or implementation. The chief conclusion that emerges from the analysis both of all in union women and of women 0–59 months in union is that the number of children desired by Guyanese women varies relatively little across socio-economic categories once demographic composition is accounted for, the largest differential being not more than 6/10 of a child.

#### Jamaica: Socio-economic differentials in desired family size

##### Jamaica: Results for all in union women

Following the analytical strategy discussed above, this section will first examine social differentials in desired family size among all in union women in Jamaica, presented

in columns 1–4 of table 27, and then consider desired family size among women 0–59 months in union, in columns 6–10.

The results of the multiple regression with mean desired family size as the regressand indicate that when all variables shown in table 27 are included, multiple r-squared is 0.21677. Most of this is accounted for by demographic composition (ie number of living children, number of living children squared, age, age squared), which altogether contributes 0.18370 to total r-squared, so that the 12 socio-economic variables contribute an additional 0.03307. While this increment may seem small, it is statistically significant, and, as will be seen, several marked differentials between social categories do remain even after the controls for demographic composition are introduced.

The results in column 1 of table 27 indicate the existence in the Jamaican sample of relatively strong and significant unadjusted differentials in mean desired family size for nearly all the variables. Contrasting columns 1 and 2, however, one sees that controlling for demographic composition greatly reduces all of the differentials, though only two become non-significant, namely religion and whether respondent had a job at the time of the survey. To show the situation visually, figures 8–11 present graphs of mean desired family size by residence status, respondent's education, union status and partner's occupation, which indicate that the rural – urban differences look real in Jamaica.

Controlling for variables held to be causally prior (column 3 of table 27) reduces to non-significance seven

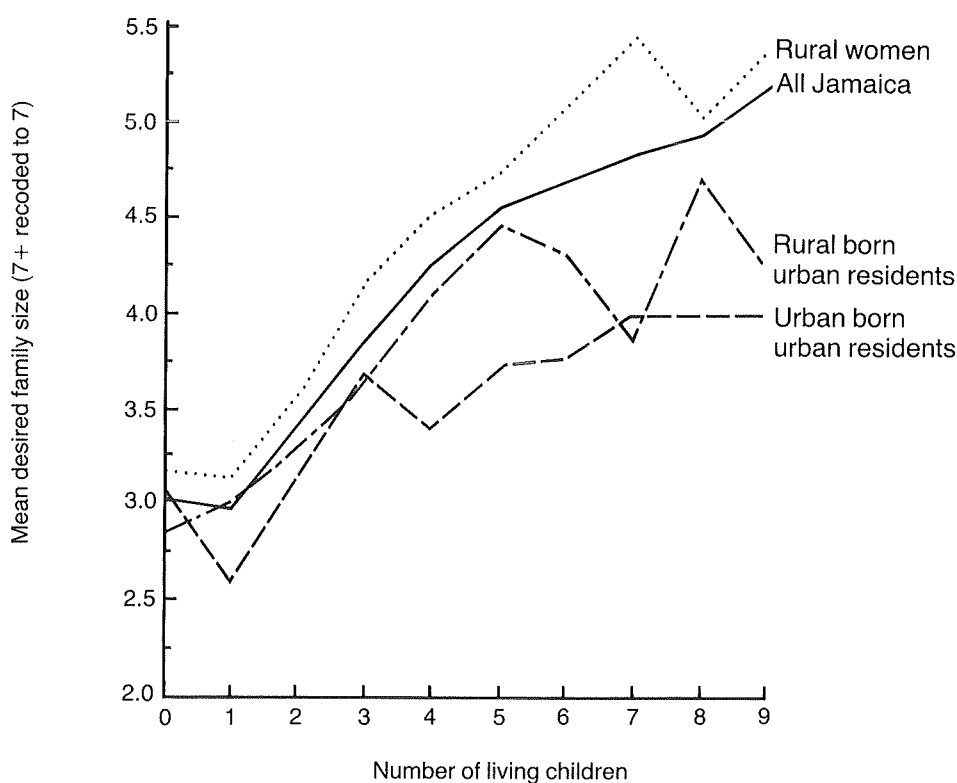
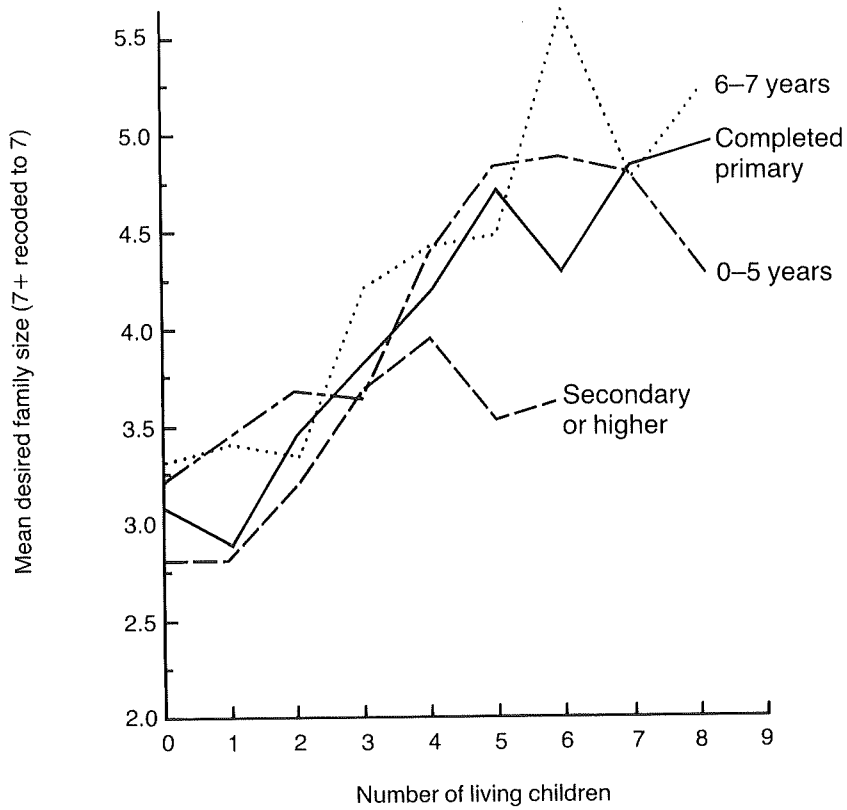
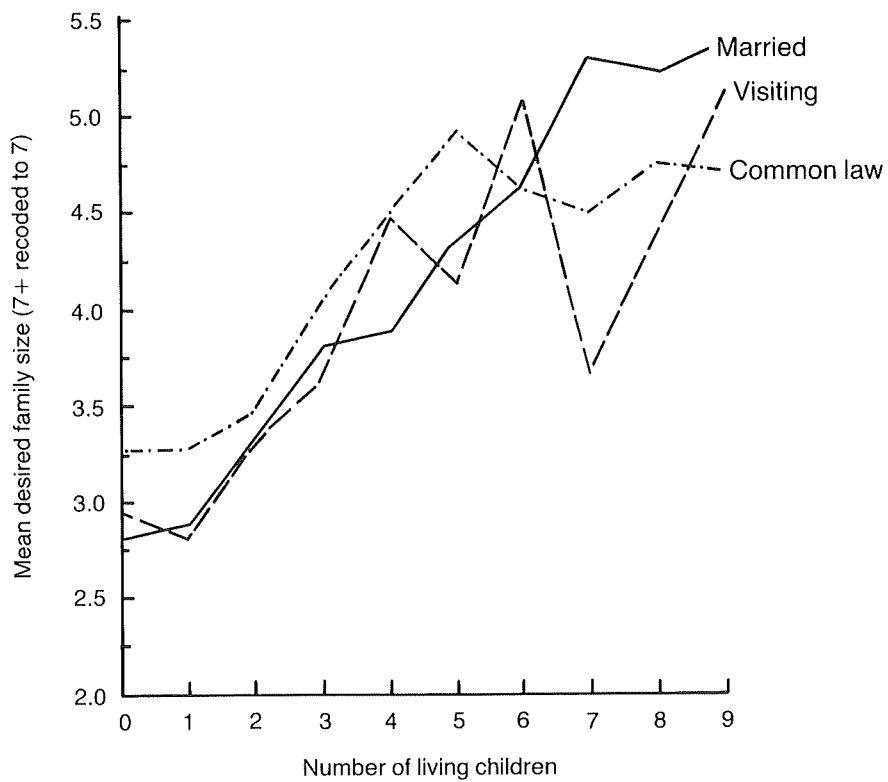


Figure 8 Mean desired family size by residence status: Jamaica



**Figure 9** Mean desired family size by woman's education: Jamaica



**Figure 10** Mean desired family size by union status: Jamaica

Table 27 Adjusted and unadjusted mean desired family size among all currently in union women (columns 1-5) and women whose first union began 0-59 months before interview (columns 6-10): Jamaica

	ALL CURRENTLY IN UNION WOMEN					WOMEN WHOSE FIRST UNION BEGAN 0-59 MONTHS PRIOR TO DATE OF SURVEY				
	Unad-just-ed means	Means adjusted for:				Unad-just-ed means	Means adjusted for:			
		NLC, Age	NLC, Age, All prior vari-ables	NLC, Age, All other vari-ables	No of wom-en		AGFU, MESFUB	AGFU, MESFUB and All prior vari-ables	AGFU, MESFUB and All other vari-ables	No of women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
ALL JAMAICA	3.89	3.89	3.89	3.89	1988	3.18	3.18	3.18	3.18	466
RESIDENCE STATUS										
Resides in rural area	4.22	4.09	4.10	4.05	1055	3.20	3.19	3.19	3.17	223
Born rural, resides urban	3.62	3.71	3.72	3.75	662	3.18	3.20	3.20	3.16	159
Born urban, resides urban	3.27	3.52	3.52	3.61	271	3.12	3.12	3.12	3.22	84
PROB VALUE	0.000	0.000	0.000	0.000		0.902	0.908	0.908	0.959	
RELIGION										
Church of God	4.04	3.97	3.94	3.90	410	3.18	3.17	3.17	3.16	105
Anglican-Methodist	3.75	3.82	3.85	3.90	337	3.33	3.34	3.34	3.36	61
Catholic	3.58	3.75	3.94	3.97	170	2.86	2.88	2.87	2.95	43
Bapt-Morav-Other Protestant	3.96	3.84	3.91	3.91	919	3.24	3.24	3.24	3.24	217
No religion	3.71	3.69	3.68	3.64	152	2.93	2.92	2.92	2.87	40
PROB VALUE	0.007	0.174	0.448	0.364		0.284	0.286	0.306	0.345	
RESPONDENT'S EDUCATION										
0-5 years	4.42	4.16	4.11	4.03	262	3.50	3.49	3.49	3.45	26
6-7 years	4.23	4.04	4.02	3.97	441	3.07	3.05	3.07	3.00	71
Completed primary	3.93	3.87	3.85	3.85	828	3.29	3.30	3.28	3.24	177
Secondary or higher	3.20	3.63	3.72	3.81	457	3.06	3.08	3.07	3.14	192
PROB VALUE	0.000	0.000	0.010	0.327		0.196	0.222	0.286	0.485	
UNION STATUS										
Married	4.05	3.87	3.88	3.89	801	2.94	2.94	2.94	2.97	68
Common-law	4.04	4.01	4.00	3.98	695	3.37	3.37	3.39	3.40	150
Visiting	3.42	3.76	3.76	3.76	492	3.13	3.13	3.11	3.10	248
PROB VALUE	0.000	0.028	0.048	0.086		0.065	0.077	0.082	0.098	
R'S LATEST OCCUPATION										
Prof-Tech-Admin	3.24	3.62	3.77	3.78	176	2.98	3.02	3.13	3.08	45
Clerical-White Collar Sales	3.48	3.74	3.86	3.90	352	3.21	3.23	3.28	3.30	116
Services-Blue Collar Sales	4.08	3.95	3.90	3.93	744	3.14	3.15	3.08	3.11	134
Skilled or unskilled manual	3.80	3.76	3.83	3.85	271	3.14	3.13	3.05	3.05	44
Agricultural	4.77	4.35	4.15	4.15	146	3.55	3.49	3.38	3.44	11
Never worked	3.94	3.97	3.90	3.77	299	3.24	3.22	3.23	3.20	116
PROB VALUE	0.000	0.000	0.441	0.431		0.813	0.911	0.829	0.832	
WORKING NOW ?										
Now working	3.81	3.85	3.91	3.92	859	3.12	3.14	3.25	3.17	147
Not now working	3.95	3.92	3.88	3.87	1129	3.20	3.20	3.14	3.18	319
PROB VALUE	0.058	0.309	0.705	0.605		0.560	0.712	0.950	1.000	
WORKED BEFORE 1ST BIRTH ?										
Worked before 1st birth	3.71	3.83	3.85	3.83	1054	3.09	3.10	3.10	3.12	281
Did not work before 1st	4.09	3.95	3.94	3.96	934	3.30	3.30	3.29	3.27	185
PROB VALUE	0.000	0.094	0.247	0.130		0.098	0.137	0.335	0.503	
WORKED AFTER 1ST BIRTH ?										
Worked after 1st birth	4.01	3.85	3.82	3.84	1323	3.23	3.24	3.21	3.25	178
Did not work after 1st	3.65	3.98	4.02	3.99	665	3.14	3.14	3.15	3.13	288
PROB VALUE	0.000	0.111	0.073	0.213		0.493	0.447	0.725	0.558	
HUSBAND/PARTNER'S EDUCATION										
0-5 years	4.58	4.24	4.08	4.09	225	3.23	3.21	3.14	3.13	26
6-7 years	4.34	4.09	3.97	3.97	268	3.18	3.18	3.15	3.19	34
Completed primary	3.92	3.87	3.86	3.86	1045	3.27	3.27	3.21	3.23	210
Secondary or higher	3.20	3.64	3.83	3.81	450	3.07	3.09	3.15	3.12	196
PROB VALUE	0.000	0.000	0.279	0.260		0.494	0.623	0.982	0.936	

Table 27, continued

	ALL CURRENTLY IN UNION WOMEN					WOMEN WHOSE FIRST UNION BEGAN 0-59 MONTHS PRIOR TO DATE OF SURVEY				
	Unad-just-ed means	Means adjusted for:				Unad-just-ed means	Means adjusted for:			
	NLC, Age	NLC, Age, All prior variables	NLC, Age, All other variables	No of women		AGFU, MESFUB	AGFU, and All prior variables	AGFU, and All other variables	No of women	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>HUSB/PARTNER'S OCCUPATION</b>										
Prof-tech-clerical	3.44	3.74	3.99	3.99	311	3.29	3.31	3.39	3.40	101
Sales or services	3.58	3.71	3.81	3.81	281	2.99	2.99	3.02	3.02	75
Agricultural	4.52	4.16	3.90	3.89	416	3.22	3.20	3.09	3.07	50
Skilled or unskilled manual	3.86	3.87	3.88	3.88	980	3.18	3.18	3.15	3.15	240
PROB VALUE	0.000	0.000	0.623	0.617		0.527	0.488	0.352	0.314	
<b>WILL CHILDREN CONTRIBUTE TO H/HOLD WHEN START WORK?</b>										
Expects no contribution	3.58	3.67	3.78	3.78	245	2.92	2.93	2.87	2.86	53
Yes, expects contribution	3.97	3.86	3.85	3.85	1130	3.25	3.25	3.20	3.21	243
Not asked	3.88	4.03	4.01	4.01	613	3.15	3.16	3.24	3.23	170
PROB VALUE	0.006	0.019	0.142	0.182		0.275	0.310	0.264	0.246	
<b>EXPECTED SOURCES OF MONEY SUPPORT IN OLD AGE</b>										
Children not mentioned	3.66	3.84	3.89	3.89	1115	3.16	3.16	3.21	3.21	291
Children mentioned (spont.)	4.18	3.95	3.89	3.89	867	3.21	3.21	3.12	3.12	175
Not asked	4.83	5.06	4.72	4.72	6	---	---	---	---	0
PROB VALUE	0.000	0.065	0.427	0.427		0.824	0.903	0.839	0.839	

Note: Desired family sizes exceeding 7 were reset to 7. Means in column 2 were adjusted for NLC (number of living children), NLC squared, age, and age squared. Means in column 3 were adjusted for all variables listed above the variable in question (e.g. means for religion were adjusted for residence status and ethnicity). Means for a given variable in column 4 were adjusted for all other variables shown. Means in column 7 were adjusted for AGFU (age at first union), age at first union squared, MESFUB (months elapsed since first union began), and MESFUB squared. Prob values refer to the probability that all of the means are the same as the mean of the reference category, where reference category is always the last category for each variable (e.g. visiting is the reference category for the union status variable).

additional variables, namely respondent's last occupation, whether respondent worked before or after the first birth, husband/partner's education and occupation, plus the two attitudinal variables that measure expectations of support from children later on in life. The only variables that retain statistically significant differentials are residence status, respondent's education, union status and whether respondent worked after the first birth. If we accept the causal ordering shown in the table, it is apparent that these are the chief socio-economic variables responsible for explaining variation in desired family size.

If, on the other hand, we are dissatisfied with the causal ordering, and prefer to adopt the severest test, we can examine the results in column 4, which shows what happens to the significance level of each variable when it is forced to enter the regression equation last. Under this most stringent of tests, only three variables retain statistical significance, namely residence status, union

status and whether respondent worked before the first birth. The residence status variable remains highly significant, with differentials in the expected direction, rural women having highest desired family size (4.05), rural born urban residents intermediate (3.75), and urban born urban residents the lowest (3.61). The conclusion is that it is not just less education and higher proportions in agriculture that are responsible for higher desired family size in rural areas of Jamaica, and we are led to speculate that there is some unmeasured factor to explain the persistence of the differential. One possibility is that children are either less costly to rear or confer greater benefits in rural areas.

Yet, there is remarkably little difference in mean desired family size in the two variables indicating expectation of support from children once parity is controlled for, suggesting it may be lower costs of childrearing rather than higher expected benefits that motivate higher rural

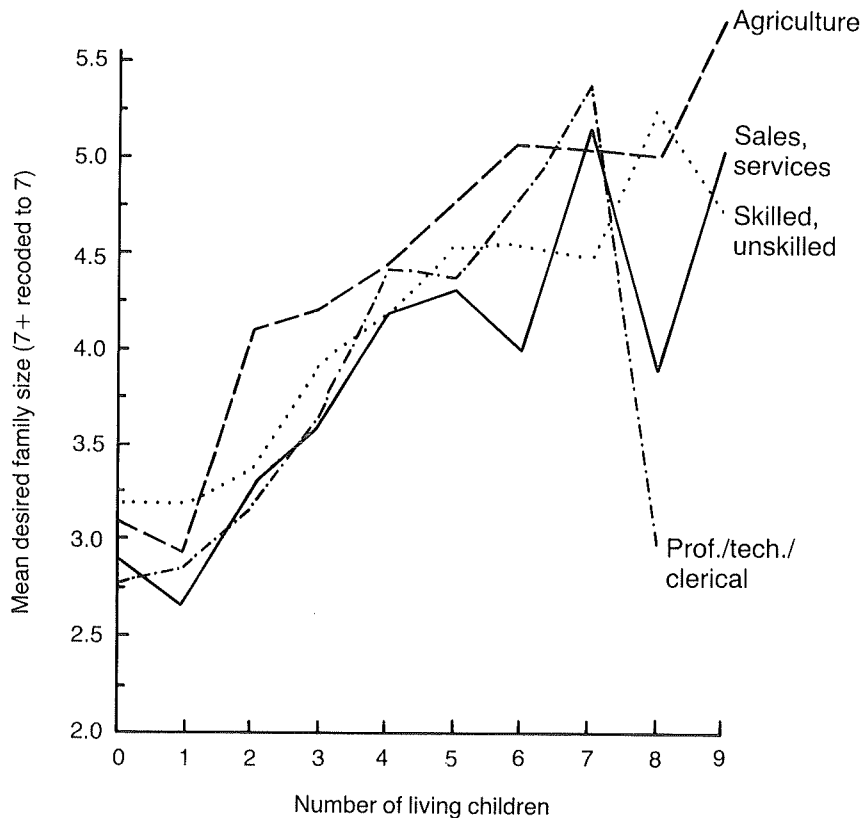


Figure 11 Mean desired family size by husband's occupation: Jamaica

desired family size.

The union status variable is less strongly significant, and indicates that visiting women have slightly lower mean desired family size (3.76 children) than married women (3.89) or women in common law unions (3.98), after all other factors are taken into account. But these differences are quite slight, only 2/10 of a child. Similarly, the differentials by whether the respondent worked before the first birth, while statistically significant, are substantively weak, and show that work status has relatively little impact on overall desired family size, though evidence is presented in the last chapter that working women are more apt to use contraception and less likely to have unwanted births.

In trying to explain the loss of significance of the education variables in column 4, it occurred to us that since respondents' and partners' education are closely linked, the inclusion of both variables in table 27 might underestimate the differentials by education. Table 28 examines this possibility.

As can be seen, when husband/partner's education is omitted but all other variables are included in the regression, respondent's education becomes only slightly more significant, and the same holds for partner's education when respondent's education is omitted. It is thus apparent that after composition on other social variables is adjusted for, the differentials by education become relatively weak, not exceeding 3/10 of a child and not statistically significant.

#### *Jamaica: women 0-59 months in union*

In contrast to the analysis for all in union women, where there were strong unadjusted differentials in mean desired family size, and where some variables remained significant when all others were controlled for, differentials are seen to be weaker among women with 0-59 months since entry to first union (table 27, columns 6-10); in part owing to small sample size, only two variables are significant, with  $p < 0.1$  in the unadjusted differentials column, namely union status, where the mean ranges from 2.9 to 3.4, and whether worked before first birth, where it ranges between 3.1 and 3.3.

Several rather unexpected though non-significant differentials are apparent. Women with partners classified as professional/technical/clerical have a relatively high mean desired family size of 3.40 and those with partners classified as agricultural an unexpectedly low mean of 3.07. Another surprising result is that very little difference in mean desired family size exists between rural respondents and those who are urban born. Both these results are in sharp contrast to those in columns 1-4 for the larger sample, which indicate relatively high preferences among rural women, low preferences among urban women, and high preferences among respondents with partners in agriculture compared to those with professional/technical/clerical partners.

Only if one is prepared to assume that reproductive desires are fixed relatively early can one give much credence to these results. Given the fact that these women

**Table 28** Desired family size and education: Jamaica

Variables included	0-5 yr	6-7 yr	Completed primary	Secondary and higher	F-statistic	Prob
<b>A Mean desired family size by respondent's education</b>						
All but husband's education	4.06	3.98	3.85	3.79	1.672	0.171
Inc. husband's education	4.03	3.97	3.85	3.81	1.151	0.327
<b>B Mean desired family size by husband/partner's education</b>						
All but respondent's education	4.12	3.98	3.86	3.79	1.862	0.134
Inc. respondent's education	4.09	3.97	3.86	3.81	1.339	0.260

are recent beginners in their reproductive careers we are inclined to view the conclusions as indicating that younger Jamaican women have relatively hazy and incompletely formulated ideas of how many children they want.

These results imply that young Jamaican women want 3-3.5 children. This is substantially higher than the wanted total fertility rate estimate in chapter 2, which indicates that the cross-section of Jamaican women aged 15-49 want no more than 2.3 births. The wanted TFR probably better reflects the true demand for births based on implementation of postponing and stopping preferences as life unfolds.

#### **Trinidad and Tobago: Socio-economic differentials in desired family size**

*Trinidad and Tobago: Results for all in union women*  
Following the analytical strategy discussed above, which is intended to protect against rationalization and implementation effects, this section will first examine social differentials in desired family size among all in union women in Trinidad and Tobago, shown in columns 1-4 of table 29, and then the differentials among women 0-59 months in union shown in columns 6-10.

The results in columns 1-5 of table 29 indicate the extent to which desired family size is different between each of the categories of eleven social variables, at varying levels of statistical adjustment, with adjustments made with the regression procedure described in chapter 2.

The means in column 1 of table 29 are ordinary averages which have not been adjusted for population composition. Statistically significant differences are observed for ten of the eleven variables shown. Six of these differentials exceed 3/10 of a child, for respondent education, union status, respondent occupation, whether respondent worked before first birth, husband's education and husband's occupation. The largest differential, 8/10 of a child, is between women with 0-6 years' education and those with a completed secondary education.

The means in column 2 are standardized via multiple regression for demographic composition (ie number of living children, NLC squared, age and aged squared). The results indicate that when demographic composition is adjusted for, statistically significant differences exist for

only one variable, ethnicity. Standardizing for parity and age has evidently caused the differences in desired family size by education, occupation, residence, religion, union status and work status to become negligible.

The graphs of mean desired family size by parity for social groups help to explain why the differentials disappear. The lack of a rural-urban differential is accounted for in figure 12, which shows that at each parity from 0 to 4 average desired family size is just about equal across the various categories of residence status. The graph by respondent's education in figure 13 reveals a somewhat similar picture, with desired size virtually equal at parities 0-3 though with some divergence at the higher parities, where the curve for higher educated women flattens out much as it did in Jamaica. Similarly, the graph of desired size by parity for husband's occupation groups in figure 14 shows that the means are very much the same once number of living children is held constant. The graph by ethnicity in figure 15 however, indicates slightly lower desired family size among Indians than non-Indians at all parities (except 4), which is consistent with findings from the 1970 Trinidad Family Survey showing lower desired family size among Indians than non-Indians (Harewood 1978, p 167, and Harewood and Abdulah 1971, p 24).

The means in column 3 of table 29 are adjusted for composition on 'causally prior' variables, following the causal ordering implied by the relative position of each variable in the table (eg residence status is considered to come first, so the means of the residence status variable are adjusted only for demographic composition, while ethnicity is considered to come second, so the means by ethnicity are adjusted for demographic composition and composition by residence status, and so on).

If we choose to accept the correctness of the causal ordering adopted, the means in column 3 are then appropriately adjusted for composition on other variables and should receive correspondingly greater weight in the interpretation of results.

These results indicate that ethnicity remains the most statistically significant of the variables, as it was in column 2, but that the differences by religion, respondent's education, union status and whether worked after first birth are close to significance, unlike column 2.



Table 29 Adjusted and unadjusted mean desired family size among all currently in union women (columns 1-5) and women whose first union began 0-59 months before interview (columns 6-10): Trinidad-Tobago

	ALL CURRENTLY IN UNION WOMEN					WOMEN WHOSE FIRST UNION BEGAN 0-59 MONTHS PRIOR TO DATE OF SURVEY				
	Unad-just-ed means	Means adjusted for:				Unad-just-ed means	Means adjusted for:			
		NLC, Age.	NLC, Age, All prior vari-ables	NLC, Age, All other vari-ables	No of wom-en		AGFU, MESFU	AGFU, MESFU and All prior vari-ables	AGFU, MESFU and All other vari-ables	No of women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
ALL TRINIDAD AND TOBAGO	3.69	3.69	3.69	3.69	3040	3.13	3.13	3.13	3.13	683
RESIDENCE STATUS										
Born rural, resides rural	3.78	3.67	3.67	3.68	952	3.19	3.20	3.20	3.25	196
Born rural, resides urban	3.71	3.72	3.72	3.71	921	3.15	3.15	3.15	3.14	216
Born urban, resides rural	3.62	3.62	3.61	3.59	270	3.02	3.02	3.02	3.01	62
Born urban, resides urban	3.58	3.70	3.70	3.70	898	3.08	3.09	3.09	3.04	209
PROB VALUE	0.027	0.696	0.696	0.616		0.656	0.656	0.656	0.341	
ETHNICITY										
Non-Indian	3.69	3.74	3.74	3.81	1779	3.18	3.17	3.19	3.29	409
Indian	3.69	3.61	3.61	3.52	1261	3.06	3.06	3.04	2.90	274
PROB VALUE	0.956	0.010	0.009	0.000		0.193	0.216	0.107	0.010	
RELIGION										
Catholic	3.68	3.75	3.68	3.71	1064	3.16	3.15	3.08	3.09	244
Protestant Christian	3.62	3.65	3.60	3.61	1051	3.08	3.09	3.02	3.02	232
Hindu	3.82	3.68	3.81	3.77	731	3.20	3.20	3.37	3.37	158
Muslim	3.56	3.57	3.69	3.66	194	2.98	2.98	3.14	3.10	50
PROB VALUE	0.026	0.199	0.081	0.171		0.545	0.579	0.162	0.171	
RESPONDENT'S EDUCATION										
0-6 years	4.09	3.71	3.76	3.79	563	3.14	3.15	3.13	3.23	36
7-8 years	3.93	3.77	3.77	3.79	635	3.14	3.13	3.11	3.14	97
Completed primary	3.66	3.72	3.71	3.72	865	3.13	3.13	3.12	3.15	214
Some secondary	3.37	3.58	3.54	3.53	522	3.07	3.06	3.07	3.10	160
Completed secondary	3.27	3.63	3.60	3.55	456	3.18	3.19	3.21	3.11	176
PROB VALUE	0.000	0.184	0.060	0.041		0.925	0.895	0.844	0.983	
UNION STATUS										
Married	3.81	3.71	3.74	3.73	1840	3.16	3.16	3.22	3.26	300
Common-law	3.69	3.61	3.57	3.57	539	3.13	3.09	3.07	3.11	92
Visiting	3.35	3.71	3.65	3.65	661	3.10	3.11	3.05	3.01	292
PROB VALUE	0.000	0.000	0.044	0.082		0.845	0.800	0.326	0.130	
R'S LATEST OCCUPATION										
Prof-tech-admin-clerical	3.39	3.69	3.73	3.79	627	3.20	3.23	3.27	3.26	171
Sales and services	3.75	3.75	3.68	3.74	826	3.17	3.17	3.20	3.23	131
Skilled crafts	3.57	3.66	3.67	3.74	280	3.20	3.20	3.21	3.26	52
Agric. + unskilled manual	3.90	3.56	3.55	3.61	243	2.59	2.58	2.58	2.58	15
Never worked	3.80	3.68	3.70	3.58	1064	3.09	3.08	3.04	3.02	314
PROB VALUE	0.000	0.448	0.596	0.405		0.288	0.232	0.147	0.219	
WORKING NOW ?										
Now working	3.54	3.66	3.65	3.66	1054	3.10	3.11	3.00	3.00	238
Not now working	3.77	3.71	3.71	3.70	1986	3.15	3.14	3.20	3.20	445
PROB VALUE	0.000	0.260	0.385	0.595		0.563	0.705	0.136	0.130	
WORKED BEFORE 1ST BIRTH?										
Worked before 1st birth	3.50	3.67	3.65	3.62	1366	3.18	3.19	3.19	3.19	390
Did not work before 1st	3.84	3.70	3.72	3.74	1674	3.07	3.06	3.05	3.05	293
PROB VALUE	0.000	0.575	0.370	0.134		0.212	0.147	0.226	0.241	
WORKED BEFORE 1ST BIRTH?										
Worked before 1st birth	3.50	3.67	3.65	3.62	1366	3.18	3.19	3.19	3.19	390
Did not work before 1st	3.84	3.70	3.72	3.74	1674	3.07	3.06	3.05	3.05	293
PROB VALUE	0.000	0.575	0.370	0.134		0.212	0.147	0.226	0.241	

Table 29 continued

	ALL CURRENTLY IN UNION WOMEN					WOMEN WHOSE FIRST UNION BEGAN 0-59 MONTHS PRIOR TO DATE OF SURVEY				
	Unad-just-ed means	Means adjusted for:				Unad-just-ed means	Means adjusted for:			
	NLC, Age.	NLC, Age, All prior vari-ables	NLC, Age, All other vari-ables	No. of wom-en		AGFU, MESFU	AGFU, MESFU and All prior vari-ables	AGFU, MESFU and All other vari-ables	No. of women	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>WORKED AFTER 1ST BIRTH?</b>										
Worked after 1st birth	3.79	3.66	3.61	3.61	1310	3.16	3.14	3.12	3.14	137
Did not work after 1st	3.61	3.72	3.74	3.74	1730	3.12	3.13	3.13	3.13	546
PROB VALUE	0.001	0.255	0.115	0.110		0.706	0.933	0.938	0.933	
<b>HUSBAND/PARTNER'S EDUCATION</b>										
0-6 years	4.04	3.70	3.70	3.70	452	3.09	3.08	3.07	3.08	41
7-8 years	3.91	3.73	3.70	3.71	495	3.10	3.09	3.07	3.08	83
Completed primary	3.69	3.68	3.67	3.67	1096	3.15	3.14	3.13	3.13	235
Incomplete secondary	3.48	3.67	3.69	3.69	459	2.93	2.92	2.91	2.91	122
Completed secondary	3.37	3.67	3.70	3.68	538	3.26	3.28	3.30	3.30	202
PROB VALUE	0.000	0.961	0.984	0.990		0.144	0.109	0.101	0.123	
<b>HUSB/PARTNER'S OCCUPATION</b>										
Prof-tech-admin-clerical	3.55	3.70	3.73	3.73	644	3.17	3.19	3.13	3.13	164
Sales or services	3.59	3.70	3.69	3.69	519	3.13	3.11	3.16	3.16	124
Agricultural	3.98	3.71	3.73	3.73	275	2.98	2.96	2.99	2.99	41
Skilled + unskilled manual	3.72	3.68	3.66	3.66	1602	3.13	3.13	3.14	3.14	355
PROB VALUE	0.000	0.976	0.747	0.747		0.809	0.698	0.886	0.886	

Note: Desired family sizes exceeding 7 were reset to 7. Means in column 2 were adjusted for NLC (number of living children), NLC squared, age, and age squared. Means in column 3 were adjusted for all variables listed above the variable in question (e.g. means for religion were adjusted for residence status and ethnicity). Means for a given variable in column 4 were adjusted for all other variables shown. Means in column 7 were adjusted for AGFU (age at first union), age at first union squared, MESFU (months elapsed since first union began), and MESFU squared. Prob values refer to the probability that all of the means are the same as the mean of the reference category, where reference category is always the last category for each variable (e.g. visiting is the reference category for the union status variable).

Turning now to the fully adjusted means in column 4, it becomes apparent that the largest observed difference is a quite small though highly statistically significant one of 3/10 of a child between Indians (3.5 desired) and non-Indians (3.8). We also see that once ethnicity has been controlled for, education becomes significant again, in the expected direction, with 1/4 of a child difference between the least and most educated. Also, with composition on all other variables adjusted for, a small though statistically significant difference by union status remains, in which married women have higher desired size (3.73) than visiting (3.65) or common law women (3.57), which is at variance with the results for Guyana that implied highest desired size for common law women.

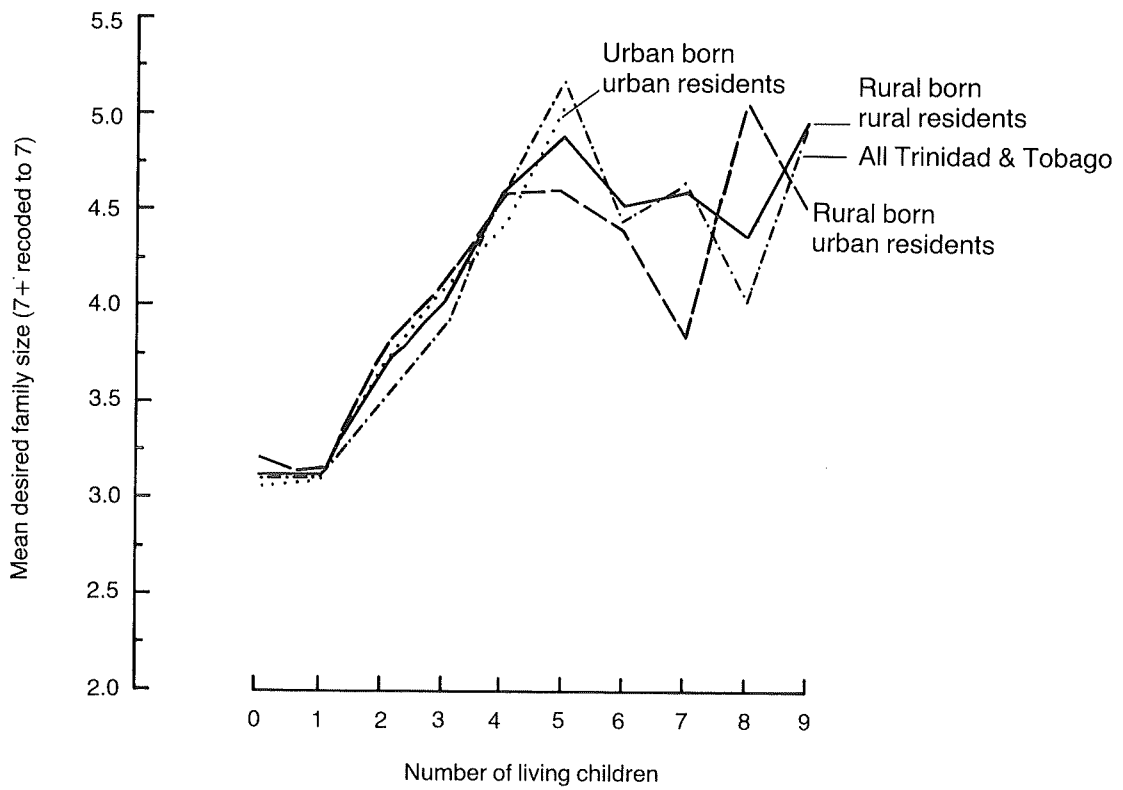
The results in column 4 also show that when composition is adjusted for on all other variables, two of the work status variables come close to being statistically significant, namely whether worked before first birth and

whether worked after first birth, which both show differences in the expected direction, with non-work being associated with slightly higher desired family size, which differs from the Guyanese result where it was associated with slightly lower desired family size.

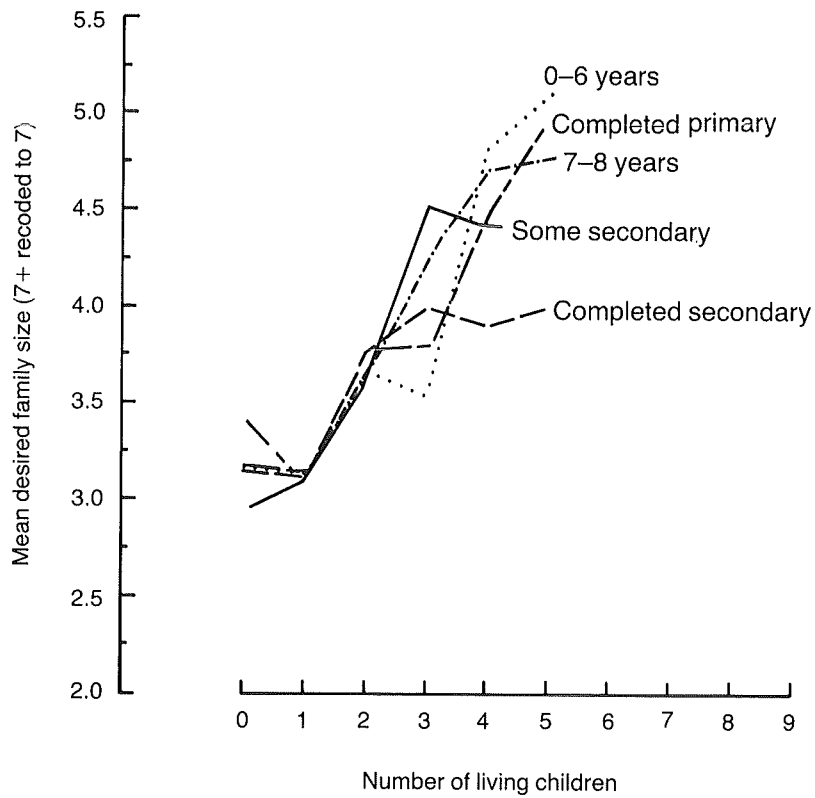
#### *Trinidad and Tobago: Women 0-59 months in union*

Confining our attention to the fully adjusted means in columns 4 and 9, and to variables that had statistically significant differentials in mean desired family size (ie prob values lower than 0.1), it emerges that ethnicity is the only variable that is statistically significant in both cases, being 3/10 of a child in column 4 and 4/10 in column 9. These differentials are the same in direction and similar in magnitude.

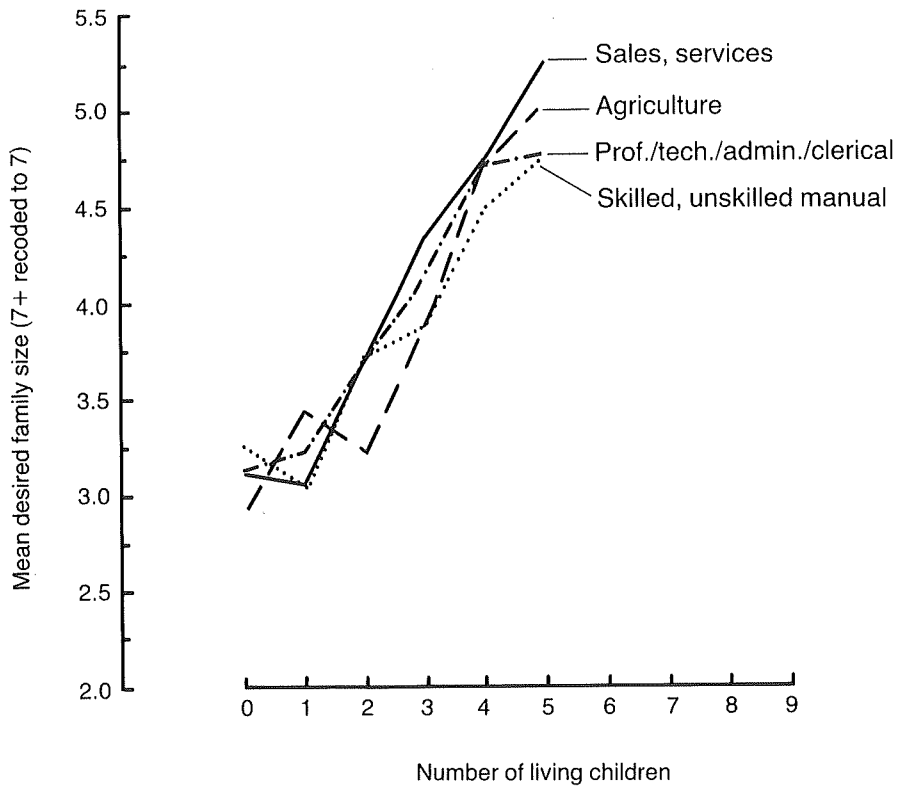
The only other differential with a prob value of 0.1 or less in columns 4 and 9 was respondent's education, and again the differentials are in the same direction in both



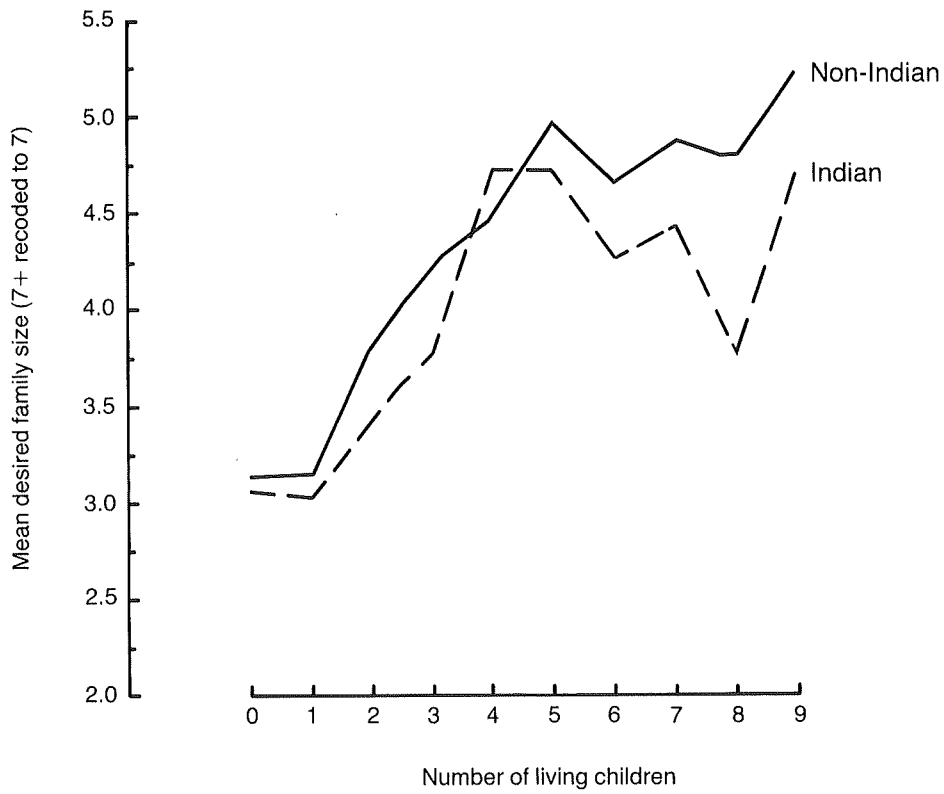
**Figure 12** Mean desired family size by residence status: Trinidad and Tobago



**Figure 13** Mean desired family size by woman's education: Trinidad and Tobago



**Figure 14** Mean desired family size by husband's occupation: Trinidad and Tobago



**Figure 15** Mean desired family size by ethnicity: Trinidad and Tobago

Table 30 Percentages wanting more children by socioeconomic groups: Guyana

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- just- -ed mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
				N	%	N	%	N	%		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
ALL GUYANA	44.9	44.9	44.9	44.9	2936	58.8	437	43.5	400	35.6	334
RESIDENCE STATUS											
Rural born, resides rural	40.1	43.7	43.7	45.8	1907	57.1	269	41.8	249	31.1	224
Rural born, resides urban	53.8	49.2	49.2	45.2	535	61.7	98	46.4	72	43.6	54
Urban born, resides urban	53.6	45.0	45.0	40.9	494	61.3	70	46.2	79	45.9	56
PROB VALUE	0.000	0.017	0.017	0.092		0.651		0.686		0.052	
ETHNICITY											
Non-Indian	54.1	50.3	50.6	45.9	1304	62.1	188	52.0	175	48.4	138
Indian	37.6	40.6	40.4	44.1	1632	56.3	249	36.9	225	26.6	196
PROB VALUE	0.000	0.000	0.000	0.538		0.205		0.002		0.000	
RELIGION											
Catholic	54.9	48.4	48.1	47.9	357	62.5	62	41.4	62	50.5	32
Other Christian	52.8	50.4	49.2	48.6	1145	62.5	167	54.3	147	47.8	133
Hindu	35.3	39.1	40.1	40.9	1109	55.1	160	35.4	142	21.0	134
Muslim	38.8	41.4	42.6	42.4	325	53.5	48	37.4	49	31.7	35
PROB VALUE	0.000	0.000	0.024	0.092		0.391		0.008		0.000	
RESPONDENT'S EDUCATION											
0-5 years	23.2	38.5	41.5	41.2	487	49.4	54	38.8	46	34.3	55
6-7 years	30.5	40.1	41.3	41.4	696	47.8	80	40.6	105	28.8	95
Completed primary	39.5	48.9	47.2	46.8	656	73.9	82	47.3	99	41.1	93
Incomplete secondary	61.3	44.7	43.9	44.6	752	55.6	167	38.9	112	32.0	64
Completed secondary	79.1	56.4	54.8	54.2	345	72.2	74	60.7	38	52.4	27
PROB VALUE	0.000	0.000	0.000	0.001		0.001		0.154		0.154	
UNION STATUS											
Married	40.8	44.4	45.5	45.8	2125	59.3	322	41.8	297	32.5	263
Common-law	44.6	47.7	46.3	45.3	390	68.3	52	52.8	58	42.7	45
Visiting	66.0	45.0	40.6	39.9	421	48.4	63	42.5	45	55.0	26
PROB VALUE	0.000	0.317	0.090	0.056		0.070		0.299		0.042	
R'S LATEST OCCUPATION											
Prof-clerical-shop assistant	64.4	50.7	45.7	44.6	486	62.5	94	51.1	73	44.4	46
Services-street vendors	43.4	49.4	48.5	47.1	617	67.9	68	55.5	90	41.4	75
Skilled-unskilled manual	43.3	43.1	42.1	40.8	231	59.9	41	33.7	32	41.1	33
Agriculture	24.8	44.8	47.6	45.9	254	39.2	21	51.7	20	27.1	20
Never worked	42.6	41.1	42.9	44.5	1348	56.0	213	35.5	185	30.3	160
PROB VALUE	0.000	0.000	0.051	0.361		0.114		0.008		0.235	
WORKING NOW ?											
Now working	49.2	49.1	46.3	44.6	828	59.7	323	51.5	103	39.0	76
Not now working	43.2	43.3	44.3	45.0	2108	58.5	114	40.7	297	34.7	258
PROB VALUE	0.004	0.000	0.347	0.854		0.828		0.061		0.513	
WORKED BEFORE 1ST BIRTH ?											
Worked before 1st birth	52.3	47.9	43.1	44.2	1079	58.4	160	50.5	136	42.7	106
Did not work before 1st	40.6	43.1	45.9	45.3	1857	59.1	277	39.9	264	32.3	228
PROB VALUE	0.000	0.002	0.195	0.635		0.888		0.042		0.070	
WORKED AFTER 1ST BIRTH ?											
Worked after 1st birth	40.5	49.9	48.4	48.4	1111	61.5	180	53.8	169	41.4	130
Did not work after 1st	47.6	41.8	42.8	42.8	1825	56.9	257	36.0	231	32.0	204
PROB VALUE	0.000	0.000	0.035	0.034		0.333		0.000		0.089	
HUSBAND/PARTNER'S EDUCATION											
0-5 years	32.4	41.2	44.8	44.9	546	52.7	70	43.5	69	37.3	57
6-7 years	30.3	40.4	43.0	43.3	545	54.8	63	33.3	58	28.0	74
Completed primary	42.0	49.2	47.8	48.1	815	63.6	109	48.5	128	42.2	114
Incomplete secondary	56.2	42.5	42.2	42.3	534	52.6	95	40.5	70	31.9	49
Completed secondary	67.3	49.4	45.3	44.1	496	66.4	100	45.8	75	33.1	40
PROB VALUE	0.000	0.000	0.115	0.098		0.158		0.396		0.346	

Table 30, continued

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- -just -ed mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
				N		%	N	%	N	%	N
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
<b>HUSB/PARTNER'S OCCUPATION</b>											
Prof-tech-admin-clerical	60.8	50.4	47.9	47.9	474	68.9	93	45.6	70	41.9	44
Services-sales	49.9	45.8	44.3	44.3	507	58.4	72	46.2	77	37.0	60
Agriculture	32.7	42.1	45.8	45.8	658	59.7	79	37.3	94	28.1	63
Skilled-unskilled manual	43.3	43.9	43.6	43.6	1297	53.7	193	45.0	159	36.3	167
PROB VALUE	0.000	0.005	0.256	0.256		0.091		0.587		0.502	

Notes: (a) Columns labeled "NLC, Age" are standardized for number of living children (NLC), NLC squared, age, and age squared. The means in column 3 are standardized for all prior socioeconomic variables as well as by NLC and age. The means in column 4 are standardized for all other socioeconomic variables shown in the table.

(b) In this table, a current pregnancy is counted as a living child.

cases, which suggests that in spite of the existence of underestimation effects (documented in table 17), Trinidad and Tobago women do have some tendency to 'crystallize' their desired family size sufficiently early in their reproductive careers so that differences observed in the group of all women are apparent also among those 0-59 months in union.

By far the most important result that emerges from the comparison between all in union women and those 0-59 months in a union is that there is remarkably little difference in mean desired family size between the different social groupings in Trinidad and Tobago. In short, women have notably homogeneous family size preferences, and there are no extreme groups.

The chief conclusion of this analysis of desired family size in Trinidad and Tobago is that once demographic composition by parity and age is controlled for, there are no pronounced differences in mean number of children desired between any of the social groupings considered.

#### Socio-economic differentials in proportions wanting more children

##### *Guyana: Proportions wanting more children*

At the national level, 45 per cent of Guyanese women wanted additional children. The unstandardized means in column 1 of table 30 range quite substantially about this overall mean, from a low of 23 per cent among women with 0-5 years education to a high of 79 per cent among those with a completed secondary education.

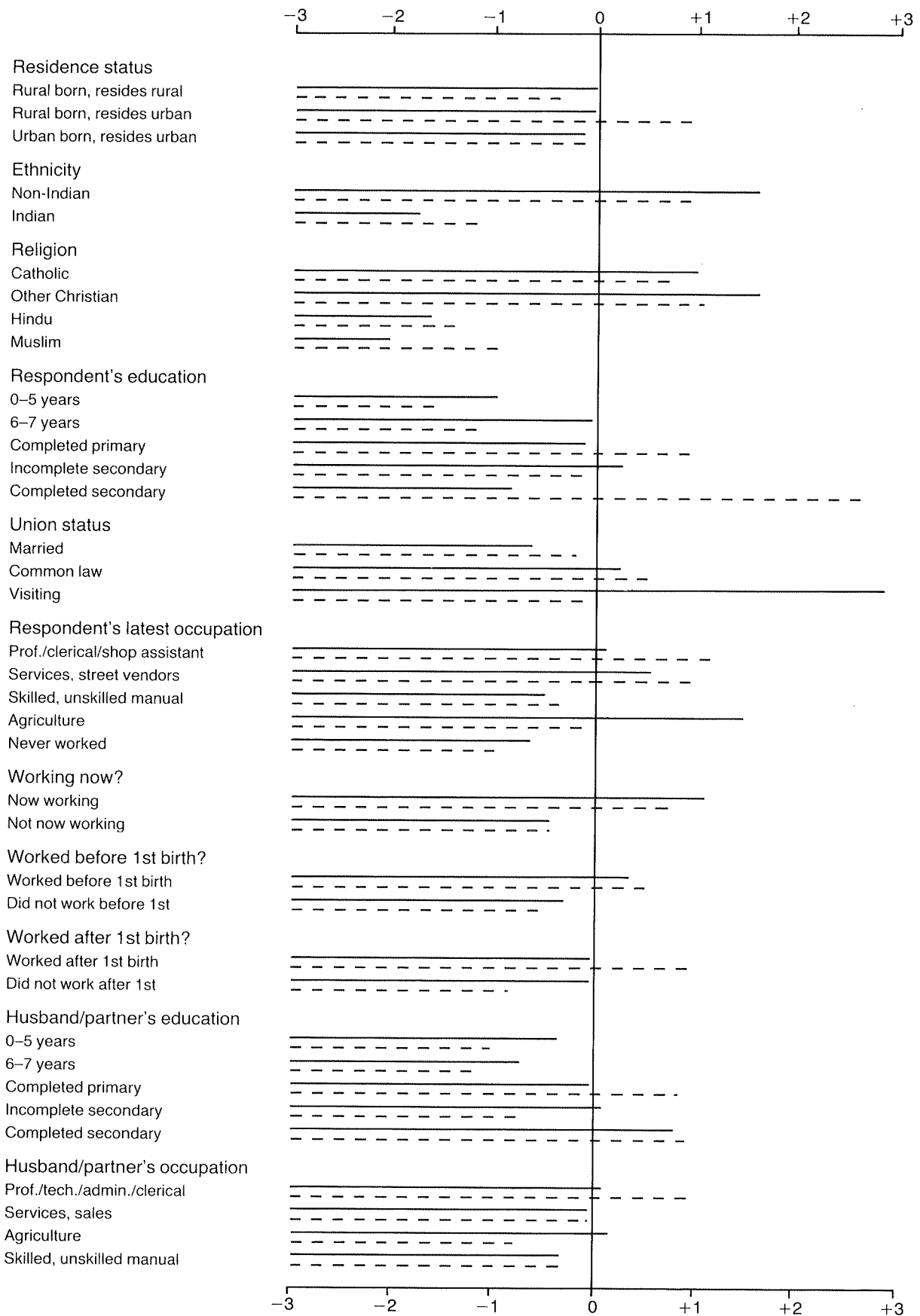
But this rather wide range is a very misleading indication of variation in reproduction motivation. It reflects instead the wide variation between the social categories in average number of children and average age. Indeed, table 5 shows that the average woman with completed secondary education is 26.6 years old and has

1.57 children, while the average woman with 0-5 years' schooling is 35.0 years old and has 5.21 children.

Standardizing the proportion wanting more children for number of living children and age dramatically reduces the range in proportions wanting more children, from a low of 38.5 per cent among women with 0-5 years' schooling to a high of 54 per cent among those with a secondary education.

The question arises as to how far the differentials adjusted for age and number of living children in column 2 are consistent with similarly adjusted differentials in mean desired family size. The correlation between the two variables across the 37 socio-economic categories is 0.46 (Pearson's R), which is in the right direction but nevertheless rather a loose fit. Figure 16 compares the two indicators, converted into z-scores (ie each value subtracted from the mean of the 37 categories and divided by the standard deviation). The comparison in figure 16 shows that proportions wanting more and desired family size are usually within one standard deviation of one another, and that when an extreme value occurs in one, the other deviation is also in the same direction. There are several notable discrepancies, however. For example, women with a completed secondary education have desired family size slightly below the mean, yet include an extremely high percentage wanting additional children. One possible explanation is that much higher proportions of secondary educated women, by using contraception for childspacing purposes, are holding back on having wanted children, and both the parity-specific percentages wanting more (shown in columns 6, 8 and 10 of table 30) and also the proportion using contraception among women who want more (49 per cent versus the national average of 26 per cent) are consistent with this.

The fully adjusted differentials in column 4 of table 30 reveal the disappearance of differentials by ethnicity, a



**Figure 16** z-score deviations above and below the mean for desired family size (—) and proportions wanting more children (---): Guyana (desired family size and proportions wanting more children both standardized for number of living children and age)

persistence of higher proportions wanting more among rural women, and strongest differentials by respondent's education in the unexpected direction of much higher proportions wanting more among secondary educated women than among any other group, which is probably a continuing consequence of their contraceptive use for purposes of childspacing.

*Jamaica: Proportions wanting more children*

At the national level, 49 per cent of Jamaican women wanted additional children. The unadjusted means in column 1 of table 31 indicate quite large and statistically significant differences by nearly all of the variables except whether working now. Standardizing for number of living children and age, however, reduces many of these differentials to non-significance. The results in column 4 indicate that after standardization for socio-economic composition, all of the variables except worked before first birth decline to non-significance. This is unlike the differentials by desired family size, which showed residence status and education retaining statistically significant differentials after composition on all other

variables is controlled for.

We now consider how far the socio-economic differentials in proportions wanting more children standardized for number of living children and age are consistent with the similarly standardized differentials by desired family size. The correlation between the two variables across the 40 categories of the table is 0.72 (Pearson's R), which indicates much better fit between the two variables for Jamaica than for Guyana, where the correlation was 0.46. Figure 17 compares the z-scores for the two variables for a number of socio-economic categories, and shows that with only a few exceptions they are within one standard deviation of one another, and, unlike Guyana, there are no cases where the two variables contradict one another sharply.

The results in columns 6, 8 and 10 of table 31 indicate proportions wanting more children at family sizes 2, 3 and 4. The proportions are adjusted for age in order to reduce any effects due to differential age composition. Unfortunately, small sample size makes them difficult to interpret, as can be seen from the cell denominators shown in columns 7, 9 and 11 of the table.

Table 31 Percentages wanting more children by socio-economic groups: Jamaica

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- -just -ed mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
				N	%	N	%	N	%		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
ALL JAMAICA	48.9	48.9	48.9	48.9	1866	63.3	278	49.3	229	38.2	157
RESIDENCE STATUS											
Resides in rural area	45.9	51.5	51.5	50.9	983	65.7	130	53.7	100	46.1	83
Born rural, resides urban	50.6	46.5	46.5	46.9	621	60.0	93	46.9	89	30.9	56
Born urban, resides urban	56.5	45.0	45.0	46.2	262	63.2	55	43.9	40	24.7	18
PROB VALUE	0.006	0.017	0.017	0.167		0.685		0.472		0.081	
RELIGION											
Church of God	50.6	51.9	51.7	51.2	389	63.4	50	56.6	42	40.0	41
Anglican-Methodist	48.2	46.7	47.0	47.4	311	64.9	50	48.6	50	36.7	28
Catholic	50.0	43.1	44.6	44.4	166	60.8	32	34.5	22	31.5	14
Bapt-Morav-Other Protestant	47.7	49.2	48.9	49.2	857	65.2	124	50.5	99	34.2	58
No religion	51.8	50.9	50.8	49.7	143	52.7	22	46.1	16	56.7	16
PROB VALUE	0.819	0.959	0.379	0.525		0.848		0.538		0.517	
RESPONDENT'S EDUCATION											
0-5 years	42.6	56.4	55.2	55.6	235	80.2	28	72.0	16	44.6	22
6-7 years	39.1	47.4	46.9	46.7	404	51.3	48	45.3	53	45.9	37
Completed primary	46.2	49.2	49.0	49.0	781	68.7	116	52.5	108	33.0	79
Secondary or higher	65.9	45.9	47.3	47.3	446	57.2	86	39.9	52	37.8	19
PROB VALUE	0.000	0.018	0.083	0.068		0.021		0.094		0.530	
UNION STATUS											
Married	38.0	48.6	48.9	48.6	724	63.4	109	48.3	100	26.6	62
Common-law	50.8	51.5	51.3	51.5	658	69.9	98	48.2	83	49.5	67
Visiting	62.8	45.9	45.8	45.9	484	54.0	71	53.7	46	37.2	28
PROB VALUE	0.000	0.087	0.113	0.097		0.101		0.807		0.033	



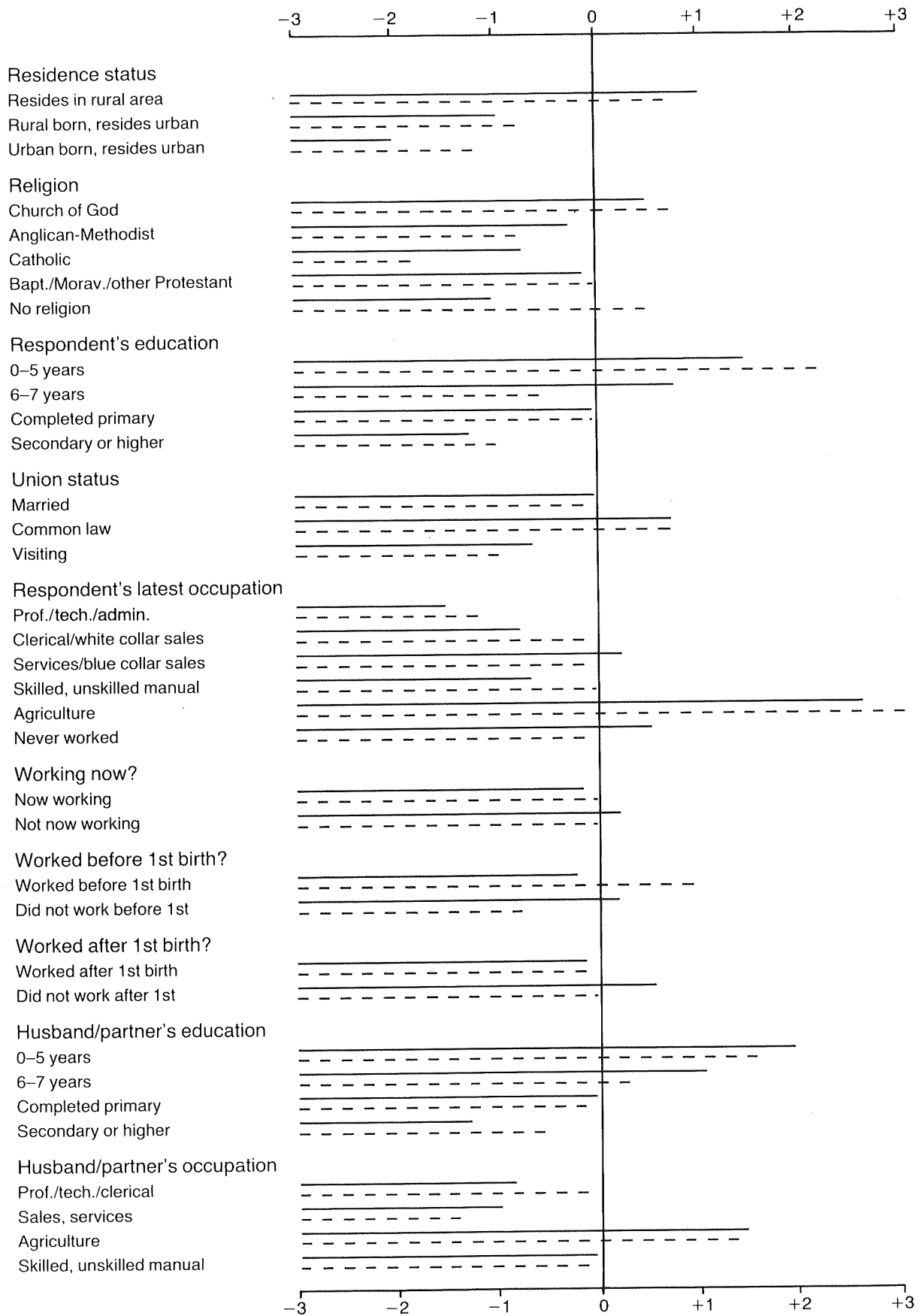
Table 31, continued

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- -just -ed mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
				N	%	N	%	N	%		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
<b>R'S LATEST OCCUPATION</b>											
Prof-Tech-Admin	60.7	45.4	47.7	47.3	168	54.9	35	42.1	31	19.5	5
Clerical-White Collar Sales	58.8	47.9	50.0	50.7	335	63.1	60	36.7	40	23.9	23
Services-Blue Collar Sales	43.0	48.3	47.3	48.8	693	60.7	97	51.0	81	38.8	81
Skilled or unskilled manual	47.0	49.0	49.9	50.7	253	69.1	42	60.3	39	34.1	24
Agricultural	38.5	60.2	57.3	57.1	130	87.2	9	62.1	17	78.1	5
Never worked	51.2	48.6	47.7	42.7	287	66.2	53	47.2	21	52.8	19
PROB VALUE	0.000	0.053	0.205	0.166		0.507		0.264		0.157	
<b>WORKING NOW?</b>											
Now working	49.6	48.9	49.4	49.3	796	64.1	120	48.3	108	23.6	59
Not now working	48.4	48.9	48.6	48.7	1070	62.7	158	50.3	121	47.0	98
PROB VALUE	0.605	1.000	0.736	0.772		0.825		0.773		0.004	
<b>WORKED BEFORE 1ST BIRTH?</b>											
Worked before 1st birth	51.0	51.4	46.1	45.6	980	58.9	153	48.9	125	29.3	64
Did not work before 1st	46.6	46.7	52.1	52.7	886	68.7	125	49.8	100	44.4	93
PROB VALUE	0.057	0.015	0.007	0.003		0.105		0.888		0.051	
<b>WORKED AFTER 1ST BIRTH?</b>											
Worked after 1st birth	42.4	48.4	48.4	47.8	1239	64.5	215	48.4	193	36.6	129
Did not work after 1st	61.9	49.2	50.0	51.1	627	59.1	63	54.4	36	46.0	28
PROB VALUE	0.000	0.700	0.591	0.315		0.449		0.505		0.345	
<b>HUSBAND/PARTNER'S EDUCATION</b>											
0-5 years	37.7	54.0	50.3	50.0	199	66.6	21	63.7	15	53.3	12
6-7 years	38.6	50.0	47.8	47.9	254	65.9	31	48.5	23	33.8	26
Completed primary	45.4	48.3	47.9	48.2	973	63.6	146	50.4	138	40.9	96
Secondary or higher	67.7	47.4	51.1	50.7	440	61.0	80	42.8	53	24.3	23
PROB VALUE	0.000	0.301	0.647	0.810		0.946		0.510		0.292	
<b>HUSB/PARTNER'S OCCUPATION</b>											
Prof-tech-clerical	61.5	48.7	51.6	51.5	304	64.3	58	40.8	43	27.3	23
Sales or services	48.6	44.0	45.2	45.1	257	59.9	41	46.9	39	53.5	15
Agricultural	36.4	53.7	49.8	49.9	376	74.3	30	59.1	37	51.2	21
Skilled or unskilled manual	49.9	48.4	48.7	48.7	929	61.6	149	50.3	110	35.7	98
PROB VALUE	0.000	0.037	0.332	0.318		0.578		0.396		0.191	
<b>WILL CHILDREN CONTRIBUTE TO H/HOLD WHEN THEY START WORK?<sup>a</sup></b>											
Expects no contribution	55.6	50.6	51.8	51.3	234	59.7	57	50.3	35	18.8	15
Yes, expects contribution	46.6	49.8	49.7	50.1	1100	62.6	195	50.4	176	39.7	124
Not asked	50.8	46.4	46.1	45.6	532	76.4	26	37.1	18	44.4	18
PROB VALUE	0.028	0.346	0.251	0.192		0.462		0.600		0.233	
<b>EXPECTED SOURCES OF MONEY SUPPORT IN OLD AGE<sup>b</sup></b>											
Children not mentioned	56.1	49.8	50.7	50.7	1051	58.9	164	47.8	137	39.1	78
Children mentioned (spont.)	39.5	47.7	46.6	46.6	812	69.6	114	51.6	92	36.7	78
Not asked	66.7	66.8	67.4	67.4	3	-	0	-	0	88.7	1
PROB VALUE	0.000	0.410	0.106	0.106		0.043		0.726		0.538	

a Question: "Do you expect your children to contribute to your household when they start working?"

b Question: "What means of financial support do you think you will have when you and your partner are old, or can no longer work for any other reason?"

Note: In this table "number of living children" counts a current pregnancy as a living child.



**Figure 17** z-score deviations above and below the mean for desired family size (—) and proportions wanting more children (---): Jamaica (desired family size and proportions wanting more children both standardized for number of living children and age)

There are none the less several rather interesting patterns. Among women with two children, the national proportion wanting a third child is 63 per cent, and there is comparatively little variation in willingness to have a third child between any of the numerically sizable groups. Urban women are not less willing than rural, and women with secondary education are only slightly less willing than the pooled group with less education (57 per cent versus 66 per cent). Similarly, women whose current or most recent occupation was classed as professional, technical or administrative have only slightly less willingness to have a third child (55 per cent) than other groups.

Among women with three children, 50 per cent say they want a fourth child, at the national level. Restricting attention to categories or combinations with more than 50 cases, we find that rural residents appear slightly more likely to say they want additional children than the pooled urban group, though the difference is non significant. Secondary educated women appear to be slightly less likely to want a fourth child, 40 per cent compared with 52 per cent among the pooled group of women with less than a secondary education. By husband's occupation, agriculture appears associated with a quite high proportion willing to have a fourth child (59 per cent), and the same is true at family size 4, where respondents with partners in agriculture have somewhat higher proportions wanting additional children; the comparative table in the synthesis chapter reveals that only negligible numbers of women with agricultural spouses use contraception for spacing purposes, so we are disinclined to think that these proportions are inflated.

Among women with four children, nearly 40 per cent said they wanted a fifth child. Apart from spouses of men in agriculture, the only strikingly different deviations from this mean are by residence status (lower among urban respondents), union status (lowest among married respondents, intermediate among visiting and highest among common law respondents) and work status (those working at time of survey and those who worked before first birth had substantially lower proportions wanting a fifth child).

In our effort to draw the firmest possible conclusions from the results for specific family sizes in columns 6–10 of table 31, we should check the levels of contraceptive use for spacing and terminating purposes (recalling that in socio-economic groups which implement contraception successfully to terminate childbearing there is likely to be a downward bias in proportions wanting more, while in groups that use contraception successfully to space births there is a bias in the opposite direction).

Carrying out these checks by consulting table 75, we find that the contraceptive use differentials for these particular social categories (ie residence status, union status, work status) are probably not distorting the proportions wanting more children that are observed here, though before making a firm judgement one would like more information about relative contraceptive success.

*Trinidad and Tobago: Proportions wanting more children*  
At the national level in Trinidad and Tobago, 53 per cent of in union and fecund women wanted more children. The unstandardized percentages wanting more children shown in column 1 of table 32 indicate statistically significant and numerically large differentials between categories of all 11

variables, with a range of about 40 per cent between maximum and minimum proportions.

Comparing columns 1 and 2, however, we find that standardizing for parity and age greatly attenuates virtually all the differentials, and reduces four of the 11 variables to non-significance. Among the seven variables that remain significant, the differentials between categories are, with one exception, substantively trivial, and do not exceed 5 per cent between highest and lowest proportions wanting more. The exception is the noticeably higher proportion wanting additional children among women classified as agricultural or unskilled manual, which cannot be attributed to higher contraception for childspacing purposes.

The results in column 4 of table 32 indicate that when proportions wanting additional children are standardized for composition on age, parity and all socio-economic variables, only two variables remain statistically significant, ethnicity and union status. The differences, however, are small, 4 per cent by ethnicity (55 per cent of non-Indians want additional children as against 51 per cent of Indians) and 5 per cent by union status (52–53 per cent of visiting and married women versus 57 per cent among common law women).

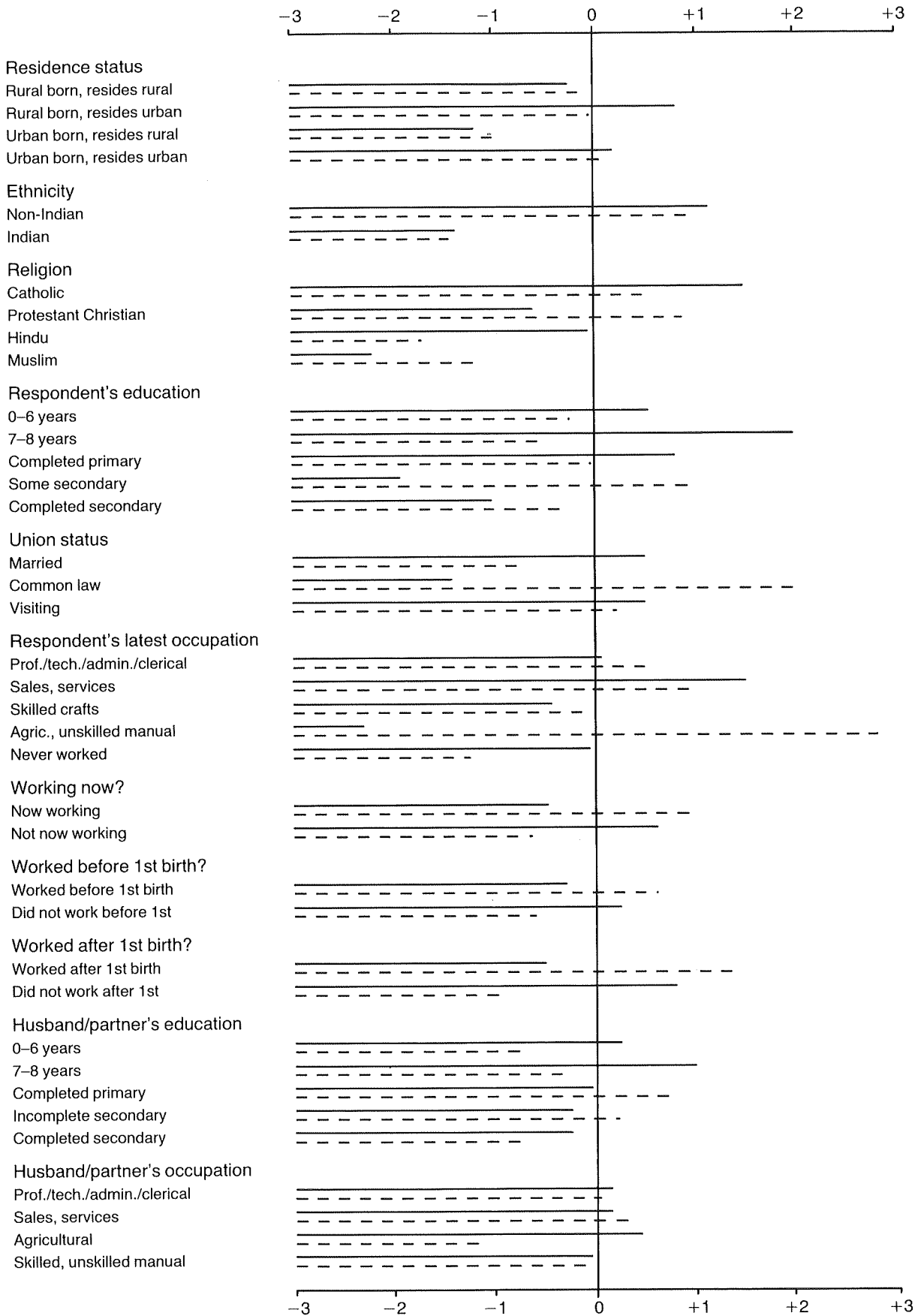
In the case of Trinidad and Tobago, the proportions wanting more children standardized for number of living children and age shown in column 2 are highly inconsistent with desired family size, similarly standardized. The correlation (Pearson's R) between the two variables across 38 social categories is small and negative (–0.17). But this lack of correlation is readily understandable since both variables have extremely small standard deviations across the 38 categories, 0.05 from the mean desired family size of 3.68 and 2.6 from the mean proportion wanting more children of 53 per cent. With such little variation in either variable, the lack of correlation is hardly surprising.

Figure 18 compares for the 38 social categories the z-score deviations above and below the mean for proportions wanting more and for desired family size, both standardized for parity and age. The deviations from the mean for the two indicators are seen to agree quite well for residence status and ethnicity, but poorly on most other variables.

Turning now to columns 6–11 of table 32, which show proportions wanting more children at actual family sizes 2, 3 and 4, for the various social categories, we see that there are relatively few consistently maintained and statistically significant differentials that persist at all family sizes, apart from the clearly maintained differential by ethnicity and apart from the systematic tendency for women in common law unions to have higher proportions wanting more children when compared to women in married unions.

### 3.2 EFFECT OF DISSOLUTION AND RE-ENTRY INTO NEW PARTNERSHIP

This section examines for the three countries several questions about what happens to the preferences of women when they enter a new partnership. As background to this, we note that previous research (Blake 1961, pp 196, 216, and Lightbourne 1970, pp 97–100) has presented direct evidence suggesting that in Caribbean societies men tend to



**Figure 18** z-score deviations above and below the mean for desired family size (—) and proportions wanting more children (---): Trinidad and Tobago (desired family size and proportions wanting more children both standardized for number of living children and age)

Table 32 Percentages wanting more children by socio-economic groups: Trinidad and Tobago

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- just- ed mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
				N		%	N	%	N	%	N
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
ALL TRINIDAD AND TOBAGO	53.3	53.3	53.3	53.3	2895	61.1	558	40.7	367	24.4	297
RESIDENCE STATUS											
Born rural, resides rural	48.0	53.0	53.0	54.5	902	63.4	165	32.3	120	18.4	105
Born rural, resides urban	53.3	53.7	53.7	53.5	875	63.2	159	41.3	104	25.7	91
Born urban, resides rural	49.0	50.6	50.6	49.6	261	48.7	47	44.1	37	24.7	27
Born urban, resides urban	60.3	54.1	54.1	53.0	857	60.6	187	48.5	106	31.4	74
PROB VALUE	0.000	0.595	0.595	0.368		0.277		0.080		0.235	
ETHNICITY											
Non-Indian	59.0	56.1	56.3	55.1	710	64.4	328	44.7	186	30.4	137
Indian	45.1	49.3	49.1	50.7	185	56.5	230	36.6	181	17.5	160
PROB VALUE	0.000	0.000	0.000	0.058		0.055		0.104		0.008	
RELIGION											
Catholic	58.6	54.9	53.7	53.4	028	66.7	216	44.0	128	32.0	89
Protestant Christian	57.1	55.8	54.7	54.6	996	60.2	174	44.2	107	25.3	102
Hindu	41.0	48.2	50.9	51.3	686	55.1	117	34.5	104	16.9	94
Muslim	49.4	50.2	52.7	53.5	185	54.5	51	35.1	28	20.6	13
PROB VALUE	0.000	0.000	0.516	0.605		0.116		0.336		0.115	
RESPONDENT'S EDUCATION											
0-6 years	29.0	52.7	55.7	55.6	503	57.9	39	35.2	47	25.1	73
7-8 years	42.7	52.1	52.6	52.5	606	53.0	114	42.0	88	26.7	70
Completed primary	56.6	53.4	52.8	52.5	836	66.3	176	39.2	122	20.5	90
Some secondary	68.0	55.9	54.4	54.8	510	67.8	113	45.6	63	28.5	45
Completed secondary	72.4	52.5	51.4	51.7	440	55.9	115	41.2	47	22.7	19
PROB VALUE	0.000	0.540	0.481	0.496		0.056		0.830		0.834	
UNION STATUS											
Married	44.4	51.6	52.6	52.9	746	57.7	385	36.8	249	23.2	216
Common-law	53.1	58.0	57.3	56.7	505	72.7	79	49.9	76	30.9	58
Visiting	77.7	54.3	52.2	51.6	644	65.7	94	47.3	42	20.1	23
PROB VALUE	0.000	0.004	0.045	0.084		0.026		0.077		0.424	
R'S LATEST OCCUPATION											
Prof-tech-admin-clerical	71.1	54.7	55.0	53.2	530	62.8	136	44.8	59	19.4	31
Sales and services	53.3	56.3	55.1	53.4	656	68.6	118	41.3	73	33.2	78
Skilled crafts	62.0	53.6	52.3	50.1	230	72.6	45	28.9	25	13.3	23
Agric. + unskilled manual	42.4	60.9	60.3	58.8	208	64.8	23	75.0	15	12.9	18
Never worked	46.1	49.9	50.7	53.0	272	53.9	235	38.2	196	24.0	148
PROB VALUE	0.000	0.000	0.009	0.262		0.026		0.033		0.148	
WORKING NOW ?											
Now working	61.8	56.2	54.7	54.6	007	68.2	222	38.9	105	24.8	82
Not now working	48.8	51.8	52.6	52.6	888	56.5	335	41.4	262	24.3	215
PROB VALUE	0.000	0.004	0.295	0.331		0.006		0.651		0.920	
WORKED BEFORE 1ST BIRTH ?											
Worked before 1st birth	64.0	55.1	53.5	53.8	313	60.1	287	44.0	135	28.7	104
Did not work before 1st	44.4	51.9	53.1	52.9	582	62.2	270	38.8	233	22.2	194
PROB VALUE	0.000	0.035	0.811	0.578		0.605		0.309		0.208	
WORKED AFTER 1ST BIRTH ?											
Worked after 1st birth	47.8	57.1	55.1	55.0	245	66.4	322	43.6	171	24.9	149
Did not work after 1st	57.5	50.5	51.9	52.0	650	53.9	235	38.1	196	23.9	148
PROB VALUE	0.000	0.000	0.270	0.303		0.002		0.271		0.838	

Table 32, continued

	All in union and fecund women, with mean adjusted by multiple regression for:					Selected family sizes, with mean adjusted for age, age squared					
	Unad- just- ed mean	NLC, Age	Prior vars, NLC, Age	All other vars, NLC, Age		2 children		3 children		4 children	
					N	%	N	%	N	%	N
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
<b>HUSBAND/PARTNER'S EDUCATION</b>											
0-6 years	32.4	51.0	51.8	52.3	416	53.8	40	34.6	54	22.7	35
7-8 years	41.7	52.3	52.7	53.2	470	56.8	73	38.9	63	29.6	70
Completed primary	54.7	55.4	55.3	55.5	045	69.1	208	45.8	132	21.8	114
Incomplete secondary	65.3	54.5	53.5	53.3	442	65.0	124	36.2	54	22.7	46
Completed secondary	67.4	51.1	50.9	49.9	521	47.3	111	40.9	64	27.1	32
PROB VALUE	0.000	0.141	0.302	0.211		0.002		0.563		0.788	
<b>HUSB/PARTNER'S OCCUPATION</b>											
Prof-tech-admin-clerical	60.7	53.8	55.4	55.4	610	59.2	132	45.7	81	23.0	55
Sales or services	59.8	54.9	54.5	54.5	492	61.9	104	44.3	71	34.8	46
Agricultural	35.9	50.5	51.7	51.7	266	40.9	35	47.5	38	19.3	36
Skilled + unskilled manual	51.3	53.1	52.4	52.4	527	64.2	285	35.6	178	23.1	160
PROB VALUE	0.000	0.499	0.476	0.476		0.050		0.248		0.310	

Notes: (a) Columns labeled "NLC, Age" are standardized for number of living children (NLC), NLC squared, age, and age squared. The means in column 3 are standardized for all prior socioeconomic variables as well as by NLC and age. The means in column 4 are standardized for all other socioeconomic variables shown in the table.

(b) In this table, a current pregnancy is counted as a living child.

want several children in each new partnership they enter, which implies that sequential monogamy would lead to higher fertility preferences among men. According to Blake, the male, if he wants the rewards of parenthood, must typically have children in his present union, because 'the children born in past unions are not normally attached to him... It follows that although men do not care to have offspring from a purely casual association, they do tend, if they feel that a union has "possibilities", to want their own children in it'.

The present writer subsequently found strong empirical support for Blake's argument in a small 1969 survey of 118 Jamaican men which indicated that among the married and common law men the number of children the man had by prior partners was irrelevant in determining the number he wanted by his current partner, as was the number of children the current partner had borne for other men.<sup>3</sup> Instead, virtually all men wanted several children by the present partner, regardless of the number of living children she had had for other men (Lightbourne 1970).

The question arises as to how far this strong preference for several children in each new partnership observed among Jamaican men is true for women in Guyana, Jamaica and Trinidad and Tobago. If it is true for women

as well as men, we would expect to find a very high proportion of women wanting more children if they have no children for the current partner, irrespective of the number of children for past partners. We expect this basic preference to characterize both ethnic groups, because it concerns a more general issue than union status. To the extent that partnership change is less frequent among the Indian subgroups, the results will be less applicable there. However, it is the national impact of the hypothesized relationship that is most important, and it is this we focus on.

#### Method of analysis

The basic method adopted here for investigating this issue is to compare the percentage wanting more children among women (1) with no living children for the current partner, (2) with some children for the current and some for prior partners, (3) with all of their children for the current partner. To estimate the number of offspring for the current male partner, birth dates of living children were compared with the date of entry to the current partnership, and children born nine months or more after this date were attributed to the present partner. Women were then grouped into three categories, (1) no children for present partner, (2) some but not all for present partner, (3) all for present partner. We stress that the question being tested is whether a new partnership causes changes in preferences, other things being equal. Thus we are not concerned with

<sup>3</sup> While the 1969 sample was small, the relationships observed between variables were none the less so strong and so statistically significant that the present writer would be surprised if a larger survey led to different conclusions.

whether continuity of exposure results in higher fertility or vice versa. The relation between stability and fertility is examined elsewhere (Lightbourne and Singh 1982 and Harewood 1984).

Since proportions wanting additional children are very heavily influenced by the number of children already living, it will evidently be necessary to control for this. As there is some evidence of a decline in the percentage wanting additional children with age after number living has been controlled for, it is desirable to control for this factor also. Additionally, proportions wanting more children at each parity are upward biased by proportions successfully using contraception for spacing purposes and downward biased by proportions using contraception for stopping purposes (see chapter 2), and to control for this it is desirable to control for social status, since there is much evidence of lower unwanted fertility and higher contraceptive use for spacing and stopping purposes among the more educated and those with higher occupational status. A number of other socio-economic variables are also controlled for, including residence status, religion, ethnicity (in Guyana and Trinidad and Tobago only), three work status variables, union status, husband's education, husband's occupation and, in Jamaica, two 'value of children' variables. For details of the categorization used, see appendix 1.

Based on these considerations, table 33 presents percentages wanting more children classified by number of children for present partner, with and without statistical controls for the above-mentioned variables, using ordinary least squares regression to estimate percentages wanting more children adjusted for the various factors. The significance level of the number of children for present partner variable is assessed as the increment to sums of squares contributed by that variable (treated as two binary variables) when it is the last to enter the regression equation, and is expressed as a prob value (ie probability that all the means are the same). The analysis is restricted to currently in union and fecund women with one or more living children, and counts a pregnancy as though it were a living child.

#### **Effect of partnership dissolution on wanting more children**

Focusing first on the results for family sizes 1, 2, 3, 4, 5 and 6+, it is apparent that women do not automatically want additional children if they have none for the current partner.

It is nevertheless clear in all three countries that women at family sizes 3 and above are substantially more likely to say they want additional children if they have none for the current partner, and this finding holds when there are no controls, when age (single years of age and single years of age squared) is controlled for, and when age and all socio-economic variables are controlled for.

Effects at the higher family sizes appear to be greatest in Trinidad and Tobago, intermediate in Guyana and weakest in Jamaica.

At family size 1, however, having zero for the present partner seems to slightly decrease the likelihood of wanting additional children in Guyana and Jamaica while raising it very slightly in Trinidad and Tobago, though none of these effects are close to being statistically significant.

At family size 2, women with one child for the present partner have distinctly higher proportions wanting more children in all three countries, though the difference is non-significant in every case.

Results for the total sample of currently in union and fecund women with one or more children are given in rows 1-4 of table 33. While these have the drawback of masking the parity-specific detail shown in the remainder of the table, they have the advantage of being based on larger sample size and of permitting summary statements about overall results. Focusing first on the results in the second row, where controls have been imposed for age, age squared, number of living children and number of living children squared, it becomes apparent that in all three countries, having zero children for the current partner does have a significant effect in raising the proportion who want more children. The effect of having some for the present partner is more ambiguous. In Guyana and Jamaica the 'some are his' category has higher proportions wanting additional children than the 'all are his' group, but in Trinidad and Tobago there is little difference between the two categories.

We now turn to the results adjusted for 15 variables in row 3 of table 33.

These indicate that for Guyana the adjusted percentage wanting more children is 47 per cent among women with zero children for the current partner, 44 per cent among those with some, and 38 per cent among those with all for the current partner; this result is significant at the 0.01 level.

The results for Jamaica are strikingly similar. The proportions wanting more children are 47 per cent for women with zero for the current partner, 45 per cent for those with some, and 39 per cent among women with all their children for the current partner.

The figures for Trinidad and Tobago are rather different. The proportion wanting additional children is much higher among women with zero children for the current partner (60 per cent) than among those with all for the present partner (44 per cent); however, women with some for the present partner have somewhat lower percentages wanting additional children (35 per cent) once socio-economic characteristics are controlled for, but not in row 2.

The results discussed above do indicate that having zero children for the present partner is associated with noticeably higher proportions wanting more in all three countries. But the observed effect in raising the female proportion wanting more children is far weaker than we would expect if women typically wanted several children in each new partnership, in which case close to 100 per cent would want more children if there were zero for the current partner, regardless of the total number already living. The observed percentages wanting more are much lower than that, however, and the parity-specific results have indicated that women's preferences are dominated by total number of living children rather than number for the present partner; it is thus plainly incorrect to assume that each time a woman enters a new partnership she will automatically want at least one child for the present partner. Instead, the data indicate only that she is just a little more likely to want an additional child.

It is clear, then, that the almost universal desire for

**Table 33** Percentage wanting more children among currently in union and fecund women by number of children for present husband or partner, for selected family sizes:<sup>a</sup> Guyana, Jamaica and Trinidad and Tobago

Variables controlled	Guyana:				Jamaica:				Trinidad and Tobago:			
	Number of children for present husband or partner				Number of children for present husband or partner				Number of children for present husband or partner			
	None are his	Some are his	All are his	Prob values	None are his	Some are his	All are his	Prob values	None are his	Some are his	All are his	Prob values
<b>A Family size:<sup>a</sup> One or more children</b>												
No controls	58.4	28.8	37.8	0.000	55.6	31.8	44.4	0.000	65.5	26.3	44.1	0.000
Age, parity <sup>b</sup>	45.3	45.5	37.6	0.000	46.3	45.0	39.5	0.019	56.2	46.8	43.2	0.000
15 variables <sup>c</sup>	46.6	44.1	37.6	0.005	47.1	44.6	39.4	0.028	59.6	35.8	44.0	0.000
N of cases	337	293	1996		380	542	732		410	262	1787	
<b>B Family size:<sup>a</sup> One child</b>												
No controls	78.8	NA <sup>d</sup>	85.4	0.043	71.9	NA <sup>d</sup>	80.1	0.049	87.4	NA <sup>d</sup>	87.1	0.990
Age <sup>b</sup>	80.5	NA	84.6	0.260	73.3	NA	80.0	0.187	88.2	NA	86.6	0.748
15 variables <sup>c</sup>	81.7	NA	83.9	0.730	74.0	NA	79.5	0.401	89.2	NA	86.0	0.401
N of cases	156	NA	295		146	NA	181		201	NA	329	
<b>C Family size: Two children</b>												
No controls	52.4	77.4	58.3	0.062	66.2	65.4	55.4	0.166	63.6	76.1	59.1	0.073
Age <sup>b</sup>	57.6	74.5	57.6	0.155	68.4	64.5	54.7	0.090	67.2	75.2	58.5	0.038
15 variables <sup>c</sup>	62.6	71.1	57.0	0.312	69.5	62.7	55.1	0.186	60.1	67.5	60.7	0.653
N of cases	63	31	343		80	78	157		81	45	431	
<b>D Family size: Three children</b>												
No controls	58.3	50.0	40.3	0.059	57.1	43.8	45.0	0.273	65.3	34.9	37.7	0.001
Age <sup>b</sup>	61.0	49.6	40.0	0.030	56.0	43.2	46.0	0.321	66.8	33.6	37.7	0.000
15 variables <sup>c</sup>	68.0	47.9	39.6	0.042	54.6	41.4	48.2	0.361	70.6	32.6	37.3	0.000
N of cases	36	66	298		49	96	111		45	55	266	
<b>E Family size: Four children</b>												
No controls	48.0	46.7	31.7	0.037	40.5	40.5	27.0	0.193	36.3	26.4	22.7	0.352
Age <sup>b</sup>	50.6	47.0	31.4	0.021	41.0	39.1	28.6	0.317	42.0	25.0	22.5	0.128
15 variables <sup>c</sup>	39.6	42.2	33.6	0.578	36.0	39.6	30.8	0.601	48.0	27.3	21.2	0.082
N of cases	25	60	249		37	84	63		21	62	213	
<b>F Family size: Five children</b>												
No controls	23.5	17.3	15.7	0.698	30.4	25.9	12.8	0.139	35.8	29.7	15.9	0.023
Age <sup>b</sup>	24.1	16.9	15.8	0.699	30.9	25.3	13.6	0.176	37.2	29.3	15.8	0.018
15 variables <sup>c</sup>	23.1	12.5	16.9	0.605	34.0	25.5	11.7	0.169	35.9	25.9	17.2	0.289
N of cases	17	52	216		23	81	47		20	52	148	
<b>G Family size: Six or more children</b>												
No controls	27.5	12.7	6.2	0.000	15.6	11.3	10.3	0.628	31.9	13.7	7.0	0.000
Age, parity <sup>b</sup>	28.1	12.8	6.2	0.000	14.7	11.2	10.6	0.756	31.9	13.4	7.2	0.000
15 variables <sup>c</sup>	30.1	13.3	5.8	0.000	16.0	11.2	10.4	0.441	34.9	13.7	6.6	0.027
N of cases	40	165	514		45	231	145		40	142	304	

<sup>a</sup>'Family size' in this table refers to number of living children, counting a current pregnancy as a living child.

<sup>b</sup>The controls for family size include number of living children (counting current pregnancy as living child) and number of living children squared. The controls for age include single years of age and single years of age squared.

<sup>c</sup>Controls for 15 variables include controls for age, age squared, number of living children (counting current pregnancy as a living child), number of living children squared and 11 socio-economic variables, which include residence status, ethnicity, religion, education, union status, respondent's latest occupation, whether working now, whether worked before first birth, whether worked after first birth, husband or partner's education, and husband or partner's occupation.

<sup>d</sup>NA denotes 'not applicable'; women with one living child could either have all their children for the current partner, or none of their children for the current partner, but not 'some' of their children for the current partner.



several children in each partnership found among Jamaican men does not exist among women in the three societies under consideration.

Yet according to the 1969 study, male respondents were much less likely to report contraceptive use in instances where they wanted additional children, especially if they reported wanting a child soon rather than later. This strongly suggests a frequent conflict between male and female motivation in partnerships where the woman has several children for prior partners, which leads to the question of whether it is the woman or the man who usually prevails. By far the best way of answering this would be to conduct a longitudinal study to see what actually happens. But as a second best, we can look for clues in the three surveys, by asking whether (1) contraceptive use is lower among women with zero children for the current partner than among women with some children for the present partner and an equal total number of children, (2) the proportion currently pregnant is higher among women with zero for the present partner.

If men universally want at least one child when they enter a new partnership about which they are serious, then one would predict lower contraceptive use among women with zero children for the current partner if one assumes that men were at least somewhat successful in pressuring women into bearing additional children.

### Partnership dissolution and contraception among women who want no more

The left-hand panel of table 34 tests whether the number of children for the current partner affects the percentage using contraception among women who want no more children. The percentages using contraception are adjusted for potentially confounding effects using multiple classification analysis. The MCA treats four variables as metric, namely NLC (number of living children, counting a current pregnancy as a living child), NLC squared, single years of age and age squared, and two as categorical, namely respondent's education and respondent's occupation.

The results among women who want no more children for Jamaica and Trinidad and Tobago in table 34 suggest a rather weak effect but in the expected direction.

In the case of Trinidad and Tobago, the effect is least weak. With all variables controlled for, 56 per cent with no children for the present partner were using contraception, compared to 67 per cent among those with all their children for the current partner. The effect is statistically significant ( $p = 0.074$ ), but is weaker than one would expect if men wanted an immediate pregnancy and were successful in pressuring women to provide one. But it is very possible, and indeed likely, that men do not

**Table 34** Percentages using contraception among currently in union and fecund women by whether more wanted and by number of children for present partner

Variables controlled	Wants no more children				Wants more children			
	Number of children for current husband/partner				Number of children for Current husband/partner			
	None are his (1)	Some are his (2)	All are his (3)	Prob value (4)	None are his (5)	Some are his (6)	All are his (7)	Prob value (8)
<b>A Guyana</b>								
Age, NLC	44	44	47	0.775	23	20	34	0.002
Age, NLC, RED	44	44	46	0.803	24	21	34	0.002
Age, NLC, RED, ROCC	46	46	46	0.989	24	21	34	0.005
N of cases	51	231	1073		131	111	675	
<b>B Jamaica</b>								
Age, NLC	49	57	55	0.341	31	38	47	0.002
Age, NLC, RED	49	57	55	0.372	33	42	44	0.034
Age, NLC, RED, ROCC	50	57	55	0.436	33	42	43	0.052
N of cases	120	362	342		194	166	305	
<b>C Trinidad and Tobago</b>								
Age, NLC	55	68	66	0.117	43	48	62	0.000
Age, NLC, RED	58	67	67	0.156	43	48	62	0.000
Age, NLC, RED, ROCC	56	66	67	0.074	43	47	62	0.000
N of cases	106	224	868		180	97	692	

NOTE: NLC = number of living children; RED = respondent's education; ROCC = respondent's occupation. Variables controlled by multiple classification analysis. The prob values shown refer to significance level when number for present partner is the last variable entered.

unanimously want immediate pregnancies, so that one would need matched data on male desires to fully test the hypothesis concerning contraceptive use. The results among Jamaican women who want no more children are in the expected direction (49 per cent using among those with none for present partner versus 56 per cent among those with all for current partner, but with higher use among those with some for present partner) but are non-significant ( $p = 0.381$ ).

The results for Guyana, on the other hand, among women who want no more children show no difference in contraceptive use between women with none for present partner and those with all for him.

Taken together, these results suggest that Jamaican and Guyanese men are not conspicuously successful in discouraging contraceptive use among women who want to stop childbearing, though in Trinidad and Tobago there is some sign of a statistically significant effect in that direction.

#### Partnership dissolution and contraception among women who want more

The right-hand side of table 34 tests whether the number of children for present partner affects the likelihood of contraceptive use among women who want additional children.

In all three countries, women with zero children for present partner have lower contraceptive prevalence, 7 percentage points lower in Guyana, 10 points lower in Jamaica and 19 points lower in Trinidad and Tobago, after all statistical controls have been introduced, and these differences are all statistically significant. Contraceptive prevalence in the 'some children are his' category is markedly lower than in the 'all are his' category in Guyana and in Trinidad and Tobago, but not in Jamaica. We may

conclude, not unexpectedly, that women in childless partnerships are less interested in spacing than those in fertile ones.

#### Partnership dissolution and proportions pregnant

A second approach to investigating whether it is the man or the woman who prevails is to compare the percentages of women currently pregnant classified by number of living children for the present partner, under the hypothesis that if males prevail, women with no children for the present partner will be more often pregnant. This variable was chosen instead of parity-specific fertility because it was easily adaptable to multivariate analysis.

Table 35 investigates this hypothesis for all three countries, using MCA-style multiple regression analysis to estimate proportions pregnant while adjusting for several factors likely to affect this, including age, age squared, NLC (number of living children not counting a pregnancy as a living child), NLC squared, LCBI (length of last closed birth interval) and LCBI squared. Subsequent controls are introduced for socio-economic status, including education of respondent and partner, occupation of respondent and partner, residence status, three work status variables, religion and, for Guyana and Trinidad and Tobago only, ethnicity. To further reduce 'noise' the table is limited to in union women aged 20–39 who have one or more living children.

In all three countries, with all variables controlled for, table 35 indicates that women with zero offspring for the present partner are about one and a half times as likely to report being pregnant as respondents with all of their children for the current partner, the ratios being 1.48 for Guyana, 1.49 for Jamaica and 1.48 for Trinidad and Tobago. But the inter-category differences in proportions pregnant on the number for present partner variable are

**Table 35** Percentages pregnant among currently in union women aged 20–39 with one or more children, with full data available, by number of children for current partner, with and without controls: Guyana, Jamaica and Trinidad and Tobago

Variables controlled	Guyana:				Jamaica:				Trinidad and Tobago:			
	Number of children for current husband/partner				Number of children for current husband/partner				Number of children for current husband/partner			
	None are his (1)	Some are his (2)	All are his (3)	Prob values (4)	None are his (5)	Some are his (6)	All are his (7)	Prob values (8)	None are his (9)	Some are his (10)	All are his (11)	Prob values (12)
No controls	13.5	9.9	9.6	0.255	11.2	9.0	9.1	0.563	9.2	12.9	9.5	0.230
Age, NLC <sup>a</sup>	13.0	11.3	9.3	0.209	11.2	9.3	8.8	0.551	9.1	13.9	9.3	0.082
Age, NLC, LCBI <sup>b</sup>	13.1	11.3	9.3	0.201	12.2	9.2	8.4	0.252	9.5	13.9	9.2	0.082
16 variables <sup>c</sup>	14.1	9.9	9.5	0.291	12.4	9.2	8.3	0.217	12.7	14.1	8.6	0.037
No of cases	178	294	1465		267	454	496		238	261	1304	

<sup>a</sup>The controls for age, NLC refer to controls for age (single years), age squared, NLC and NLC squared.

<sup>b</sup>The control for LCBI refers to length in months of last closed birth interval.

<sup>c</sup>Controls for 16 variables include age, age squared, NLC, NLC squared, LCBI, and, for Guyana and Trinidad and Tobago, controls for 11 socio-economic variables including residence, religion, ethnicity, education, union status, respondent's latest occupation, whether working now, whether worked before first birth, whether worked after first birth, husband's education and occupation. For Jamaica, ethnicity is not controlled for but two 'expectation of child support variables' are added, leading to a total of 12 social variables controlled for and 17 variables in all.

NOTE: Number of living children (NLC) in this table does not count a current pregnancy as a living child.

statistically significant for only one country, Trinidad and Tobago ( $p = 0.037$ ).

For Guyana and Jamaica, the proportion pregnant was almost identical in the 'some children are his' and 'all are his' categories, and only the condition of having zero for present partner had any effect in raising this. This does not hold for Trinidad and Tobago, however, where the proportion pregnant is actually higher in the 'some are his' category than in either the 'none' or 'all' categories.

Had sample size been larger, we would have subdivided table 35 into groups of women who did and did not want more children, but even as it stands, proportions pregnant are based on rather small numbers.

### Conclusions

The contrast between women with no children for present partner and those with all for present partner indicates: (1) that in all three countries women are more willing to bear an additional child if they have none for the present partner; (2) that in Trinidad and Tobago, and perhaps in Jamaica, they are somewhat less apt to use contraception and (3) that in all three countries they are about 50 per cent more likely to be pregnant, though the effect is statistically significant only in Trinidad and Tobago.

The contrast between women with some children for present partner and those with all for present partner is somewhat less clear cut, no doubt in part because the 'some for present partner' is a catchall category whose composition by number of living children is probably differently weighted between the countries and perhaps even between those who want more and those who want no more.

While the data do suggest important relationships, the surveys were not designed for testing the hypotheses examined above. To get the most reliable possible count of children by current partner and date of entry to current partnership, for fertility rate estimation, we would have preferred to directly ask the respondent to identify which children were by the current partner, perhaps obtaining children's surnames as an aid, and then using date of the first birth for the current partner to probe for the starting date of the partnership. The respondent's view on whether her partner wanted (more) children would have been useful, and the partner's own view would have been extremely useful, though costly to secure.

Despite these reservations, the data at hand clearly imply that entry to new partnerships tends to stimulate women into having children they would not otherwise have.

These findings are consistent with those reported by Ebanks *et al* (1974) and Nobbe *et al* (1976), and also those reported in the Jamaica Fertility Survey First Country Report (1979) and by Lightbourne and Singh (1982), which imply that unstable mating is ceasing to play its previously documented role as a fertility depressant in the English-speaking Caribbean.

Previous studies, based on censuses and surveys from the 1940s and 1950s, clearly showed higher fertility among individuals in stable partnerships than among those experiencing less stable conjugal histories (Roberts 1955, Ibberson 1956, Roberts and Braithwaite 1960, Cumper 1966, Blake 1961 and Stycos and Back 1964). This was

plainly the result of a situation where contraception was very seldom used, and where the amount of time exposed to risk of conception was the key determinant of fertility, so that women in stable partnerships maximized their fertility and unstably mated women reduced it as a consequence of lost exposure time.

With increasingly widespread and effective contraceptive use among women who want to terminate childbearing, however, it is obvious that women in stable partnerships will limit their fertility markedly, while those experiencing a succession of partnerships might well limit it a good deal less, either because of their own desire to have additional children in order to please new partners or because the partners themselves are persistent or persuasive.

### 3.3 PREFERENCES FOR CHILDREN OF A GIVEN SEX

In some cultures couples typically want at least one male child, as in Korea, Taiwan, and among traditional Hindus in India. Moreover, instances exist where couples are obviously sufficiently strongly motivated to keep on having additional children until at least one male child is achieved. It is this latter point that is of importance from a policy point of view – whether the preference for a child of a given sex (or for a particular balance of girls and boys within the family) is sufficiently intense to push parents into having additional children to a greater extent than if they had achieved the preferred balance of male and female children, thereby raising the average number of children ultimately desired.

A total of three different approaches are used to examine whether preferences for children of a given sex exist, including (1) proportions wanting more children, (2) preferred sex of next child, (3) fertility rates. Finally, we assess the likely demographic impact in pushing up number of children preferred of any existing sex preference. Estimation techniques are described in the section for the first country, Guyana. We first briefly describe these approaches then apply them to each of the three countries.

**1 Proportions wanting additional children by gender combinations:** One analytical approach used here to assess whether gender preferences are important in pushing up the total number of children desired is to examine proportions wanting additional children, tabulated both by total number of living children and by number of living sons. If it were observed, for example, that respondents with no daughters systematically present noticeably higher proportions wanting additional children at each parity than those with at least one daughter, we would conclude that a preference for at least one daughter exists.

Simulations by McClelland (1979), however, have indicated that this approach is fully appropriate only in populations in which individuals share similar preferences rules (for example all desire at least one daughter), and may be misleading if applied to a population in which different groups have diverse and strongly held gender preferences. Clearly, the analyst should not rely solely on this approach.

2 Preferred sex of next child: Fortunately, WFS surveys asked respondents who wanted more children the preferred sex of the next child, coding the responses as 'boy, girl, either'. Results based on these responses undermine the 'heterogeneous gender preference' hypothesis if respondents with both boys and girls have a greater propensity to state they do not mind which sex the next birth is, and if respondents with children of only one sex overwhelmingly prefer the next child to be of the opposite sex.

This provides us with a useful second data source for the analysis of preferences of children of a given gender in the three countries studied, using proportions wanting the next child to be male or female, classified by total number of living children and by number of boys living and girls living.

3 and 4 Gender composition, contraception and marital fertility: Other approaches have been explored by a cross-national study by Cleland, Verrall and Vaessen (1983), which among other things examines the effects of gender composition on use of contraception and on marital fertility in 28 countries including Guyana, Jamaica and Trinidad and Tobago. We refer the reader to this study for discussion concerning use of contraception in relation to sex preferences, but briefly report results concerning marital fertility here.

#### Guyana: Preferences for children of a given sex

##### *Guyana: Overt verbal preferences*

Respondents who wanted additional children were asked whether they would prefer the next child to be a boy or a girl, while those who wanted no additional children were not asked. In table 36, we can discern a slight – though not overwhelming – preference for boys if we focus on women with an equal number of male and female children; among those with zero children, 41 per cent would prefer the first child to be a son as compared to 26 per cent preferring a daughter, though 33 per cent have no preference, or are undecided. The same kind of pattern is evident among women with one boy and one girl, where 34 per cent would prefer the third child to be male, 22 per cent would prefer a female and 44 per cent have no preference.

Table 36 also presents a case where the number of boys and girls is unequal, namely that of women who have one living child. The results clearly indicate that most respondents (about 80 per cent) would prefer a mixed sex family to having all girls or all boys, with about 5 per cent preferring all boys, 5 per cent preferring all girls and the remaining 15 per cent being indifferent as to whether they achieve a boy–girl combination with their second child. These results argue strongly against the idea that many Guyanese have the diverse and strongly held gender preferences posited in the McClelland simulation, so that in the case of Guyana it is appropriate to use proportions wanting more children classified by parity and sex as an instrument of seeing whether gender composition affects the desire for additional children.

##### *Guyana: Preferences inferred from proportions wanting more children*

Table 37 presents detailed data on proportions wanting more children subdivided by number of sons and number

**Table 36** Preferred sex of next child among women who want more children by number of living children and gender composition: Guyana

Number of living:		Percentage preferring next child to be:					N
Girls	Boys	Girl	Boy	Either	Total		
A Number of living children: 0							
0	0	26.4	40.7	32.9	100.0	222	
B Number of living children: 1							
0	1	79.3	5.3	15.3	100.0	150	
1	0	5.2	78.1	16.8	100.0	155	
C Number of living children: 2+							
0	2+	87.8	1.1	11.1	100.0	90	
1	1	22.1	33.7	44.2	100.0	95	
2+	0	2.9	87.1	10.0	100.0	70	

NOTES: A pregnancy is not counted as a living child as its sex is unknown. Women with 0 girls and 2 or more boys are grouped in the 2+ boys category and those with 0 boys and 2 or more girls in the 2+ girls category.

**Table 37** Percentages wanting more children by detailed family gender composition: Guyana

Boys	Girls	All women	Non-Indian	Indian
A Number of living children: <sup>a</sup> 1				
0	1	88 (191)	89 (115)	88 (76)
1	0	80 (179)	79 (89)	82 (90)
		p=0.032	p=0.049	p=0.288
B Number of living children: 2				
0	2	62 (87)	64 (36)	61 (51)
1	1	61 (191)	64 (77)	60 (114)
2	0	68 (87)	76 (41)	61 (46)
		p=0.565	p=0.385	p=0.985
C Number of living children: 3				
0	3	64 (33)	56 (16)	71 (17)
1	2	42 (134)	55 (56)	32 (78)
2	1	41 (137)	50 (66)	32 (71)
3	0	53 (49)	61 (18)	48 (31)
		p=0.058	p=0.838	p=0.009
D Number of living children: 4				
0	4	40 (15)	38 (8)	43 (7)
1	3	34 (79)	59 (29)	20 (50)
2	2	36 (127)	45 (49)	31 (78)
3	1	40 (53)	59 (17)	31 (36)
4	0	54 (24)	64 (14)	40 (10)
		p=0.495	p=0.511	p=0.501
E Number of living children: 5				
0	5	71 (7)	80 (5)	50 (2)
1	4	10 (49)	18 (22)	4 (27)
2	3	21 (72)	32 (22)	16 (50)
3	2	9 (75)	19 (26)	4 (49)
4	1	19 (43)	17 (12)	19 (31)
5	0	23 (13)	25 (8)	20 (5)
		p=0.001	p=0.063	p=0.059

<sup>a</sup>Pregnant women are excluded from this table; the p-values refer to the probability that all the percentages are the same.

of daughters, both for all Guyanese women and for two ethnic groups. The table in principle permits us to explore at each family size the proposition that certain combinations of male and female children will cause women to be more or less likely to want additional children, but in practice our interpretation of the data is severely constrained by insufficiencies of sample size, especially among women with four and five children. Nevertheless certain generalizations are possible. First, it is evident that Guyanese women do not unanimously feel constrained to go on having children until they have at least one boy or one girl; on the other hand, the table does seem to reveal a slight tendency at family sizes 3, 4 and perhaps 5 for women with zero sons or daughters to be more likely to want to go on having children than women whose families contain children of both sexes.

A slight preference for boys is seen among women who have one child: those with zero boys are marginally more likely to want additional children than those with zero girls (88 versus 80 per cent), among both Indians and non-Indians. The results for women with two children, on the other hand, point in the opposite direction. A somewhat surprising finding emerges when women with two living children are subdivided by ethnicity, however. It appears that Indian women who have no male child are no more likely to want an additional child than those who have both a son and a daughter, though at the larger family sizes Indian women with either zero girls or zero boys do then conform to expectations by reporting somewhat higher proportions wanting additional children than those with sexually mixed families.

Columns 2 and 3 of table 39 present summary results and compare the proportions of women wanting additional children between one and two sex families, extending observation to family size 6. These more aggregated results show that the proportion wanting additional children is consistently – though not greatly – higher among women with one sex families than among those with children of two sexes. The difference is very slight (4 per cent) among women with two children, but is larger

among those with three, four and five children, ranging between 13 and 25 per cent, and this finding is statistically significant in two out of five comparisons.

Two basic points emerge from this analysis. First, Guyanese women do not universally feel driven to keep on having children until they achieve a son, a daughter, or any particular sexual composition of boys and girls. But secondly, while there is no universally felt need to secure at least one son or one daughter, there is a fairly clear tendency for Guyanese women to be marginally more likely to want to continue childbearing until they achieve at least one child of each sex.

#### *Guyana: Differential fertility by gender composition*

Table 38, also adapted from Cleland and Verrall, examines the effects of gender composition on in union fertility rates 0–5 years before survey, for women classified by gender composition and number of living children exactly 60 months before survey. These rates are for the entire 60 month period and are not censored to refer only to periods during which the gender composition of 60 months before held true.

Table 38 shows that for women who had two children at the start of the period, marital fertility rates are virtually identical between differing family compositions. This could be taken to reflect a widespread desire for at least three children, regardless of gender.

For women with three children at the start of the period, however, there is some hint of substantially higher fertility in families with three girls and zero boys than among any of the other gender compositions, which might be interpreted to reflect the desire for at least one boy.

For women with four children exactly five years prior to interview, there is no sign of any consistent relationship between family composition at the start of the period and subsequent fertility. Women with balanced families and those with four boys had lowest subsequent fertility (143 and 136 per 1000 compared to the overall mean of 162 per 1000), while those with three boys and one girl and those with four girls had highest subsequent fertility (189 and

**Table 38** In union fertility rates per 1000 woman years of exposure averaged for five years preceding survey by number and sex composition of living children exactly 60 months before survey: Guyana

	Number of living children							
	Two		Three		Four		Pooled rate	Woman years
	Rate	Woman years	Rate	Woman years	Rate	Woman years		
All boys	251	(374)	182	(187)	136	(118)	} → 176	(467)
2+ boys, 1 girl	NA	NA	178	(605)	189	(349)		
Balance: B=G	244	(796)	NA	NA	143	(482)		
2+ girls, 1 boy	NA	NA	185	(531)	162	(339)	} → 167	(437)
All girls	249	(433)	230	(187)	184	(98)		
Total	247	(1603)	187	(1510)	162	(1386)		

NOTE: Probability that means are associated with composition = 0.2096. This probability is estimated from deviance of the log likelihood ratio (see Cleland and Verrall (1984) for details).

Source: Cleland and Verrall (1984)

**Table 39** Estimating the increment in number of children desired because of sex preferences: Guyana

Family size i	Proportions wanting more children among women with children:		Significance of difference between (2) and (3)	Incremental proportion wanting more children = (2) - (3)	Proportion of women with children of one sex	Incremental number of children of wanted = (5) × (6)
	Of only one sex	Of both sexes				
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2	0.649 (174)	0.613 (191)	0.467	0.036	0.4767	0.0172
3	0.573 (82)	0.413 (271)	0.010	0.160	0.2323	0.0372
4	0.487 (39)	0.363 (259)	0.136	0.124	0.1309	0.0162
5	0.400 (20)	0.146 (239)	0.003	0.254	0.0772	0.0196
6	0.250 (8)	0.101 (199)	0.179	0.149	0.0386	0.0058
					Total	0.0960

NOTES: The total of column 7 excludes the entry of 0.0058 for family size 6, as the denominator for one sex families is less than 15. Pregnant women are excluded from this table. The fractions in column 6 are based on the denominators of columns 2 and 3 (eg 0.4767 = 174/(174+191)). The significance figures in column 4 are prob values based on F-ratios.

184 per 1000). The woman years of exposure on which these results are based are hazardously low. If we pool the imbalanced groups, however, it appears that those with initially imbalanced families had somewhat higher subsequent fertility (172 births per 1000 based on 904 woman years) than those with initially balanced families of two girls and two boys (143 births per 1000 based on 482 woman years).

The chief conclusion to be drawn from this table is that the only clear difference is the higher fertility among imbalanced families at family size 4.

#### *Guyana: Estimating the incremental number of children desired*

One critical issue remains unanswered. From a demographic point of view, perhaps the most relevant question about gender preferences is not simply whether these push up fertility but, 'How much does the desire for children of a particular sex push up the number of children that women will ultimately desire?'. The method for quantifying this effect is described in table 39.

As can be seen from table 39, any upward push on preferred family size exerted by higher desire for children among women with one sex families is considerably attenuated with every unit increase in actual family size, since the percentage of women with sons only or daughters only is halved with each additional child, declining from roughly 50 per cent of women with two children, to 25 per cent of those with three, down to 0.2 per cent among women with ten children.

It thus becomes apparent that overall desired family size will be raised substantially only if (1) women with children of one sex have very much higher proportions wanting additional children, especially at the lower family sizes, or (2) child mortality is high enough to very frequently remove children of a desired sex.

These results strongly suggest that in the case of Guyana, preferences for having at least one child of each sex have at most a negligible effect in actually raising the overall number of children desired, somewhere in the region of 1/10 of a child.

#### **Jamaica: Preferences for children of a given sex**

##### *Jamaica: Overt verbal preferences*

As in Guyana and Trinidad and Tobago, the Jamaica Fertility Survey asked respondents who said they wanted additional children whether they would prefer the next child to be a son or a daughter. Table 40 allows us to identify the operation of two tendencies.

First and most important, women who have children of only one sex overwhelmingly prefer the next child to be of the opposite sex. This is apparent both among women with just one child and among those with two or more living children who have either no sons or no daughters. From this we can see that Jamaican respondents clearly prefer a sexually mixed family to having all boys or all girls, though

**Table 40** Preferred sex of next child among women who want more children by number of living children and gender composition: Jamaica

Number of living:	Percentage preferring next child to be:					
	Girls	Boys	Girl	Boy	Either	Total N
A number of living children: 0						
0	0		50.7	26.6	22.7	100.0 207
B Number of living children: 1						
0	1		88.7	3.5	7.8	100.0 115
1	0		15.7	72.2	12.0	100.0 108
C Number of living children: 2+						
0	2+		93.2	3.4	3.4	100.0 59
1	1		60.0	21.3	18.7	100.0 75
2+	0		5.3	78.9	15.8	100.0 38

NOTES: A pregnancy is not counted as a living child as its sex is unknown. Women with 0 girls and 2 or more boys are grouped in the 2+ boys category and those with 0 boys and 2 or more girls in the 2+ girls category.

there is indeed a small minority which would prefer all of one sex, or are indifferent.

A second and quite pronounced tendency that can be seen in table 40 is that when number of sons equals number of daughters (ie women with zero children or one son and one daughter), a majority of women want the next child to be female; indeed, half the women with zero children want the first child to be a girl while only a quarter want a boy, and the same preference for daughters is seen among women with one son and one daughter, where 60 per cent want their third child to be female and only 20 per cent want it to be male. In this latter respect, Jamaican women clearly differ from those in Guyana and Trinidad and Tobago, who were more apt to prefer the first child to be male, and, among respondents who had one son and one daughter at family size 2, were evenly divided between wanting the next to be male or female in the case of Trinidad and Tobago, and tilted towards boys in the case of Guyana. But on the other hand, respondents in all three countries were the same in usually wanting to avoid having children of only one sex.

*Jamaica: Preferences inferred from proportions wanting more children*

We have seen from table 40 that Jamaican respondents have overt preferences for sexually mixed families, though they tend to prefer the next child to be female in cases where number of sons equals number of daughters. But when proportions wanting more children are classified by number of sons and number of daughters in table 41, we see that at family sizes 1,2,3,4 and 5 these overt preferences do not translate into any clear tendency for respondents to be more likely to want additional children if they lack daughters or lack sons, once number of living children is held constant.

*Jamaica: Differential fertility by gender composition*

The marital fertility rates (ie within union rates) for 0-5 years before survey, classified by family size and gender composition exactly 60 months prior to interview, are shown in table 42. These suggest several interpretations.

**Table 41** Percentages wanting more children by detailed family gender composition: Jamaica

Boys	Girls	All women
A Number of living children: <sup>a</sup> 1		
0	1	78 (148)
1	0	81 (151)
p=0.422		
B Number of living children: 2		
0	2	64 (55)
1	1	63 (145)
2	0	64 (78)
p=0.979		
C Number of living children: 3		
0	3	46 (24)
1	2	48 (81)
2	1	51 (103)
3	0	48 (21)
p=0.947		
D Number of living children: 4		
0	4	14 (7)
1	3	39 (31)
2	2	36 (59)
3	1	44 (48)
4	0	42 (12)
p=0.642		
E Number of living children: 5		
0	5	50 (2)
1	4	24 (25)
2	3	29 (45)
3	2	16 (44)
4	1	17 (18)
5	0	33 (6)
p=0.595		

<sup>a</sup> Pregnant women are excluded from this table; the p-values refer to the probability that all the percentages are the same.

**Table 42** In union fertility rates per 1000 woman years of exposure averaged for five years preceding survey by number and sex composition of living children exactly 60 months before survey: Jamaica

	Number of living children						Pooled rate	Woman years
	Two		Three		Four			
	Rate	Woman years	Rate	Woman years	Rate	Woman years		
All boys	180	(500)	232	(138)	126	(103)	} → 127	(354)
2+ boys, 1 girl	NA	NA	173	(571)	127	(251)		
Balance: B=G	192	(749)	NA	NA	182	(428)		
2+ girls, 1 boy	NA	NA	191	(413)	231	(251)	} → 214	(290)
All girls	162	(413)	124	(105)	103	(39)		
Total	181	(1662)	182	(1227)	172	(1072)		

NOTE: Probability that means are associated with composition = 0.9412; probability that effects are asymmetrical = 0.9717. These probabilities are estimated from deviance of the log likelihood ratio (see Cleland and Verrall (1984) for details).

Source: Cleland and Verrall (1984)

**Table 43** Estimating the increment in number of children desired because of sex preferences: Jamaica

Family size i	Proportions wanting more children among women with children:		Significance of difference between (2) and (3)	Incremental proportion wanting more children = (2) - (3)	Proportion of women with children of one sex	Incremental number of children of wanted = (5) × (6) (7)
	Of only one sex (2)	Of both sexes (3)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2	0.639 (133)	0.628 (145)	0.843	0.011	0.4784	0.0053
3	0.467 (45)	0.500 (184)	0.690	-0.033	0.1965	-0.0064
4	0.316 (19)	0.391 (138)	0.528	-0.075	0.1210	-0.0091
5	0.375 (8)	0.220 (132)	0.311	0.155	0.0571	0.0089
					Total	-0.0013

NOTES: Pregnant women are excluded from this table. The fractions in column 6 are based on the denominators of columns 2 and 3 (eg 0.4784 = 133/(133+145)).

Fertility is substantially lower among women who had only girls at family sizes 2, 3 and 4, which lends strong support to the notion of a preference for girls, though denominators at size 3 and especially at size 4 are inconveniently small. The statistical tests used by Cleland and Verrall indicated a high likelihood that the observed pattern did not arise by chance. But when the table is rearranged, pooling row 1 with 2 and row 4 with 5, the implications change substantially, indicating a preference for boys rather than girls at family size 4, with little difference in rates at family sizes 2 and 3. A peculiarity of these results is that fertility is so high in the balanced case at family size 2.

Composition 5 years before	Family size 5 years before		
	2	3	4
Boys > girls	180 (500)	167 (709)	127 (354)
Exact balance	192 (749)	—	182 (428)
Girls > boys	162 (413)	177 (518)	214 (290)

NOTE: Bracketed figures are person year denominators.

*Jamaica: Estimating the incremental number of children desired*

Table 43 repeats the estimation of incremental children desired because of gender imbalance that was explained in table 40 for Guyana. In the Jamaican case this procedure estimates that gender imbalance lowers the total number of children wanted by -0.0013, which is effectively the same as zero.

We now sum up results for Jamaica. In table 40, women with balanced families showed a bias towards wanting the next child to be female, but those with one sex families predominantly wanted it to be of the opposite sex. In table 41, the percentages wanting further children by detailed family composition did not reveal any preference for balance, or for any particular sex. Table 42 indicated significant differences in favour of girl preferences when considered in disaggregated form, but pooling rows 1 + 2 and 4 + 5 produced different implications. These results are exceptionally contradictory and ambiguous. Given the

absence of consistent evidence of a preference for balance, it is questionable whether the estimation of incremental number of children desired presented above is appropriate or meaningful.

It is thus apparent that while Jamaican respondents did express a verbal preference for girls, the results are otherwise ambiguous. At the level of cautious scientific assessment, our judgement is one of 'No verdict, more evidence required'. At the level of subjective speculation, we suspect that gender preferences have little or no importance in raising the number of children desired in Jamaica.

**Trinidad and Tobago: Preferences for children of a given sex**

*Trinidad and Tobago: Overt verbal preferences*

As in the other two surveys considered, the survey of Trinidad and Tobago asked women who wanted more children whether they would prefer the next child to be female or male. Table 44 indicates that, as in Guyana and Jamaica, the great majority of respondents want to avoid having children of only one sex (apparent among those with children of one sex).

The figures for respondents with equal numbers of sons and daughters do not indicate any general norm favouring children of either sex. Childless women exhibit a slight bias towards wanting the first child to be a son (44 per cent), though 27 per cent would prefer the first to be a girl and 29 per cent are essentially indifferent. But the figures for women with one girl and one boy strongly argue against the notion that there is even a marginal bias in favour of wanting male children, since the number wanting the third child to be of a particular sex are evenly divided between those wanting a male (28 per cent) and those wanting a female (26 per cent), while 46 per cent said they would be happy with a child of either sex. What stands out clearly from the figures in table 44 is that respondents would prefer a family containing a child of each sex. But the data do not establish whether this evident desire for sexually mixed families is powerful enough to propel women into wanting additional children. For this we turn to the data on proportions wanting more children.



**Table 44** Preferred sex of next child among women who want more children by number of living children: Trinidad and Tobago

Number of living:		Percentage preferring next child to be:					N
Girls	Boys	Girl	Boy	Either	Total		
A Number of living children: 0							
0	0	27.4	43.7	28.9	100.0	492	
B Number of living children: 1							
0	1	78.5	7.7	13.8	100.0	195	
1	0	6.1	76.5	17.3	100.0	179	
C Number of living children: 2+							
0	2+	88.4	7.0	4.7	100.0	86	
1	1	28.2	26.1	45.8	100.0	142	
2+	0	2.3	90.9	6.8	100.0	88	

NOTES: A pregnancy is not counted as a living child as its sex is unknown. Women with 0 girls and 2 or more boys are grouped in the 2+ boys category and those with 0 boys and 2 or more girls in the 2+ girls category.

*Trinidad and Tobago: Preferences inferred from proportions wanting more children*

Detailed data on proportions wanting more children classified by number of sons and daughters are presented in table 45, both for all women and subdivided by ethnicity.

The data for all women are fairly consistent with expectations. Women who have either all sons or all daughters typically have higher proportions wanting additional children than women who have children of both sexes, and this pattern is maintained at all family sizes between 2 and 5. This gratifyingly simple picture disappears, however, when we subdivide women according to ethnicity. Against expectations, respondents of Indian origin are no more likely to want additional children when they have zero sons. Indeed, at family size 2, the proportion of Indian women wanting additional children is lowest among women who have no sons (49 per cent), slightly higher among women with one son and one daughter, and highest of all among women with no daughters (84 per cent), and this difference is statistically significant at the 0.001 level. At family sizes 3 and higher, the denominators for respondents with zero boys or zero girls become treacherously small, but there is nothing in the data to support the notion that the marked desire for sons evident in India has survived the years of assimilation experienced by Trinidad-Tobago citizens of Indian descent, which provides another indication of the degree to which this group has 'Creolized' and introjected new norms and values in a non-traditional setting.

Strangely enough, there is a tentative indication in table 45 that it is non-Indians who want additional children when there are no sons, though this is confined to family size 2, as denominators at family sizes higher than 2 are too small to draw any conclusions from.

**Table 45** Percentages wanting more children by detailed family gender composition: Trinidad and Tobago

Boys	Girls	All women	Non-Indian	Indian
A Number of living children: <sup>a</sup> 1				
0	1	84 (217)	85 (146)	82 (72)
1	0	87 (218)	87 (143)	88 (75)
		p = 0.279	p = 0.557	p = 0.301
B Number of living children: 2				
0	2	66 (103)	77 (62)	49 (42)
1	1	60 (279)	66 (161)	53 (118)
2	0	64 (108)	52 (68)	84 (40)
		p = 0.611	p = 0.010	p = 0.001
C Number of living children: 3				
0	3	49 (30)	47 (16)	52 (14)
1	2	46 (112)	50 (59)	42 (53)
2	1	33 (133)	36 (65)	30 (68)
3	0	47 (47)	51 (29)	40 (18)
		p = 0.086	p = 0.344	p = 0.344
D Number of living children: 4				
0	4	51 (11)	53 (7)	47 (4)
1	3	24 (75)	33 (40)	14 (36)
2	2	20 (114)	23 (56)	18 (58)
3	1	22 (48)	30 (30)	10 (18)
4	0	40 (23)	26 (12)	57 (11)
		p = 0.074	p = 0.503	p = 0.007
E Number of living children: 5				
0	5	28 (9)	47 (4)	16 (6)
1	4	26 (32)	28 (19)	22 (13)
2	3	22 (66)	24 (36)	18 (30)
3	2	21 (52)	22 (31)	19 (21)
4	1	16 (33)	27 (16)	7 (18)
5	0	23 (9)	47 (4)	0 (4)
		p = 0.951	p = 0.850	p = 0.786

<sup>a</sup>Pregnant women are excluded from this table; the p-values refer to the probability that all the percentages are the same.

*Trinidad and Tobago: Differential fertility by gender composition*

Marital fertility rates for 0-5 years before survey are in table 46 classified by gender composition and family size exactly 60 months before interview. The picture that emerges is far from simple. At family size 2, women with one boy and one girl had noticeably lower fertility (120 per 1000) than those with two boys (156 per 1000) or two girls (187 per 1000). This suggests a preference for balance, and, lacking balance, for male children.

At family size 3, the picture of son preference persists, with substantially lower rates among women with three boys or with two boys and one girl than among women with three girls or two girls and one boy.

At family size 4, women with all girls had a somewhat higher rate than all others (114 per 1000 versus a group average of 84 per 1000), but this is based on a hazardously

small woman year denominator. If instead one relies on the pooled rates shown as adjuncts to the final column, there seems to be little difference in fertility rates by gender composition at family size 4, which conflicts sharply with the results in table 45; these suggest a strong U-shaped relationship at family size 4, with much higher proportions wanting additional children in one sex families, which are seen to be statistically significant in column 4 of table 47. From this pattern one might speculate that there is a rather complex structure in which couples impose an overall upper limit on the number of children they want which in practice is frequently at family size 5, at which point sex composition has little effect on whether more are desired (ie there is an upper limit size constraint in operation). But under this typical upper limit of 5, fertility is minimized when there is a balance between the sexes, maximized when all the children are female and intermediate when all are boys.

*Trinidad and Tobago: Estimating the incremental number of children desired*

Table 47 repeats the estimate of incremental number of children desired and compares percentages wanting more between women with one sex families and women with two

sex families. Columns 2 and 3 show consistently higher proportions wanting additional children among women with children of only one sex, at all family sizes, though only the difference at family size 4 is statistically significant. Columns 6 and 7 repeat the calculation of 'incremental number of children wanted' because of preference for gender balance, which yields an estimate that the overall number of children wanted in Trinidad and Tobago is raised by 0.0724 of a child, based on the results for parities 2-5, implying an upper limit of about 1/10 of a child if we assume the incremental proportions wanting more children are 0.5 at parities 6-10 (see section on Guyana for explanation).

It is thus apparent both that women typically prefer to have sexually mixed families and that this preference has at best a marginal impact in increasing woman's willingness to continue childbearing and a negligible one in pushing up the overall mean number of children desired.

3.4 REGIONAL DIFFERENCES IN PREFERENCES: JAMAICA

At a seminar where a draft of the present report was discussed, interest in securing regional figures was ex-

**Table 46** In union fertility rates per 1000 woman years of exposure averaged for five years preceding survey by number and sex composition of living children exactly 60 months before survey: Trinidad and Tobago

Number of living children	Two		Three		Four		Pooled rate	Woman years
	Rate	Woman years	Rate	Woman years	Rate	Woman years		
All boys	156	(477)	109	(196)	80	(99)	→ 83	(373)
2+ boys, 1 girl	NA	NA	101	(573)	85	(274)		
Balance: B = G	120	(1100)	NA	NA	87	(559)	→ 81	(428)
2+ girls, 1 boy	NA	NA	138	(510)	73	(341)		
All girls	187	(424)	139	(152)	114	(87)		
Total	143	(2001)	119	(1431)	84	(1360)		

NOTE: Probability that rates are associated with composition = 0.9107; probability that rates are asymmetrical = 0.6701. These probabilities are estimated from deviance of the log likelihood ratio (see Cleland and Verrall (1984) for details).  
Source: Cleland and Verrall (1984)

**Table 47** Estimating the increment in number of children desired because of sex preferences: Trinidad and Tobago

Family size i	Proportions wanting more children among women with children:		Significance of difference between (2) and (3)	Incremental proportion wanting more children = (2) - (3)	Proportion of women with children of one sex	Incremental number of children of wanted = (5) × (6)
	Of only one sex (2)	Of both sexes (3)				
2	0.647 (212)	0.604 (279)	0.341	0.043	0.4318	0.0186
3	0.480 (77)	0.386 (246)	0.154	0.094	0.2384	0.0224
4	0.437 (34)	0.219 (237)	0.005	0.218	0.1255	0.0274
5	0.257 (18)	0.212 (184)	0.669	0.045	0.0891	0.0040
6	1.000 (1)	0.149 (135)	0.012	0.851	0.0074	0.0063
					Total	0.0724

NOTES: The total of column 7 excludes the entry of 0.0063 for family size 6, as the denominator for one sex families is less than 15. Pregnant women are excluded from this table. The fractions in column 6 are based on the denominators of columns 2 and 3 (eg 0.4328 = 212/(212+279) at family size 2).

Table 48 Some indices of reproductive motivation and reproductive behaviour by region and parish: Jamaica (indices in columns 1-7 standardized for demographic composition: see footnote d)

DESIRED FAMILY SIZE	PER CENT WANTING MORE CHILDREN in union		PER CENT UNWANTED BIRTH	CURRENT USE OF CONTRACEPTION AMONG WOMEN WHO		COMPLETED FERTILITY (i.e. number of children ever born to women 40-49 b)		TOTAL FERTILITY RATE 0-24 YEARS BEFORE SURVEY a, f		PERSON YEARS ON WHICH THE FERT'S ARE BASED:		PROPORTION OF BABIES BORN IN YEAR BEFORE SURVEY THAT WERE "UNWANTED":				
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
ALL WOMEN	3.89	3.18	48.9	21.7	45.4	36.4	54.0	5.96 (465)	4.46	2.41	3574.	319.	41.4	353	1988	
1988	1988	466	1866	1931	1792	879	631	465	1787	1787	1787	NA	353	353	1988	
HEALTH REGION																
South East	3.73	3.30	44.3	16.1	41.4	45.4	64.4	5.11 (132)	3.88	2.19	1252.	92.	40.2	122	692	
North East	4.01	3.37	49.7	24.0	47.8	26.7	50.8	5.76 (75)	5.63	3.41	480.	44.	40.4	57	273	
West	3.97	2.99	48.4	24.2	50.9	29.3	53.4	6.22 (109)	4.56	2.31	746.	73.	44.6	65	415	
South	3.97	3.06	54.3	25.0	44.6	33.5	42.6	6.61 (149)	4.51	2.25	1096.	104.	41.3	109	608	
PROB VALUES	0.011	0.136	0.000	0.000	0.017	0.000	0.000	0.005								0.945
PARISH OF RESIDENCE																
Kingston	3.58	2.91	43.4	13.4	37.9	48.8	53.4	4.29	3.54	2.17	150.	5.	35.7	14	87	
St. Andrew	3.72	3.34	44.2	16.7	42.2	46.1	66.1	4.93 (108)	3.91	2.15	1028.	81.	40.0	105	564	
St. Thomas	4.12	4.12	47.8	14.1	39.0	27.9	67.4	8.30 (10)	3.90	2.53	74.	7.	66.7	3	41	
Portland	3.55	2.84	46.4	18.0	49.2	49.3	64.7	5.38 (21)	4.12	2.18	110.	11.	41.7	12	64	
St. Mary	3.96	3.35	47.3	32.6	54.7	33.1	53.5	5.86 (22)	6.04	3.22	178.	14.	39.1	23	104	
St. Ann	4.35	3.75	54.3	19.5	40.2	6.2	40.3	5.94 (32)	6.56	4.85	192.	11.	40.9	22	105	
Trelawny	3.90	3.05	48.5	15.4	49.3	36.7	50.3	6.00 (11)	2.32	1.36	88.	0.	60.0	5	44	
St. James	3.79	2.88	46.8	25.0	49.9	35.0	51.8	6.35 (20)	5.50	2.47	216.	14.	47.8	23	121	
Hanover	3.62	3.45	49.8	22.7	58.3	43.3	69.9	7.30 (10)	2.66	1.50	72.	7.	25.0	4	39	
Westmoreland	4.15	3.26	50.6	21.0	47.9	15.9	58.2	5.16 (38)	5.45	3.58	168.	19.	33.3	18	94	
St. Elizabeth	4.11	2.84	47.8	30.4	52.6	25.1	45.4	7.20 (30)	4.62	1.90	202.	15.	53.3	15	117	
Manchester	4.29	3.05	55.9	26.0	44.7	34.6	51.4	7.22 (27)	4.91	2.67	240.	23.	26.1	23	135	
Clarendon	4.29	3.05	56.6	26.0	40.2	29.2	33.7	6.85 (60)	5.57	2.85	338.	35.	47.1	34	183	
St. Catherine	3.69	3.14	52.2	23.8	47.4	35.0	43.4	6.11 (62)	3.68	1.64	518.	43.	44.2	52	290	
PROB VALUES	0.000	0.186	0.044	0.002	0.101	0.000	0.003	0.005								0.925

a For definition of total fertility rates shown here see chapter 4.2. b "Completed fertility" here refers to average number of children ever born to currently in union women aged 40-49 at time of interview, confined to those women for whom all socioeconomic background data were available. c Number of currently in union women for whom all preference data and socioeconomic data are available. d Data in columns 1-3 and 6-7 are "standardized" via regression for population composition by number of living children and age, using number living, number living squared, single years of age, single years of age squared as control variables. Data in columns 4-5 are standardized via regression for (1) age at first union (AGFU), (2) AGFU squared, (3) months elapsed since first union began (MESFUB), and (4) MESFUB squared; these controls are intended to adjust for the fact that women with longer periods in union are more likely to have had unwanted births. e The four health regions were each comprised of several parishes, as follows: (1) South East (Kingston, St. Andrew, St. Thomas, (2) North East (Portland, St. Mary, St. Ann); (3) West (Trelawny, St. James, Hanover, Westmoreland, St. Elizabeth); (4) South (Manchester, Clarendon, St. Catherine). f Calculation of F-ratios for the total fertility rates has been omitted; the person year denominators in column 12 offer some indication as to the sort of confidence to be attached to the subgroup-specific fertility rates.

pressed by Jamaican Government representatives. With this governmental interest in mind, and also because regional variation is intrinsically interesting, table 48 presents a variety of indicators, standardized for demographic composition as described in the table footnote, for the four health regions into which Jamaica has been divided (also described in the footnote) and for the parishes of Jamaica. It is emphasized that the denominator sizes at the parish level are, with a few exceptions, dangerously small, and that inferences should be made with caution. As can be seen from column 15, which presents the number of currently in union women for whom complete data are available, and also from the second row of the table, which presents the total number of cases for each indicator, denominators vary appreciably both by geographic area and also by the particular indicator in question.

At the health region level, the denominators are closer to being adequate, so most of the commentary on the data will be restricted to health regions and to parishes where the denominator size is relatively large.

While columns 1 and 2 suggest relatively little differentiation by desired family size between health regions (3/10 of a child in column 1 and 4/10 of a child in column 2), the results in column 10 for wanted total fertility rates, definition 1, indicate a substantially larger difference in desired number of births, with the North East health region having a wanted total fertility rate of 3.4 births compared to rates of 2.2 and 2.3 births in the other regions, or a rather sizeable difference of 1.2 births.

The likelihood of having an unwanted birth in the three years before the survey is seen to be significantly lower in the South East region (see column 4), where 16 per cent of women had an unwanted birth versus a likelihood of nearly 25 per cent in the other three health regions.

There is substantial variation by region in use of contraception among women who want more children (see column 6), with 45 per cent using in the South East region versus 27-34 per cent in the other three. From column 7 it is apparent there are three distinct levels of contraceptive use among women who wish to stop having children, varying from 64 per cent in the South East to 50-53 per cent in the North East and the West, the lowest use being in the South region at 43 per cent.

The contrast between columns 9 and 10 indicates a wide gap between the actual and wanted total fertility rates of

all four of the health regions. In the South East the actual total fertility rate exceeds the wanted (definition 1) rate by 1.69 births; in the other three regions the excess of actual over wanted births is greater, 2.22 in the North East, 2.25 in the West and 2.26 in the South.

The elimination of unwanted fertility would clearly bring about a sharp reduction of actual fertility in all four health regions. If we assess family size desires on the basis of the wanted total fertility rate data in column 11, there appears to be a major problem in only one of the regions, the North East, but if we assess the data on the basis of desired family size as measured in columns 1 or 2, all four regions appear to share desired family size of three children or more.

The contrast between completed fertility in column 8 and the total fertility rate in column 9 provides estimates of fertility change in the health regions. Compared with an island-wide average decline of 1.50 births, the decline was distinctly above average in the South health region (2.1 births), somewhat less in the West region (1.7 births) and somewhat below average in the South East (1.2 births). One region, however, the North East, seems to have had very little decline, from 5.76 to 5.63. The relatively large declines in the South and West regions, and the relatively smaller absolute decline in the South East, are consistent with the observation that some of the most substantial decline has occurred in groups where fertility had been highest, but the lack of fertility decline in the North East region is a possible item for concern.

At the parish level, fertility rate denominators are grossly inadequate, except perhaps for St Andrew and St Catherine, so that not too much credence should be attached to most of the parish results. There is a tentative indication that St Mary, St Ann and Westmoreland have particularly high wanted fertility rates, while Westmoreland and St Ann have particularly low proportions using contraception among women who want additional children. The wanted total fertility rate in St Catherine, on the other hand, is especially low at 1.71, with proportions using contraception that are again comparatively low, though the actual total fertility rate is also comparatively low (3.85) and the figures are based on a relatively large set of denominators. The unwanted fertility indicator in column 4 suggests a relatively high likelihood of unwanted births for St Mary and for Westmoreland.

## 4 Success and Failure in Limiting Fertility: National-Level Results

Both governments wishing to reduce fertility and those wishing to increase or maintain it may find information on unwanted fertility useful. In cases where no decline is wanted or where an increase is sought, information on unwanted fertility may help to identify groups in need of economic subsidies in order to afford childbearing or in need of housing or other requisites for child rearing; at the very least, such information provides an indication as to whether a gradual fertility decline in certain groups currently of high fertility can be expected, and may identify a need for further research.

Where fertility reduction is desired, on the other hand, the information may be useful in identifying groups especially in need of contraceptive supplies, or if additional analysis reveals that they are contracepting but with frequent failures, this may suggest greater emphasis on educating for more effective use, perhaps even employing such media as radio to subtly remind these groups to take the pill or to maintain adequate supplies of whatever method they are using. In an earlier section (3.2) we considered both wanted total fertility rates and the size of the gap between the wanted and actual TFR. This chapter explores the question of success and failure in achieving fertility preferences in detail, however. In particular, it will consider variation by age and family size in likelihood of ever having an unwanted birth, and of having had a recent unwanted birth. It is argued that the question on whether the last birth was wanted or not can fruitfully be analysed in a number of different ways. The choices made in the present document are by no means the only ones possible, but are intended to point out ways in which analysis can be sharpened through employing alternative definitions. A subsequent section looks at the relationship between contraception and preferences, as a further test of motivation and potential success in achieving preferences. Finally, we present some estimates of the crude birth rate that would occur if existing fertility preferences were achieved.

### 4.1 THE INCIDENCE OF UNWANTED BIRTHS

#### Definitions – three measures of unwanted fertility

For Guyana and Jamaica, the indicators are based on the desire for last birth or current pregnancy question, asked of women who said they wanted no more children or were uncertain, which ran, 'thinking back to the time before you became pregnant with your (last) child, had you wanted to have any more children?'. For pregnant women the question was put a little differently so as to refer to the current pregnancy: 'Before you became pregnant this time,

did you want to have any (more) children?'. It was asked not only of self-reported fecund women, however, but also of self-reported infecund women and women who had previously been in union, so table denominators will differ from those reported in other chapters.

The three indicators used for Guyana and Jamaica are:

**1** Proportion ever having an unwanted birth or current pregnancy among currently in union women with one or more births; note that the questionnaire asked only about the wantedness of the last birth, so that some women could have had several unwanted births.

**2** Indicator 1 is unclearly defined with respect to time. A woman might have had her last unwanted birth ten years prior to survey, or have a current unwanted pregnancy. Measure 2 is intended to clarify the time referent and does so by measuring the proportion of all women with an unwanted last birth (or current unwanted pregnancy) in the interval 0–3 years prior to survey; it is also intended to let us look at differentials in recent unwanted childbearing. The denominator is the last birth of all women who have had a birth in the last three years and the current pregnancy of all who are currently pregnant.

**3** The third indicator is the proportion of women with unwanted births during the 12 months preceding survey. The denominator counts the number of women with births in the 12 months prior to interview and the numerator counts the number of these births that were unwanted. This comes close to measuring the proportion of births that are unwanted, since few women had more than one birth in the 12 month period preceding interview. The main drawback to this measure is that it relies on the relatively small subgroup with births in the past year, resulting in a much smaller sample size than measures 1 and 2. Because of the interest in studying socio-economic variation, the measure is restricted to in union women measured on all the socio-economic characteristics.

For Trinidad and Tobago, the indicators are adapted to the fact that only pregnant women and contraceptive never users who wanted no more children or were uncertain were asked whether they wanted the last birth or current pregnancy. Because of this, the wantedness of last birth among women who were not asked directly is estimated by contrasting actual number of living children with desired family size. In theory this might sound like a perfectly good estimation procedure but, as we shall see, it probably underestimates the level of unwanted childbearing.

Strictly speaking, indicators 1 and 2 refer to whether the last birth was wanted (if non-pregnant) or the current pregnancy (if pregnant). To ease discussion, however, we will speak interchangeably of 'unwanted births' and 'unwanted pregnancies'.

### Guyana: Incidence of unwanted fertility

The variation by age and family size in the percentage of Guyanese women who ever had unwanted births is shown in table 49. The unadjusted percentages in column 1 confirm that the proportion ever having unwanted births should rise both with age and with parity; it rises from 23 per cent at age 15–19 to 65 per cent at age 35–39, then reaches a plateau. The very high proportion for 15–19 year olds may reflect a timing problem rather than the birth itself being unwanted. Column 1 indicates an even stronger relationship with number of living children, from 7 per cent with unwanted births at family size 1 to 82 per cent at family size 9.

The adjusted results (column 2) reveal that once parity is controlled for, the percentage with unwanted births varies little by age, except that 15–19 year olds are especially likely to have had an unwanted pregnancy or birth. Controlling for age, however, has little effect on the variation by parity. This indicates that parity and not age is the dominant factor.

Column 4 of table 49 shows the likelihood of unwanted birth or pregnancy in the 36 months preceding interview. The figures by age reveal surprisingly little variation in likelihood between ages 15 and 39, between 22 and 29 per cent. They are surprising in view of the fact that older women have much higher proportions wishing to stop childbearing, and hence much greater risk of having unwanted births, and from this we can infer that they are probably contracepting more effectively than their younger counterparts.

The results in column 4 by parity indicate that likelihood of unwanted births in the three years prior to survey is erratically related to parity, staying virtually constant at 20 per cent between parities 2 and 4, rising a little at parities 5 and 6, falling at parity 7, then rising again at parity 8. One suggestion that does come across from these figures is that women with larger families, selected for higher fecundity and lower effectiveness in avoiding unwanted births, are somewhat more likely to have unwanted births.

A similar pattern will be seen for Jamaica; this is important in judging data quality, since it suggests there is nothing unusual about the data in either case.

### Jamaica: Incidence of unwanted fertility

For Jamaican women, the unadjusted likelihood of ever having had unwanted fertility rises substantially with age (table 50, column 1), from 23 per cent at age 15–19 to 67 per cent at 45–49.

But column 2 shows that once parity is controlled for, the likelihood no longer rises with age; instead, the pattern is similar to that for Guyana. The adjusted proportion for teenagers should perhaps be ignored, given its dependency on a selected, small minority who have two or more children. However, other age groups have a likelihood that does not rise systematically with advancing age and fluctuates erratically between 41 and 49 per cent. From this it is plain that likelihood of ever having had an unwanted birth is basically an effect of family size rather than age, and that once family size is controlled for, age is relatively unimportant.

**Table 49** Percentages with unwanted last birth or current pregnancy by age and parity: Guyana

Age	% with unwanted birth/pregnancy			Recent unwanted fertility (0–36 months before interview)	
	Un-adjusted % (1)	% adj. for parity (2)	N (3)	% (4)	N (5)
15–19	23	57	220	22	230
20–24	27	46	537	24	570
25–29	36	41	571	23	611
30–34	57	46	473	29	487
35–39	65	50	415	23	424
40–44	64	48	321	11	345
45–49	62	47	288	2	300
15–49	47	47	2825	21	2967
F-ratio	54.5	4.2		18.9	
Prob	0.000	0.000		0.000	
Parity <sup>a</sup>	Un-adjusted % (1)	% adj. for age (2)	N (3)	% (4)	N (5)
0 <sup>b</sup>	6	6	32	0	170
1	7	5	467	5	468
2	27	27	453	19	454
3	38	40	413	23	413
4	52	53	350	22	350
5	74	75	300	29	301
6	69	69	251	28	251
7	71	70	184	26	184
8	79	78	141	31	141
9+	82	80	234	35	235
0–9+	47	47	2825	21	2967 <sup>c</sup>
F-ratio	115.8	74.5		21.0	
Prob	0.000	0.000		0.000	

<sup>a</sup>Parity equals number of living children, counting a pregnancy as a living child.

<sup>b</sup>These women had 1+ births but no living children.

<sup>c</sup>N for this column exceeds N for column 2 because all in union women without a birth 0–3 years before survey are counted as not having had an unwanted birth in the period.

The likelihood of unwanted fertility in the 0–3 years before survey has a somewhat different pattern by age (see column 4). Between ages 15 and 39 there is remarkably little variation, the likelihood rising from 21 per cent at age 15–19 to 30 per cent at age 30–34 then falling to 25 per cent at age 35–39; it then falls sharply with increasing age.

The proportion ever having an unwanted birth by parity is shown in the lower panel of table 50. The unadjusted proportion rises from 11 per cent among women with one living child to 88 per cent among those with nine or more living children, and the proportions adjusted for age are very little different. The figure of 11 per cent who did not

want the last birth among women with just one living child is surprisingly high, however. A closer look at the data reveals that this is systematically linked with union status:

Percentage ever having unwanted last birth by union status and age:  
Jamaica

Current status union	Current age		Total	N
	15-19	20-49		
Married	0	3	3	100
Common law	10	12	12	111
Visiting	25	8	16	132
Total	24	9	11	343

The very high proportions at age 15-19, and only for the less stable unions, further confirm that the unwanted measure should be interpreted for this age group as indicating timing mistakes rather than as a measure of excess overall quantum.

The likelihood of unwanted fertility in the 0-36 months before survey increases quite sharply with parity (column 4, table 50). This is only to be expected, as higher parity women are more apt not to want additional children, and hence have a higher chance of undesired fertility. When attention is confined to women who want no more children, those with large families are still seen to have somewhat higher likelihood of unwanted fertility in the 36 months prior to survey, especially women with four or more children:

	0	1	2	3	4	5	6	7	8	9+	0-9+
%	0	25	31	32	43	44	36	33	45	50	38
N	6	77	124	136	117	117	97	72	77	127	950
Prob value 0.001											

Of course, we cannot know their preferences three years before. But one would have expected higher parity women to take greater precautions against unwanted fertility, and it is still remarkable that there was such massive failure to control fertility among them. Given the governmental target of lowering fertility, the possibility that this pattern observed for the 1973-75 period may have persisted into the future is an aspect of behaviour that might well be usefully looked at in the analysis of future surveys.

### Trinidad and Tobago: Incidence of unwanted fertility

Three indicators of unwanted fertility were defined above, (1) likelihood of ever having an unwanted birth, (2) likelihood of an unwanted birth in the three years prior to survey, (3) of babies born 0-12 months before survey, the proportion that were unwanted. Because Trinidad and Tobago respondents were not asked whether they wanted the last birth (except for pregnant women and contraceptive never users), it is necessary to measure these three indicators somewhat differently than in Guyana and

**Table 50** Percentages with unwanted last birth or current pregnancy by age and parity: Jamaica

Age	Ever had unwanted birth/pregnancy			Recent unwanted birth/pregnancy (0-36 months before survey)	
	Un-adjusted	Adjusted for parity	N	%	N
	(1)	(2)	(3)	(4)	(5)
15-19	23	52	143	21	158
20-24	30	47	353	25	389
25-29	34	41	324	24	349
30-34	52	45	276	30	289
35-39	61	48	272	25	285
40-44	57	42	236	16	250
45-49	67	49	188	5	211
15-49	45	45	1792	22	1931 <sup>c</sup>
F-Ratio	28.7	2.013		9.2	
Prob	0.000	0.060		0.000	
Family size <sup>a</sup>	Un-adjusted	Adjusted for age	N	%	N
	(1)	(2)	(3)	(4)	(5)
0	0	0 <sup>b</sup>	19	0 <sup>b</sup>	148
1	11	9	343	7	345
2	27	27	332	15	336
3	40	41	271	21	273
4	49	50	203	27	205
5	67	68	300	36	155
6	73	73	135	29	135
7	79	79	89	29	89
8	78	78	99	39	99
9+	88	87	146	49	146
0-9+	45	45	1792	22	1931 <sup>c</sup>
F-Ratio	73.9	51.5		26.0	
Prob	0.000	0.000		0.000	

<sup>a</sup> Family size equals number of living children, counting a pregnancy as a living child.

<sup>b</sup> These women had 1+ births but no living children.

<sup>c</sup> N for this column exceeds N for column 2 because all in union women without a birth 0-3 years before survey are counted as not having had an unwanted birth in the period.

Jamaica. Women who wanted no more children and were not asked the question were imputed not to have wanted the last birth if actual family size exceeded desired. On the surface, this imputation might seem logically equivalent. But there is evidence that it often underestimates the number of women with an undesired last birth (table 51).

As can be seen in table 51, the imputation generally underestimates proportion of last births unwanted in all 14 countries shown, sometimes by a wide margin and by an especially wide one for the other two English-speaking Caribbean countries considered in this report. To gauge the likely degree of underestimation for Trinidad and

**Table 51** Comparing estimated and actual percentages not desiring last birth: selected countries

	% whose actual family size exceeds desired (1)	% reporting last birth unwanted (direct question) (2)
<b>A Asia and Pacific</b>		
Bangladesh	19	41
Fiji	11	14
Indonesia	7	17
Jordan	17	30
Korea, Rep. of	34	44
Philippines	18	27
Sri Lanka	15	36
<b>B Caribbean and Latin America</b>		
Colombia	25	43
Costa Rica	18	30
Dominican Rep.	22	34
Guyana	17	46
Jamaica	20	48
Panama	22	34
Peru	33	46

Source: Lightbourne and MacDonald (1982)

Tobago, we compare actual and imputed proportions not wanting last birth for pregnant women and women who never used contraception (table 52).

The comparison suggests (though does not prove) that the underestimation is by a factor of 24/17 in the Trinidad and Tobago survey, though in evaluating the results the evident downward bias should be borne in mind. As will be seen, it is by no means a fruitless exercise to look at social differentials in unwanted fertility for Trinidad and Tobago, since there are some quite substantial differences.

*Trinidad and Tobago: Unwantedness by age and parity*

Unwanted births or current pregnancy in Trinidad and Tobago are judged not from the question on desire for last birth but instead from the contrast between actual and desired family size. The percentage ever having unwanted births (or unwanted current pregnancy) is classified by respondent's age in the upper panel of table 53. The unadjusted percentages in column 1 reveal a systematic relationship with age, rising steadily from a minimum of 0 per cent at age 15-19 and reaching a maximum of 45 per cent at age 40-44. After controlling for parity (column 2), the relationship with age virtually disappears, suggesting that parity (ie number of living children, counting a current pregnancy as a living child) is the dominant variable. The results by parity in columns 1 and 2 of the lower panel of table 53 confirm this surmise, and indicate that the proportion with unwanted births or unwanted current pregnancy is very much a function of family size, rising from 1 per cent among women with one living child to nearly 80 per cent among those with eight children, while also showing that adjusting for age makes no difference to the proportions at each family size with unwanted births. These results are in the expected direction and hence increase our faith in the internal consistency of the data.

**Table 52** Actual and imputed proportions not wanting last birth: Trinidad and Tobago

	Pregnant	Never used contraception	All women
Actual	24 (235) <sup>a</sup>	31 (434) <sup>b</sup>	7+
Imputed	17 (300)	22 (573)	20+

<sup>a</sup>67 pregnant women were not asked whether wanted last.

<sup>b</sup>150 never users were not asked.

NOTES: Figures in brackets are denominators.

**Table 53** Percentages with unwanted last birth or current pregnancy by age and parity: Trinidad and Tobago (imputed from contrast between actual and desired family size)

Age	Ever had unwanted birth/pregnancy			Recent unwanted birth/pregnancy (0-36 months before survey)	
	Un-adjusted % (1)	% adjusted for parity (2)	N (3)	% (4)	N (5)
15-19	0	19	230	0	232
20-24	3	19	606	3	608
25-29	10	20	589	8	595
30-34	20	20	550	12	552
35-39	35	22	429	10	435
40-44	45	24	340	9	343
45-49	43	19	297	2	299
15-49	20	20	3040	6	3064
F-Ratio	98.5	1.37		12.6	
Prob	0.000	0.223		0.000	
Parity <sup>a</sup>	Un-adjusted (1)	Adjusted for age (2)	N (3)	% (4)	N (5)
0 <sup>b</sup>	0	1	456	0	462
1	1	1	553	0	555
2	2	3	573	1	577
3	11	11	383	4	387
4	20	22	313	6	315
5	51	50	235	17	237
6	61	62	166	18	167
7	77	76	128	30	128
8	79	79	85	25	86
9+	77	75	148	25	150
0-9+	20	20	3040	7	3064 <sup>c</sup>
F-Ratio	302.8	192.5		52.1	
Prob	0.000	0.000		0.000	

<sup>a</sup>Parity here refers to number of living children, counting a pregnancy as a living child.

<sup>b</sup>These women had 1+ births but no living children.

<sup>c</sup>N for this column exceeds N for column 2 because all in union women without a birth 0-3 years before survey are counted as not having had an unwanted birth in the period.



The results in column 4 of table 53, which show the variation by age and family size in recent unwanted births during the 0–36 months prior to survey, and which correspond approximately to the 1975–77 period, present matters from an entirely different angle and, unlike the results for Guyana and Jamaica, show a steady rise with age in the likelihood of a recent unwanted birth or pregnancy, rising from 0 per cent at age 15–19 to 12 per cent at age 30–34, then falling to 2 per cent at age 45–49. The column 4 results by family size show that, as one would expect, the likelihood of recent unwanted fertility rises sharply with family size. The implications here may be of interest to organizations concerned with the reduction of wanted fertility, since they show that women at parities 5–9 were particularly prone to unwanted births, indicating relatively poorer fertility control at these family sizes.

#### 4.2 THE GAP BETWEEN ACTUAL AND WANTED FERTILITY LEVELS

What would completed family size be in different social groups if women were to comply with their stated preferences, and how much difference is there between actual and wanted fertility? This section aims to answer these questions by providing estimates of the actual total fertility rate 0–2 years before survey and of the ‘wanted total fertility rate’ over the same period at the national level. Findings for social groups are discussed in chapter 5.

To some extent, the analysis below may overlap with the examination of unwanted fertility presented above, but the approach taken here has the advantage of clarifying the fertility implications of the data. An additional advantage is that it presents results based on two alternative assumptions about judging unwantedness of births, (1) that we should let desire for the last birth based on the direct question dominate, ignoring cases where desired family size equals or exceeds actual, (2) that we should let desired family size dominate, which may be the more realistic option if we extrapolate from Stycos’ findings concerning desire for no more children in Costa Rica discussed in section 2.3.

By way of introduction, we recall that a total fertility rate (TFR) for a given time period tells us the average number of births a woman would have over her lifetime if the set of age-specific fertility rates observed during that period were to persist over the next 35 years.

The ‘wanted’ TFR, on the other hand, defined more precisely below, tells us the average number of wanted births a woman would have over her lifetime. It is in other words an estimate of what the TFR would be if women avoided all unwanted births. In principle, then, the wanted TFR tells us the number of desired births the average woman would have during her life if reproductive motives and reproductive capacity (as influenced by nuptiality, fecundity and lactation patterns) were to remain fairly stable over time.

Since there is a widespread impression that reproductive motives are volatile, we recall that section 2.3 has indicated that reproductive preferences in Trinidad and Tobago and in Jamaica have remained fairly stable between available surveys. This suggests continuing

relevance of the findings reported below. (Unfortunately we have not been able to locate any earlier surveys for Guyana that allow assessment of trends in Guyanese reproductive motives.)

We now outline the procedures used to estimate the TFR and wanted TFR at the national level and for socio-economic groups, but subgroup results will be discussed later in chapter 5.

#### Estimating actual and ‘wanted’ total fertility rates

To assess the amount of agreement or discord between the fertility preferences and fertility behaviour of the total population and of different socio-economic groups, we use comparable measures of behaviour and preferences. We have accordingly estimated at the national level and for each subgroup TFRs and wanted TFRs for the 0–2 year period before survey. The estimation required two steps.

In step 1 we calculated marital age-specific fertility rates for the period 0–24 months before interview, for women who at time of interview (1) were aged 15–49 and (2) were ever in a union; this yields seven five-year rates for ages 15–19, . . . , 45–49, for the two-year period preceding interview. In constructing our measure of fertility behaviour, the ordinary TFR, we include all births and all person years lived over the 24 months prior to interview. Two types of wanted TFR are calculated. The ‘definition 1’ type excludes a birth if (1) it was an unwanted last birth, (2) it exceeded respondent’s desired family size. The ‘definition 2’ type excludes a birth only if it exceeded desired family size and, as is seen below, results in substantially higher estimates of the wanted TFR.

Step 2 consists of multiplying the marital age-specific fertility rates by proportions ever in union, for each five-year age group, to obtain age-specific fertility rates and, from them, estimates of the three types of TFR. The calculation of proportions ever in union for each five-year age group, for each social subgroup, requires a numerator formed by counting person years lived in the ever in union state 0–2 years before survey and a denominator formed by counting all person years lived during that period.

It follows that proportions ever in union can only be calculated directly for social categories that include never in union women, which in practice means that they can be obtained for all residence status, religion, education and ethnicity subgroups but not for other types of subgroups, ie partner’s education, partner’s occupation and respondent’s work characteristics. To meet this problem, we assume that the national five-year age-group proportions ever in union approximate the proportions for these subgroups.

Our reason for preferring these estimated TFRs to the total marital fertility rates that we could have calculated is that the TFR is directly interpretable as the number of births the average woman would have over a lifetime if recent rates were to persist, and can be directly compared to measures of completed fertility such as children ever born to women aged 40–49. Because of the assumption made in estimating TFRs for some subgroups, however, we will emphasize the gap between actual and wanted TFRs in interpreting results for these subgroups rather than stressing the absolute level of fertility.

### Comparison of actual and wanted fertility rates

We interpret the wanted total fertility rates here as measures of the number of desired births the average woman would have over her lifetime if the reproductive preferences observed at time of survey were to persist into the future and if she were to avoid bearing any undesired offspring. These are interesting alternative measures of desired family size that can be argued to estimate the number of births that women would have if (1) they avoided unwanted fertility, (2) they were subject to real world constraints on reproductive capacity, (3) the time-of-survey level of contraception for child spacing purposes continued in a steady state into the future. A second property of the wanted total fertility rates is that they can be compared directly to the TFRs described above, the gap between them indicating the amount of agreement or discrepancy between motives and behaviour.

An important issue to be confronted is which definition of the wanted TFR is likely to be the more meaningful, as the discrepancy is empirically quite large.

Country	Wanted total fertility rates	
	Definition 2	Definition 1
	Omitting births in excess of desired number of children	Also omitting births directly reported as unwanted
Guyana	3.66	2.69
Jamaica	3.40	2.28
Trinidad and Tobago <sup>a</sup>	2.46	2.42

<sup>a</sup>Because the Trinidad and Tobago survey restricted the question on desire for last birth to the small minority of women who had never used contraceptives (22 per cent of ever in union respondents), the definition 1 wanted birth rates for Trinidad and Tobago are likely to be substantially overestimated.

The discrepancy arises from respondents who said they did not want the last birth yet also reported a desired family size equalling or exceeding actual family size. Such women cannot be said to have rationalized their desired family size since they were prepared to say they had not wanted more children at the time of the last birth. One interpretation that fits reasonably well is that the last birth was unwanted in the sense of being mistimed rather than in excess of desired family size; this is consistent with Stycos' finding that women who 'want no more' but state a desired size exceeding actual number of children have a very much higher likelihood of switching to 'more wanted' (ie 50 per cent) than women whose desired size is the same as or less than the actual number (ie 5 per cent). At least we can regard definition 2 as providing a maximum estimate of the wanted total fertility rate and definition 1 as providing a minimum one. Given our intention of estimating the fertility level that would obtain if women behaved consistently with their stated preferences, however, this might seem overly cautious; it might seem reasonable to

**Table 54** Actual and wanted total fertility rates, national level

Country	Total fertility rates <sup>a</sup>			Wanted TFR	Number of cases
	Actual TFR	Wanted TFR defn 1	Gap between 1 and 2		
	(1)	(2)	(3)	(4)	(5)
Guyana	4.37	2.69	1.68	3.66	4898
Jamaica	4.40	2.28	1.12	3.40	35
Trinidad and Tobago	3.13	2.42 <sup>b</sup>	0.71	2.46	4981

<sup>a</sup>Based on the 24 months before interview.

<sup>b</sup>Different from Guyana and Jamaica, because information on wanting last birth is available only for contraceptive never users.

suppose that if the discrepancy is due to mistimed births these births ought not to be counted as wanted, which leaves us with the definition 1 wanted TFR as the more meaningful measure. On the other hand, it might be argued that since these mistimed births are ultimately wanted they will eventually emerge, and that the definition 1 wanted TFR is lower than the steady state TFR that will result from a long-run compliance with preferences.

The discussion on amount of unwanted fertility below focuses on definition 1 of the wanted total fertility rate. We think that this is more reasonable than the alternative definition 2 comparison of 'wanted' with actual TFR. Although definition 1 is a minimum estimate of the wanted TFR, and includes timing mistakes, the fact that the comparison is between two current fertility rates makes it the better choice: the wanted TFR for the two-year period reflects the situation in that time period, as does the actual TFR. Neither is a lifetime measure, and both are cross-sectional, synthetic cohort, current estimates.

### Results

The top row of column 1, table 54, shows that at the national level in Guyana, the actual TFR for 0-2 years before survey estimated from the Guyana Fertility Survey implies a completed fertility of 4.4 births, if the rates observed 0-2 years before survey were maintained into the future. The wanted TFR, on the other hand, implies that women wanted only 2.7 of those births, suggesting a gap between wanted and actual of 1.7 births (this gap can be regarded as the number of unwanted births over a lifetime that the average Guyanese woman would have if the structures of 1974-75 persisted to the year 2010).

The second row of table 54 indicates that at the national level the TFR estimated from the Jamaica Fertility Survey was 4.40 in 1974-75, as compared with a wanted TFR of 2.28 births over the same period, implying a gap between actual and wanted fertility of 2.11 unwanted births, so that if the fertility rates and levels of unwanted fertility observed 0-2 years before survey were to continue over the next 35 years, Jamaican women could be expected to have 2.1 unwanted births *per capita* and 2.3 wanted births.

**Table 55** Per cent using contraception among currently in union, fecund women aged 15–39

Country	Women who want more	Number of women	Women who do not want more	Number of women
Guyana	26.2	1290	41.0	1138
Jamaica	36.4	879	54.0	631
Trinidad and Tobago	50.1	1516	68.6	840

The national TFR for Trinidad and Tobago for the three years preceding survey is estimated at 3.1, which is substantially higher than the wanted total fertility rate of 2.4. While this wanted TFR is an overestimate, for the reasons discussed above, it nevertheless implies the existence of a by no means insignificant gap of 7/10 of a birth between wanted and actual fertility, which can be regarded as a minimum estimate of the number of unwanted births that the average woman in Trinidad and Tobago would have over a lifetime if the preferences and fertility behaviour of the 1976–77 period were maintained for 35 years into the future.

#### 4.3 PREFERENCES AND CONTRACEPTION

Because of the intimate relationship between unwanted fertility, proportions wanting more children and contraceptive use, this section briefly reviews socio-economic differentials in percentages using contraception for spacing and stopping purposes among women aged 15–39.

It is emphasized that while contraceptive use among women who want more children is undoubtedly very often a consequence of their own desire to postpone the next birth, there may sometimes be cases where it is the husband or partner's desire either to postpone or to have no additional children. Nevertheless, for reasons of brevity, we will often refer to 'contraceptive use for purposes of childspacing' when in fact we mean 'contraceptive use among women who want additional children'.

#### Definitions

Since only in union and self-reported fecund women are coded on desire for additional children, the analysis is correspondingly restricted to this group, and is further restricted to women aged 15–39 on the basis that this is the group most at risk of pregnancy.

The 'proportion using contraception among women who want more children' is somewhat unconventionally defined. The numerator contains contraceptive users who say they want more children, but the denominator includes (1) non-pregnant women who say they want more children and (2) pregnant women who say they want the current pregnancy, which includes women who want no additional children but who do want the current pregnancy.

The 'proportion using contraception among women who want no more children' is also somewhat unconventionally defined. The numerator consists of contraceptive users

who say they want no more children, while the denominator includes (1) non-pregnant women who want no more children and (2) pregnant women who do not want the current pregnancy; we note the denominator excludes a pregnant woman who wants no more children if she wants the current pregnancy.

#### Results on contraceptive use in relation to preferences

Substantial use for spacing purposes (women who want more but are currently using) exists in all three countries, but especially in Trinidad and Tobago, which is to be expected since fertility is lowest there. The national-level results indicate a strong differential in the level of use, depending on whether more children are wanted (table 55).

Women who do not want any more children are nearly 50 per cent more likely to be using contraception than those who do want more children, suggesting that there is some degree of consistency between expressed preferences and actual behaviour in terms of use to implement these preferences. The absolute difference in proportion using is 15 per cent in Guyana, 18 per cent in Jamaica and 19 per cent in Trinidad and Tobago. However, it is also clear that there is a large proportion of women who say they wish to stop childbearing but are not taking any steps to do so. This may be due either to lack of sufficient motivation (ie the answer can have different degrees of meaning), or to inadequate access to family planning advice or supplies, or to other persons or factors influencing the ability or the wish to use contraception.

#### 4.4 CRUDE BIRTH RATES IMPLIED BY THE PREFERENCE DATA

There are countries in which reproductive motivation is distinctly unfavourable to fertility change and other countries where the data imply that change is possible or likely. This section presents some estimates of the crude birth rates implied by the WFS surveys in Guyana, Jamaica and Trinidad and Tobago if women were to conform with their stated preferences to stop childbearing.

When demographers want to investigate the accuracy and reliability of a particular procedure, they frequently try to devise alternative methods that are definitionally reasonable. If several different methods yield approximately the same answer, then the results become more

**Table 56** Estimating wanted crude birth rates

Country	In year prior to survey			CBR 0-3 years before survey	Wanted crude birth rate
	Wanted births	Total births <sup>a</sup>	Proportion wanted		
Guyana	420	639	0.6573	29	19.1
Jamaica	256	457	0.5602	28	15.7
Trinidad and Tobago	175 <sup>b</sup>	228 <sup>b</sup>	0.7672	22	16.9

<sup>a</sup>Total births coded on wantedness status.

<sup>b</sup>Trinidad and Tobago data refer to pregnancies.

credible. Accordingly, four alternative estimates are presented of the crude birth rates implied by the available data on reproductive motivation. The first estimate looks at what would happen to the crude birth rate if women avoided unwanted births. The second and third examine what would happen if efficient contraceptives were adopted by all women who were fecund, wanted no more children, and were not using contraception. The fourth makes the same assumption as methods 2 and 3, but uses the Bongaarts model to obtain expected reduction in the TFR and transforms this into an expected reduction in the CBR. The assumptions used here produce maximal estimates of reduction in one sense: we do not discount women whose desired family size is larger than actual when they also say they did not want the last or that they want more. However, we argue that these women are potential spacers and since the CBR or the TFR are measures of the current level of fertility, it is reasonable to treat this group as potentially reducing the CBR.

#### Fertility effects of preventing unwanted births

The question on desire for last birth is used here to estimate the crude birth rate (CBR) that would result if women avoided all unwanted births.

In the surveys of Guyana and Jamaica, non-pregnant women who said they wanted no more children were asked, 'Thinking back to the time before you became pregnant with your last child, had you wanted to have any more children?' and the responses were coded 'Yes', 'No', 'Uncertain'; women who said they wanted more were assumed to have wanted the last birth. In the survey of Trinidad and Tobago, on the other hand, pregnant women who said they wanted no additional children after the current pregnancy had ended were asked, 'Before you became pregnant this time, had you wanted to have any (more) children?'

To estimate the crude birth rate expected if women avoided unwanted pregnancy, denoted WCBR for 'wanted CBR', we use:

$$\text{WCBR} = \text{CBR}' \cdot \text{PW} \quad (1)$$

where PW is the proportion wanted among births that occurred in the 12 months prior to interview and CBR' the contemporaneous crude birth rate. Since the survey crude birth rate for the year preceding interview is subject to

rather high sampling error, however, we estimate CBR' using the CBR calculated for the 0-36 month period to survey, noting that this will to some extent overestimate the wanted crude birth rate if fertility had been declining sharply during that period.

Table 56 applies this approach to Guyana and Jamaica, and estimates that the CBR for Guyana during 1973-75 would have been 19.1 per 1000 had women avoided all unwanted births and that for Jamaica 15.7 per 1000.

The estimate for Trinidad and Tobago is similar in principle but is based on the proportion of current pregnancies that were wanted, since the question on whether last birth was wanted was asked only of contraceptive never users, while that on whether current pregnancy was wanted was asked of all pregnant women. This estimate indicates that over the 1975-7 period the CBR in Trinidad and Tobago would have been 16.9 per 1000 had all unwanted births been avoided (earlier estimates, based on births in the last 12 months, were somewhat higher, but probably overestimate the wanted crude birth rate).

It might well be asked, 'How realistic is it to assume that all unwanted fertility is avoided?'. Given the emergence of better contraceptives, however, and given a long run tendency for adoption on the part of women who wish to terminate childbearing, there should evidently be a long run tendency for the CBR to come into equilibrium with the wanted CBR.

#### CBR implied by implementation of preferences

An alternative way of estimating the crude birth rate implied by the preference data is to estimate the CBR that would result if all fecund women who want no more children were to implement their preferences by adopting contraception. Note that this approach relies on an entirely different data source, making use of the information on whether more children are wanted and whether contraception is currently in use, and does not assume the 100 per cent effectiveness implicitly assumed by the 'prevention of all unwanted births' method.

We illustrate the method and its assumptions by applying it to Jamaica. In the Jamaican survey, 26.3 per cent of currently in union and fecund women wanted no more children but were not using contraception.

To estimate how much fertility would decline if this 26.3 per cent of currently married and fecund women were to

begin using efficient contraception, we need information on how much change in the crude birth rate would be produced by a one percentage point increase in the proportion using efficient methods of contraception. The only estimate accessible to us comes from a multiple regression analysis across 29 countries in which CBR was the dependent variable and where the regressor variables included per cent currently married, median duration of breastfeeding (current status estimates), proportion using efficient contraceptives among currently married and fecund women, and proportion using inefficient contraceptives among currently married and fecund women. The analysis indicated that a 1 per cent increase in the use of efficient methods of contraception among currently married and fecund women was associated with a decline of 0.414 points per 1000 in the crude birth rate (Lightbourne 1982).

This implies  $10.9 = (0.414).(26.3)$  points off the crude birth rate of 28 per 1000, or a crude birth rate of 17.1 per 1000. Expressing this as an equation, we have:

$$WCBR' = CBR - 0.414PNU \quad (2)$$

where PNU is the proportion of currently in union and fecund women who want no more children and are not using contraception.

The resulting estimates for the three countries based on equation (2) are set out in table 57.

#### Alternative estimate of CBR implied by implementation of preferences

The estimates given above may overstate the amount of fertility reduction to be expected, however, since many women who report themselves as fecund non-users nevertheless appear to have a very low risk of bearing future children. Such women have been termed behaviourally infecund (Westoff and Pebley 1981) and we should perhaps exclude them. Westoff and Pebley have proposed that a woman should be considered as behaviourally infecund if (1) she has produced no births in the 60 months preceding interview and is not currently pregnant, (2) she has been continuously in a union during the 60 months, (3) she has not used contraception during the 60 months. When this rule is applied to the present surveys, the results shown in table 58 are obtained.

If the expected crude birth rate associated with adoption of contraception by women who wish to cease childbearing is based on excluding behaviourally infecund women, the wanted crude birth rates (version 3) then become:

Guyana	$29 - 0.414 (24.5) = 18.9$
Jamaica	$28 - 0.414 (21.3) = 19.2$
Trinidad and Tobago	$22 - 0.414 (12.8) = 16.7$

The reason for preferring the version 3 to the version 2 estimates is that the regression coefficient of 0.414 is based on current use of efficient methods, and that on a worldwide basis, relatively few of the current users were behaviourally infecund at the time they started using, since there is a tendency for women to adopt only if they have a reasonable expectation of further childbearing.

**Table 57** Estimating decline in crude birth rate if all in union and fecund women who wanted no more children were to adopt efficient contraception

Country	% wanting to stop and not using contra. <sup>a</sup>	Crude birth rate	Decline in crude birth	Version 2, wanted CBR
Guyana	33.2	29	13.7	15.3
Jamaica	26.3	28	10.9	17.1
Trinidad and Tobago	19.2	22	7.9	14.1

<sup>a</sup>Percentage of currently in union and fecund women who wanted to stop childbearing but were not using contraception.

**Table 58** Percentage wanting to stop having children and not using contraception: in union and fecund women = denominator

Country	Behaviourally infecund women included	Behaviourally infecund women excluded
Guyana	33.2	24.5
Jamaica	26.3	21.3
Trinidad and Tobago	19.2	12.8

#### Estimation using Bongaarts' model

Another approach to estimating the reduction in TFR that would result if women who want no more children were all to adopt contraception is to make use of the relationships posited by Bongaarts' adaptation of the Davis and Blake intermediate variables schema. In this frame, the TFR is held to be determined by five proximate determinants of fertility, as follows:

$$TFR = TF.C_1.C_a.C_c.C_m \quad (3)$$

where TFR is the total fertility rate; TF is a hypothetical total fertility rate implied if all women were married, none used contraception, all had the minimum levels of post-partum infecundability, none used abortion;  $C_1$  is an index of post-partum infecundability calculated from mean durations of breastfeeding;  $C_a$  is an index of induced abortion;  $C_c$  is an index of contraception;  $C_m$  is an index of exposure to intercourse.

The complement of the value for each index represents the proportionate reduction in TFR that results from the operation of that particular factor.

Estimates of these indexes have been calculated by Casterline, Singh and Cleland (1983) for the three countries considered and are shown in columns 1-5 of table 59 (the index of abortion is omitted because the required information was lacking). Following the same definition used in calculating the indices, column 6 of the table shows the observed proportion using contraception

**Table 59** Indices of Bongaarts' model (columns 1-5), proportions using contraception (column 6) and proportions not using among women who want no more children

Country	TFR (1)	TF (2)	C <sub>1</sub> (3)	C <sub>c</sub> (4)	C <sub>m</sub> (5)	C <sub>u</sub> <sup>a</sup> (6)	INC <sup>b</sup> (7)
Guyana	4.75	10.09	0.89	0.72	0.73	30.4	29.5
Jamaica	4.52	11.22	0.85	0.64	0.74	36.0	22.0
Trinidad and Tobago	3.18	8.97	0.89	0.57	0.70	49.5	17.0

<sup>a</sup>C<sub>u</sub> corresponds to proportions using contraception among currently in union women not breastfeeding a baby aged six months or less.

<sup>b</sup>INC refers to incremental amount contraception would increase if all currently in union and fecund non-users of contraception who wanted no more children were to adopt.

among all currently married women, excluding women currently breastfeeding a child aged six months or less. Column 7, on the other hand, shows the proportion of currently in union women who wanted no more children and were not using contraception, and who therefore can be regarded as potential adopters if all those who want no more were to adopt (since the model estimates used here ignore fecundity status in estimating the effect of contraception, it is appropriate for us to ignore it also).

To make use of these data in estimating the reduction in fertility that would be expected if all who wanted no more were to adopt contraception, we basically use the relationship posited in equation (3) and the information provided in table 59 to find the effect on the TFR of a 1 per cent change in the use of contraception. The required steps are as follows.

1 First, we estimate what the TFR would be if no one used contraception, denoting it TFR' and using the relationship:

$$TFR' = TF / (C_1 \cdot C_m) \quad (4)$$

Country	TFR 0-5 yr before survey	TFR with all stoppers adopting	Per cent reduction	Actual CBR	Reduced CBR
Guyana	4.75	3.05	0.36	29	18.6
Jamaica	4.52	2.97	0.34	28	18.4
Trinidad and Tobago	3.18	2.35	0.26	22	16.3

### Reconciling estimates of the crude birth rate

The discussion above has developed three different estimates of the birth rates to be expected if women who

wanted to stop childbearing all took steps to avoid having further children. They are as follows:

Country	Elimination of all unwanted births Version 1	Adoption of efficient contraception by all who want to stop		Bongaarts/Lightbourne estimate Version 4
		Version 2	Version 3	
Guyana	19.1	15.3	18.9	18.0
Jamaica	15.7	17.1	19.2	18.4
Trinidad and Tobago	16.9	14.1	16.7	16.3

$$d = (TFR' - TFR) / C_u \quad (5)$$

where C<sub>u</sub> is the proportion using contraception in column 6.

Once we have an estimate of the amount by which the TFR should decline with a 1 per cent increase in the proportion using contraception, we use the relation:

$$TFR'' = TFR - (d \cdot INC) \quad (6)$$

where INC is the expected increase in proportion using contraception (the per cent not using among currently married women who want no more children), d the expected decrement to the TFR for each unit of increase in percentage using contraception, and TFR'' the estimated TFR following the rise in contraception by INC units.

Applying this procedure to the data for Jamaica, we find that  $11.22 / (0.85 \cdot 0.74) = 7.06$  equals the expected TFR if everyone ceased using contraception, while the amount of contraception associated with this change of 2.54 in the TFR is 36.0 per cent, so that each 1 per cent change in the proportion using is associated with a change of 0.071 units in the TFR ( $0.071 = 2.54 / 36.0$ ). Under this estimate, then, a reduction of  $1.55 = 22 \times 0.071$  can be expected in the current TFR if 22 per cent adopted contraception. The expected TFR if all non-users who wanted no more children were to adopt should thus be in the neighbourhood of  $2.97 = 4.52 - 1.55$ . Roughly speaking, this translates to a proportionate reduction in fertility to 66 per cent of its former level, so that the crude birth rate should decline from 29 to about 18.4 per 1000 if marriage and breastfeeding remain constant.

Repeating this exercise with the other two countries, we get the following estimates.

One would expect (1) elimination of unwanted births to have greater effect in reducing the birth rate than (2) adoption of contraception of average efficiency by women who want no more, because (1) implies a failure rate of zero while (2) implies some level of contraceptive failure. But this expected result holds only in Jamaica, while in both Guyana and Trinidad and Tobago the reverse is true. This could reflect either an inconsistently high proportion of Jamaicans reporting unwanted births or an inconsistently low proportion of women in Guyana and Trinidad and Tobago, or else that the coefficient of 0.414 is inappropriately high in Guyana and Trinidad and Tobago.

But either way, the estimates do not diverge all that greatly, and from this exercise we have reasonably strong grounds for stating that if women in the three countries were to fully implement their preferences, one could expect a crude birth rate of somewhere between 15 and 19 per 1000 in Guyana, between 16 and 19 per 1000 in Jamaica, and between 14 and 17 per 1000 in Trinidad and Tobago.

It is emphasized that this says nothing about contraceptive use for childspacing purposes. Clearly somewhat lower fertility levels would result if women were to successfully implement contraception for spacing purposes, but without estimates of the number of women who want to space and are not using contraception we cannot essay any estimates of the likely impact of such

implementation.

It is also emphasized that the version 1 and version 2 estimates based on proportions wanting no more children are relatively crude macro-estimates based on world averages. The estimates based on proportions wanting the last birth, on the other hand, are definitionally clean, but depend greatly on the assumption that these proportions are estimated correctly.

And lastly and most important, it is emphasized that the estimates assume that the data are a correct representation of the 'steady state'. More exact and reliable estimation will require further information that can most likely only be obtained via longitudinal studies of reproductive motivation that keep track of changes between wanting immediate pregnancy, wanting to space and wanting to stop, and also bring in husband or partner attitudes.

If we take the data at face value, these results have important implications. For the Government of Guyana, which wishes to increase population, there is the implication that further fertility decline can be expected. For the Governments of Jamaica and of Trinidad and Tobago, on the other hand, which wish to reduce population growth, there is the implication that their birth rates would be in the range of 15-19 per 1000 for Jamaica and 14-17 per 1000 for Trinidad and Tobago if unwanted fertility was prevented.

## 5 Success and Failure in Limiting Fertility: Socio-Economic Differentials

It is obvious that the actual fertility of social groups is likely to differ sharply if the groups have very different reproductive desires and successfully use contraception to achieve these desires. On the other hand, it is equally obvious that even if preferences are identical in all social groups, fertility may vary greatly if some groups are much more successful than others in controlling their fertility.

Chapter 3.1 has already shown negligible variation in mean desired family size between different social groups and relatively trivial intergroup differences in proportions wanting additional children. This chapter will examine total fertility rates in various social groups and will demonstrate major variation in actual fertility between the groups. It will show that this variation in actual fertility stems very largely from group differences in success and failure to control fertility and is closely associated with group differentials in contraceptive use. This will strongly support the central argument of the current report, which is that wanted birth rates were genuinely much lower than actual birth rates in all three countries. Such findings have strong implications for policy.

### 5.1 SOCIO-ECONOMIC DIFFERENCES IN UNWANTED CHILDBEARING

#### **Guyana: Socio-economic differences in unwanted childbearing**

Socio-economic differences in the likelihood of unwanted childbearing in the 36 months preceding interview are shown in columns 1-4 of table 60. The percentages in column 1 are unadjusted, but these unadjusted results are of interest only if we believe that women in each social category have had equal exposure to risk of unwanted childbearing. The proportions in column 2 are adjusted so as to equalize exposure to risk between the different social categories, through controlling for age at entry to first union (abbreviated AGFU), for months elapsed since entry to first union (MESFUB), and AGFU squared and MESFUB squared (the squared terms are intended to cope with curvilinearities).

Comparing columns 1 and 2 we see that adjusting for differential exposure to risk of childbearing has in fact produced very little change. But by using the figures in column 2 for making comparisons between social categories, we can be assured that observed differences will not be just artefacts of differential exposure.

The results in column 2 show quite strong differentials in likelihood of unwanted births by education and occupation, weaker differentials by residence status, union status and whether currently working, and negligible ones by ethnicity, religion and whether worked before or after

first birth. The differentials by education are both substantively and statistically significant. Women with 0-5 years' education are about four times more likely to have had unwanted births in the three years prior to interview than are women with a completed secondary education (29 per cent versus 7 per cent). But while the likelihood of unwanted childbearing falls with increasing education, it changes quite irregularly with progress up the educational ladder; the least educated women, with 0-5 years in school, are only slightly more likely to have experienced unwanted births than women who completed primary school (1.3 times). However, women who started secondary school but did not finish are two and half times more likely to have had unwanted births than women who completed secondary school.

The differentials by husband's education are similar in direction though somewhat less in magnitude.

Likelihood of unwanted childbearing in the last 36 months varies somewhat less by occupation than it does by education, from 14 to 26 per cent by woman's latest (or current) occupation and from 13 to 25 per cent by partner's occupation.

The variation in undesired natality by residence status is statistically significant at the 0.001 level but substantively weak; 16 per cent of urban born urban respondents had an unwanted birth in the three years preceding survey, compared with an intermediate 18 per cent among rural born urban women and 23 per cent among rural residents (of whom 98 per cent were rural born).

As might be expected, women who held jobs at time of survey were less likely to have had an unwanted birth or pregnancy than non-working women, but the difference is comparatively slight, only 5 per cent. The differences are even smaller when we compare women who did and did not work before the first birth, and women who had and had not worked after the first birth. Interestingly enough, the women who had never worked defy expectations by having a likelihood of unwanted births that is no higher than average.

The differential by union status shows common law wives having significantly higher chance of unwanted births (27 per cent) than married women (20 per cent) or visiting women (18 per cent).

#### *Guyana: Differentials adjusted for socio-economic composition*

Column 3 of table 60 contains percentages with unwanted last births adjusted not only for exposure to risk (ie months elapsed since first union) but also for composition on 'causally prior' social variables. For example, the percentages shown for ethnicity in column 3 are adjusted for residence status, AGFU, MESFUB, AGFU squared and MESFUB squared, using the regression approach described in chapter 2. The contrast between columns 1



Table 60 Indicators of unwanted fertility: Guyana

	Per cent with unwanted fertility					AT ANY TIME IN THE PAST (Means adjusted for AGFU, MESFUB, A-sq., M-sq.)	Proportion of babies born 0-12 months before survey that were "unwanted"	
	0-36 MONTHS BEFORE THE INTERVIEW						Per cent	N
	Percentages adjusted for:							
	Unad- -just -ed	AGFU, MESFUB, A-sq., M-sq.	AGFU, MESFUB, A-sq, M-sq and: All Prior vars.	other vars.	N			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
ALL GUYANA	20.6	20.6	20.6	20.6	2967	46.9	34.2	584
RESIDENCE STATUS								
Rural born, resides rural	22.5	22.6	22.6	21.5	1945	51.6	37.2	395
Rural born, resides urban	17.8	17.6	17.6	18.5	535	36.3	29.7	101
Urban born, resides urban	16.2	16.2	16.2	19.4	487	35.7	26.1	88
PROB VALUE	0.002	0.001	0.001	0.345		0.000	0.080	
ETHNICITY								
Non-Indian	19.7	19.7	21.1	23.2	1322	38.7	33.0	270
Indian	21.4	21.4	20.3	18.6	1645	52.4	35.4	314
PROB VALUE	0.247	0.256	0.606	0.125		0.000	0.545	
RELIGION								
Catholic	18.7	18.1	18.5	19.1	348	34.1	24.3	74
Other Christian	19.4	19.6	18.9	20.4	1177	40.6	33.6	229
Hindu	22.6	22.5	23.0	21.1	1119	55.0	38.6	220
Muslim	20.4	20.7	21.3	21.4	323	49.9	32.8	61
PROB VALUE	0.201	0.209	0.539	0.927		0.000	0.156	
RESPONDENT'S EDUCATION								
0-5 years	25.9	29.6	30.0	27.8	526	66.2	56.6	76
6-7 years	22.2	22.5	22.6	20.9	734	57.6	43.0	114
Completed primary	19.9	21.8	21.4	21.8	712	48.6	47.9	96
Incomplete secondary	21.1	16.9	16.8	17.6	684	28.4	25.1	223
Completed secondary	8.7	6.8	6.7	11.9	311	18.1	8.0	75
PROB VALUE	0.000	0.000	0.000	0.000		0.000	0.000	
UNION STATUS								
Married	19.4	20.0	20.0	20.0	2175	48.2	33.4	413
Common-law	27.9	26.5	25.1	24.2	419	46.7	41.0	100
Visiting	19.8	18.0	19.3	20.0	373	35.1	29.6	71
PROB VALUE	0.000	0.003	0.049	0.168		0.000	0.242	
R'S LATEST OCCUPATION								
Prof-clerical-shop assistant	13.7	13.7	19.4	19.4	469	31.1	20.6	97
Services-street vendors	22.2	22.6	19.6	19.6	648	46.0	36.6	131
Skilled-unskilled manual	16.8	17.5	17.3	17.3	244	45.2	34.3	35
Agriculture	21.7	25.6	19.9	19.9	0	61.2	51.4	37
Never worked	22.8	21.7	21.9	21.9	1606	49.0	35.6	284
PROB VALUE	0.000	0.000	0.677	0.843		0.000		
WORKING NOW ?								
Now working	15.7	16.7	17.4	15.7	839	43.1	30.3	119
Not now working	22.6	22.2	21.9	22.6	2128	47.8	35.3	465
PROB VALUE	0.000	0.001	0.026	0.002		0.046	0.304	
WORKED BEFORE 1ST BIRTH ?								
Worked before 1st birth	17.8	19.1	19.8	21.5	1086	39.7	27.9	204
Did not work before 1st	22.3	21.5	21.1	20.1	1881	50.2	37.6	380
PROB VALUE	0.003	0.112	0.554	0.537		0.000	0.018	
WORKED AFTER 1ST BIRTH ?								
Worked after 1st birth	19.6	20.6	24.5	24.6	1208	46.4	34.8	201
Did not work after 1st	21.3	20.7	18.0	17.9	1759	46.5	33.9	383
PROB VALUE	0.261	0.933	0.015	0.014		0.964	0.830	

Table 60, continued

	Per cent with unwanted fertility					AT ANY TIME IN THE PAST (Means adjusted for AGFU, MESFUB, A-sq., M-sq.)	Proportion of babies born 0-12 months before survey that were "unwanted"	
	0-36 MONTHS BEFORE THE INTERVIEW						Per cent	N
	Percentages adjusted for:							
	Unad- just- -ed	AGFU, MESFUB, A-sq., M-sq.	AGFU, MESFUB, A-sq, M-sq and: Prior vars.	All other vars.	N			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>HUSBAND/PARTNER'S EDUCATION</b>								
0-5 years	24.0	25.1	23.3	22.9	575	57.0	41.4	99
6-7 years	25.9	26.7	25.5	25.2	572	58.7	53.8	93
Completed primary	19.4	19.8	19.1	19.0	862	48.1	39.3	150
Incomplete secondary	22.3	20.3	20.9	21.1	497	37.9	28.4	134
Completed secondary	10.4	9.5	13.7	14.6	461	21.8	11.1	108
PROB VALUE	0.000	0.000	0.001	0.005		0.000	0.000	
<b>HUSB/PARTNER'S OCCUPATION</b>								
Prof-tech-admin-clerical	13.7	13.2	18.8	18.8	454	31.5	20.2	84
Services-sales	16.9	17.4	18.8	18.8	509	43.3	24.5	106
Agriculture	24.7	25.2	22.2	22.2	673	57.7	43.1	123
Skilled-unskilled manual	22.4	22.1	21.2	21.2	1331	46.6	38.4	271
PROB VALUE	0.000	0.000	0.484	0.484		0.000	0.000	

The adjusted means are adjusted using MCA-style multiple regression as follows: All are adjusted for age at first union (AGFU), months elapsed since first union began (MESFUB), AGFU squared (A-sq.), and MESFUB squared (M-sq.). Means in column 3 are adjusted for all variables listed prior to the variable in question (e.g. union status in column 3 is adjusted for MESFUB, MESFUB-squared, AGFU, AGFU squared, and for residence status, religion, and respondent education.) Means in column 4 are adjusted for all other variables that are shown, including AGFU, AGFU-squared, MESFUB and MESFUB-squared.

and 2 shows the effects of adjusting for differential exposure. The comparison between columns 2 and 3 shows the effects of adjusting the categories of each variable for their composition on 'causally prior' variables, whose causal priority is indicated in the physical organization of the table (residence status is considered prior to ethnicity, ethnicity prior to religion, and so on, with husband's occupation being lowest in the assumed causal chain).

In the contrast between columns 2 and 3 the most prominent feature, perhaps, is that the differentials by respondent's education are virtually the same in column 3 as in column 2, even after residence status, ethnicity and religion are controlled for. The differentials by respondent's most recent (or current) occupation, on the other hand, are both large and statistically significant in column 2 but much smaller in column 3, suggesting that the sizeable differences observed in column 2 are largely due to composition on social variables higher in the causal chain. Also of interest in column 3 is that even after controlling on the nine causally prior variables that precede it, husband's education retains differentials that, while slightly smaller than in column 2, are none the less both statistically and substantively significant. This is especially noteworthy because wife's education precedes husband's education and is hence controlled for, so that it is apparent that increasing education of husband has an independent effect in reducing the likelihood of having an unwanted last birth or current pregnancy over and above

the effects of wife's education; examining the cross-tabulation of husband's education by wife's education in table 5 confirms that this is plausible, since while it shows the expected tendency for respondents to pair with men of equivalent education, the numbers of couples with disparate education are sufficient for husband's education to have an independent effect.

#### *Guyana: Results adjusted for all other variables*

The proportions in column 4 of table 60 show the variation between the categories of each variable when all other 14 variables are simultaneously controlled for. This constitutes the severest test of whether the differentials observed between categories of a particular variable at a lesser stage of adjustment are due to composition on other variables or are a 'true' effect of the variable in question (there remains of course the possibility that some relevant variable not considered here has been omitted).

The results in column 4 indicate that when all 15 of the variables under consideration are simultaneously controlled for, large and statistically significant differentials ( $p < 0.0005$ ) remain for both respondent education and partner education, and that each of these two variables continues to have a strong effect independent of the other.

The differentials by both wife's and husband's occupation have dwindled to insignificance, which implies that their education and not their occupation is the important factor in explaining differential likelihood in having unwanted births. Interestingly, the bivariate table 5

shows there was a rather loose association between education and occupation. While 69 per cent of the women in the white collar group (professional, technical, administrative, clerical) had a secondary education, 31 per cent did not.

The residence status variable loses all significance in column 4, and it becomes apparent that the differentials observed for this variable in columns 1–3 are due to its composition on other variables, most likely because of the differentials on education (table 5 shows rural women are much less educated).

The ethnicity variable, however, comes close to being significant in column 4, and suggests a reversal of the results observed in column 1, with non-Indians having a slightly higher likelihood of unwanted births once differential composition on other variables is taken into account.

Two of the female labour force participation variables are highly statistically significant in column 4, at better than the 98 per cent level; the 'working now' variable indicates that women who held jobs at time of interview were substantially less likely to have had unwanted fertility in the 36 months preceding interview, which is consistent with the expectation that births interfere with work, so that women are either less likely to work if they have had a recent birth or more likely to take steps to avoid childbearing. On the other hand, the 'worked after first birth' variable points in an unexpected direction, indicating that women who have worked after the first birth are somewhat more likely to have had an unwanted birth in the three years before interview, which reverses the unadjusted association in column 1; this most likely reflects the fact that the 'working now' variable is already controlled for, so that in this context the category 'worked after first birth' possibly shifts its meaning to 'worked after first birth but not now', hence selecting for women with a recent birth who are less apt to have been working at time of survey. To test this surmise table 61 presents proportions with unwanted fertility 0–3 years prior to interview, classified by whether working now and whether worked after first birth. The table shows that it is primarily the working now variable that has an effect on unwanted fertility, and that this survives whether or not we adjust for education of respondent and partner.

**Table 61** Proportions with unwanted birth or current pregnancy 0–3 years before survey by work status: Guyana

	Unadjusted	Adjusted <sup>a</sup>	N
Working now	17.2	18.2	767
Worked after first birth, not now	23.8	23.8	461
Did not work after first birth	22.1	23.2	307
Never worked	24.1	23.3	1235
Total	21.9	21.9	2750
Prob value	0.002	0.038	

<sup>a</sup>Adjusted for respondent and partner education.

#### *Guyana: Proportions ever having unwanted birth*

Column 6 of table 60 shows proportions ever having an unwanted birth at any time in the past, adjusted only for differential exposure to risk of childbearing (ie for age at first union and months elapsed since union began).

The data in column 6 show, as one might expect, much higher likelihood of ever having had an unwanted birth than of having had one in the more restricted time span 0–3 years before survey. The results show that only one in five secondary educated women reported ever having had unwanted fertility, compared to two in three of the women with 0–5 years' education.

The contrast between column 2 and column 6 is of some interest. For several variables it indicates much larger differentials in proportions ever having unwanted fertility and comparatively small differentials in the period 0–3 years prior to survey. This demonstrates quite clearly a progressive narrowing between social groups in the likelihood of having unwanted births. For example, the differential between rural and urban women is much larger in column 6 than in column 2, and that between Indians and non-Indians in the bounded period 0–3 years before survey is much smaller than in the unbounded 'ever before' period.

#### **Jamaica: Socio-economic differences in unwanted childbearing**

We turn now to examining social differentials in likelihood of an unwanted last birth or current unwanted pregnancy for Jamaica, based on the period 0–3 years preceding interview. This is of more interest than likelihood of ever having had an unwanted birth because it is time bounded, and refers to the situation between 1973 and 1975.

Unadjusted percentages with undesired natality in the 1973–5 period are shown in column 1 of table 62. But these unadjusted proportions are less useful than the figures in column 2, which are standardized for differential opportunity to bear children by using multiple regression to control for months elapsed since first union began (MESFUB) and age at first union (AGFU), and, to handle curvilinearity, MESFUB squared and AGFU squared.

In actual fact, the comparison between columns 1 and 2 indicates that, as with Guyana, standardizing makes remarkably little difference, but the adjustment is none the less important because it assures us that differing likelihood of unwanted fertility between the social groups is not merely an artefact of greater or lesser exposure to risk of childbearing.

The results in column 2 of table 62 show there are strong real differentials in likelihood of an unwanted birth for five variables of importance, as follows:

**1** Unwanted fertility is twice as likely among rural residents as among urban born urban residents (25 per cent versus 13 per cent), while rural born urban residents occupy a halfway position (19 per cent). This is perhaps of interest in terms of identifying groups easily targeted by communications media.

**2** As in Guyana, unwanted fertility varies strongly between respondents with and without a secondary education and weakly among individuals with less than a secondary education. It might seem that unwanted fertility should systematically decline with each increment in education,

Table 62 Indicators of unwanted fertility: Jamaica

	Per cent with unwanted fertility					AT ANY TIME IN THE PAST (Means adjusted for AGFU, MESFUB, A-sq., M-sq.)	Proportion of babies born 0-12 months before survey that were "unwanted"	
	0-36 MONTHS BEFORE THE INTERVIEW						Per cent	N
	Means adjusted for							
	Unad- -just -ed mean	AGFU, MESFUB, A-sq., M-sq.	AGFU, MESFUB, A-sq, M-sq: And All prior other vars. vars.		N			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
ALL JAMAICA	21.7	21.7	21.7	21.7	1931	44.7	41.4	353
RESIDENCE STATUS								
Resides in rural area	24.5	25.1	25.1	22.0	1042	48.9	42.2	185
Born rural, resides urban	20.0	19.6	19.6	22.2	634	42.8	44.4	117
Born urban, resides urban	14.1	12.8	12.8	19.1	255	33.2	31.4	51
PROB VALUE	0.001	0.000	0.000	0.610		0.000	0.272	NA
RELIGION								
Church of God	27.2	26.8	26.2	24.2	404	46.4	45.6	90
Anglican-Methodist	16.3	16.3	16.9	19.8	331	39.6	46.6	52
Catholic	15.4	14.6	18.1	21.0	162	35.9	39.3	28
Bapt-Morav-Other Protestant	22.3	22.9	22.3	22.3	888	47.9	43.0	151
No religion	21.2	19.9	19.7	15.3	146	42.1	40.6	32
PROB VALUE	0.002	0.001	0.025	0.179		0.026	0.513	NA
RESPONDENT'S EDUCATION								
0-5 years	23.1	25.9	24.6	21.4	268	54.8	63.6	33
6-7 years	27.7	28.5	27.8	24.6	437	54.3	48.2	85
Completed primary	23.1	22.3	22.0	20.4	811	46.0	45.5	154
Secondary or higher	11.6	10.4	12.6	21.1	415	24.3	17.3	81
PROB VALUE	0.000	0.000	0.000	0.388		0.000	0.000	NA
UNION STATUS								
Married	16.1	17.4	18.5	19.0	814	45.8	40.0	95
Common-law	26.7	25.4	23.8	22.9	689	46.5	43.2	146
Visiting	24.1	23.9	24.1	24.7	428	39.4	40.2	112
PROB VALUE	0.000	0.001	0.041	0.092		0.082	0.849	NA
R'S LATEST OCCUPATION								
Prof-Tech-Admin	5.5	5.9	10.5	15.0	164	25.2	8.0	25
Clerical-White Collar Sales	8.9	8.3	11.1	12.9	327	28.2	27.7	47
Services-Blue Collar Sales	25.9	25.6	24.0	23.0	731	52.1	50.7	138
Skilled or unskilled manual	24.4	23.6	24.2	23.6	270	47.8	40.0	55
Agricultural	23.0	26.3	23.5	21.9	152	52.7	60.0	15
Never worked	31.4	31.4	30.6	30.1	287	46.6	41.1	73
PROB VALUE	0.000	0.000	0.000	0.002		0.000	0.000	NA
WORKING NOW ?								
Now working	14.8	15.0	18.2	18.5	833	43.6	34.4	93
Not now working	26.9	26.7	24.3	24.1	1098	45.4	43.8	260
PROB VALUE	0.000	0.000	0.004	0.010		0.467	0.112	NA
WORKED BEFORE 1ST BIRTH ?								
Worked before 1st birth	18.2	19.1	21.3	22.0	997	42.1	39.1	179
Did not work before 1st	25.4	24.4	22.1	21.3	934	47.2	43.7	174
PROB VALUE	0.000	0.005	0.703	0.762		0.041	0.384	NA
WORKED AFTER 1ST BIRTH ?								
Worked after 1st birth	23.3	20.9	23.8	22.5	1342	44.6	43.1	232
Did not work after 1st	20.9	23.4	16.8	19.6	589	45.0	38.0	121
PROB VALUE	0.254	0.232	0.014	0.325		0.874	0.358	NA
HUSBAND/PARTNER'S EDUCATION								
0-5 years	26.2	29.0	25.0	23.5	229	53.5	40.5	37
6-7 years	25.7	26.5	23.0	22.4	269	53.5	51.2	41
Completed primary	23.8	23.5	22.1	22.1	1031	48.2	49.7	197
Secondary or higher	10.9	9.6	17.8	18.9	402	23.7	15.4	78
PROB VALUE	0.000	0.000	0.336	0.697		0.000	0.000	NA

Table 62, continued

	Per cent with unwanted fertility					AT ANY TIME IN THE PAST (Means adjusted for AGFU, MESFUB, A-sq., M-sq.)	Proportion of babies born 0-12 months before survey that were "unwanted"	
	0-36 MONTHS BEFORE THE INTERVIEW						Per cent	N
	Means adjusted for							
	Unad- -just -ed mean	AGFU, MESFUB, A-sq., M-sq.	AGFU, MESFUB, A-sq, M-sq: And All prior other vars. vars.		N			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
<b>HUSB/PARTNER'S OCCUPATION</b>								
Prof-tech-clerical	9.8	9.4	17.5	17.4	286	26.6	19.3	57
Sales or services	17.1	17.4	19.0	19.2	269	41.3	32.6	43
Agricultural	27.0	29.2	26.0	26.0	419	58.9	50.0	52
Skilled or unskilled manual	24.1	23.2	21.7	21.7	957	44.7	50.0	201
PROB VALUE	0.000	0.000	0.113	0.117		0.000	0.000	NA
<b>WILL CHILDREN CONTRIBUTE TO H/HOLD WHEN START WORK?</b>								
Expects no contribution	17.5	16.9	21.4	21.5	246	30.4	27.1	48
Yes, expects contribution	27.5	26.7	25.3	25.2	1146	43.9	43.6	280
Not asked	11.1	13.2	14.0	14.2	539	55.3	44.0	25
PROB VALUE	0.000	0.000	0.000	0.000		0.000	0.096	NA
<b>EXPECTED SOURCES OF MONEY SUPPORT IN OLD AGE</b>								
Children not mentioned	18.6	18.3	21.2	21.2	1064	39.6	40.9	186
Children mentioned (spont.)	25.4	25.7	22.2	22.2	861	50.3	41.8	165
Not asked	16.7	15.9	20.2	20.2	6	37.7	50.0	2
PROB VALUE	0.001	0.000	0.892	0.892		0.000	0.954	NA

The adjusted means are adjusted using MCA-style multiple regression as follows: All are adjusted for age at first union (AGFU), months elapsed since first union began (MESFUB), AGFU squared (A-sq.), and MESFUB squared (M-sq.). Means in column 3 are adjusted for all variables listed prior to the variable in question (e.g. union status in column 3 is adjusted for MESFUB, MESFUB-squared, AGFU, AGFU squared, and for residence status, religion, and respondent education.) Means in column 4 are adjusted for all other variables that are shown, including AGFU, AGFU-squared, MESFUB and MESFUB-squared.

but this is not what the data show. There is instead virtually no difference between respondents with 0-5 years' schooling, those with 6-7 years', and those with a completed primary education (completed primary corresponds to two pre-primary years in a basic school followed by six years of primary education).

**3** Unlike Guyana, unwanted fertility varies more by occupation than by education, both for respondent's and partner's occupation. Only 6-8 per cent of the women classified as professional or clerical had unwanted pregnancies in the 36 months prior to survey, compared with 24-31 per cent in the four other women's occupations.

The same is true of differentials by partner's occupation. Women with husbands or partners in agriculture were most likely to have had unwanted pregnancies (29 per cent), compared with 10 per cent among partners classified as professional, technical or clerical.

**4** The differential by union status showed legally married women as least likely (17 per cent) and common law and visiting women as about equally likely (24-25 per cent) to have had unwanted births.

**5** Female work status was also strongly associated with unwanted fertility (unlike Guyana). Respondents who had never worked were twice as likely as those currently working to have had unwanted pregnancies in the preceding three years (15 versus 30 per cent).

One other result of interest in column 2 is that of all the religious groups, Catholics had marginally lower unwanted fertility. Elsewhere we will see that this is not explained by higher fertility desires (the more children a woman wants, the harder it is to exceed the desired number). Instead, Jamaican Catholics have relatively low completed fertility (see table 74), an exceptionally low total fertility rate 0-2 years before survey of 3.1, as compared to a national TFR of 4.5, and somewhat higher proportions contracepting. The bivariate table 6, however, shows that Jamaican Catholics are an exceptionally well educated and exceptionally urban group; indeed, just inserting a prior control for place of residence causes the Catholic proportion with unwanted fertility to become slightly higher than the Anglican-Methodist proportion.

*Jamaica: Differentials adjusted for socio-economic composition*

We turn now to the figures in columns 3 and 4 of table 62, which show the differentials in unwanted fertility that remain between the categories of each variable after controls for socio-economic composition have been introduced (ie after adjusting for composition on other social variables). The interest here is in identifying whether the real world differentials observed in columns 1 and 2 are caused by differential composition on other social variables.

The results are somewhat unexpected. They indicate that unwanted fertility in Jamaica is more strongly linked with occupation of respondent and of respondent's partner than with any other variable. The marked differentials by education observed in column 2 narrow to both statistical and substantive non-significance in column 4, with prob values well above the 10 per cent level. The differential by woman's occupation, on the other hand, remains highly significant ( $p = 0.002$ ), while that by husband's occupation is almost significant at the 90 per cent level ( $p = 0.117$ ).

This strong association of unwanted childbearing with occupation rather than education when all variables are controlled for is quite at variance with the association observed in Guyana, where education is the dominant variable affecting proportions unwanted. Looking at the bivariate association between woman's occupation and woman's education in table 6 (see rows 16–21, columns 9–12), we find that the P–T–A group (ie professional, etc) is 78 per cent secondary, while the clerical–white-collar sales group is split more evenly, being 45 per cent secondary, 41 per cent primary and 14 per cent less than primary.

To further investigate the unexpected unimportance of education as an explanatory factor, we tabulated proportions with unwanted last births by education and occupation (table 63).

The results in table 63 indeed suggest that female occupation rather than female education is the dominant factor operating in Jamaica. Especially noteworthy is the high proportion with unwanted fertility among secondary educated women who have never worked. But it must be borne in mind that, unlike Guyana, the Jamaican data on education make no distinction between completed and incomplete secondary, and it was Guyanese women with

completed secondary whose unwanted fertility was distinguishably lower. However, an effect for education would have appeared for Guyana even had we pooled the incomplete and completed secondary groups.

Two other variables retain statistical significance above the 90 per cent level in column 4 of table 62. One of these is whether respondent had a job at time of interview, and this indicates that working women were, *ceteris paribus*, less likely to have had unwanted pregnancies during the 36 months before survey. When allied with the fact of much higher contraceptive use among currently employed Jamaican women (see table 74), this finding supports the hypothesis that women avoid pregnancy in order to work, and undermines the counterhypothesis that women work because of impaired fecundity. Of course, the two competing hypotheses are not mutually incompatible, and it is reasonable to assume that women who are subfecund are more likely than others to start work and, once started, to continue.

The other variable that retains statistical significance above the 90 per cent level in column 4 is union status. With all other variables controlled for, legally married women were slightly less likely to have unwanted pregnancies (19 per cent) than women in visiting and common law unions (23–25 per cent) ( $p < 0.10$ ). One possible explanation for this is that married women are probably economically better off than their unmarried counterparts. Jamaican couples have long fascinated social scientists with their unusual pattern of not avoiding childbearing while at the same time refraining from legal marriage until they feel economically secure (Clarke 1966 and Blake 1961). Another possible, though not mutually exclusive explanation is that married women are less likely to have had children for previous partners and are hence under less pressure to have children their current spouse wants but that they themselves do not particularly want. A third possible explanation is that married women know their partners better, and hence contracept more effectively. In any event, the difference in unwanted childbearing between married and unmarried women is, while statistically significant, substantively quite small.

The major conclusion that emerges from this multivariate analysis of unwanted childbearing is that, at the real world level of unadjusted differentials, the likelihood of having an unwanted birth in the 1973–5 period was

**Table 63** Percentages with unwanted birth or current pregnancy 0–36 months before survey by education and occupation: Jamaica

Woman's current or last occupation	Respondent education			
	0–5 yr	6–7 yr	Completed primary	Secondary
Prof–tech–admin	0 (5)	0 (2)	13 (32)	4 (125)
Clerical–w-c sales	9 (11)	20 (35)	8 (136)	7 (145)
Services–b-c sales	22 (138)	28 (224)	28 (319)	14 (50)
Skilled/unsks. manual	33 (33)	25 (57)	23 (141)	23 (39)
Agriculture	22 (51)	23 (47)	26 (51)	0 (3)
Never worked	30 (30)	38 (72)	28 (132)	32 (53)
Prob value	0.343	0.311	0.001	0.000

NOTE: Bracketed numbers are denominators.

strongly associated with education, occupation, work status and place of residence. At the deeper level of underlying causality, the analysis indicates that when four demographic and 12 socio-economic variables are controlled for, it is occupation rather than education that is most important in explaining unwanted fertility.

### Trinidad and Tobago: Socio-economic differences in unwanted childbearing

Columns 1-4 of table 64 present information on relative likelihood of having a birth or pregnancy that exceeded desired family size in the 1974-7 period for various social groups. The overall percentage with excess births of 6 per cent in the total sample is quite low, but probably translates to about 10 per cent with unwanted births, given the inherent downward bias of the data. The averages for different social groups in column 1 are not adjusted for age composition, and are hence of less interest than those in column 2.

The averages in column 2 reveal, for the most part, relatively weak differentials, though they are statistically significant at the 90 per cent level or better for eight of the eleven variables considered. Unlike Guyana and Jamaica, the percentages with unwanted births or current pregnancies decrease with each increment in woman's education; instead of remaining the same between the least educated

and the primary educated, the averages for Trinidad and Tobago women follow the progression 11, 8, 5, 4, 3 with each step along the educational continuum from 0-6 years' education to completed secondary. The decrease by husband's education is slightly less linear, but is similar in direction.

There are also relatively large differentials by both woman's occupation and husband's occupation between those in agriculture and those in other categories, and small but statistically significant differentials by residence status, union status and whether working at time of survey.

The means adjusted for composition by age and by all other socio-economic variables using the regression approach described in chapter 2 are shown in column 4. Of eight variables which had statistically significant differences when age was controlled for, four retain statistical significance in column 4, namely woman's education, husband or partner's education, woman's occupation and whether respondent held a job at time of interview. This outcome indicates that these four variables are important underlying determinants of whether or not women have unwanted births, and implies that continuing progress in improving the level of education is likely to diminish the level of unwanted fertility in the long run. In the short run, however, it remains true that women with less education are significantly more likely to have unwanted births.

Table 64 Indicators of unwanted fertility: Trinidad-Tobago

	Per cent with unwanted birth/pregnancy*					AT ANY TIME IN THE PAST (Means adjusted for Age, age squared)	Percentage of current pregnancies that are "unwanted"	
	0-36 MONTHS BEFORE THE INTERVIEW						Per cent	N
	Means adjusted for							
	Unad- just- -ed mean	Age, age squared	Age, age squared:					
		And prior vars.	All other vars.	N				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ALL TRINIDAD AND TOBAGO	6.44	6.44	6.44	6.44	3041	20.3	23.3	228
RESIDENCE STATUS								
Born rural, resides rural	8.82	8.56	8.56	7.37	952	25.9	22.9	81
Born rural, resides urban	5.99	5.90	5.90	6.17	921	19.1	25.8	68
Born urban, resides rural	6.66	6.60	6.60	6.17	270	19.4	38.2	18
Born urban, resides urban	4.32	4.70	4.70	5.81	898	16.0	16.6	61
PROB VALUE	0.001	0.006	0.006	0.618		0.000	0.170	
ETHNICITY								
Non-Indian	5.92	7.13	6.58	7.46	1779	18.3	19.2	110
Indian	7.18	5.95	6.24	5.00	1261	23.2	27.7	118
PROB VALUE	0.162	0.186	0.718	0.088		0.000	0.091	
RELIGION								
Catholic	5.96	5.93	6.30	6.28	1064	17.6	18.2	84
Protestant Christian	5.56	5.66	5.79	5.95	1051	19.8	21.8	61
Hindu	8.23	8.06	7.21	7.06	731	25.2	33.2	63
Muslim	7.07	7.39	7.83	7.66	194	19.9	17.6	19
PROB VALUE	0.124	0.163	0.415	0.857		0.000	0.099	

Table 64, continued

	Per cent with unwanted birth/pregnancy <sup>a</sup>					Percentage of current pregnancies that are "unwanted"		
	0-36 MONTHS BEFORE THE INTERVIEW					AT ANY TIME IN THE PAST		
	Means adjusted for					(Means adjusted for		
	Unad-just-ed mean	Age, age squared	Age, age squared:		N	Age, age squared)	Per cent	N
And prior vars.			All other vars.					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
<b>RESPONDENT'S EDUCATION</b>								
0-6 years	12.04	11.29	11.20	9.63	562	31.3	39.4	32
7-8 years	8.88	8.13	7.99	7.37	635	25.0	27.0	37
Completed primary	5.05	5.03	4.99	5.13	865	18.3	26.4	65
Some secondary	4.10	4.29	4.48	4.99	522	17.0	15.9	55
Completed secondary	1.46	3.23	3.41	5.35	456	8.0	12.0	39
PROB VALUE	0.000	0.000	0.000	0.051		0.000	0.031	
<b>UNION STATUS</b>								
Married	6.70	6.46	6.52	6.53	1840	20.4	22.3	136
Common-law	9.72	8.50	8.00	7.28	539	24.7	27.4	54
Visiting	3.03	4.69	4.95	5.49	661	16.6	20.7	38
PROB VALUE	0.000	0.030	0.112	0.485		0.001	0.649	
<b>R'S LATEST OCCUPATION</b>								
Prof-tech-admin-clerical	0.88	2.26	3.57	5.15	549	6.2	8.1	39
Sales and services	6.91	6.31	6.27	6.72	687	23.0	23.8	50
Skilled crafts	4.43	4.10	4.78	6.00	237	15.9	20.3	15
Agric. + unskilled manual	14.72	13.40	11.95	11.85	225	34.6	22.3	16
Never worked	7.44	7.46	7.07	5.99	1342	23.1	28.9	109
PROB VALUE	0.000	0.000	0.003	0.038		0.000	0.101	
<b>WORKING NOW ?</b>								
Now working	8.20	8.05	3.47	3.47	1054	14.4	14.2	56
Not now working	3.12	3.39	8.01	8.02	1986	23.5	26.2	172
PROB VALUE	0.000	0.000	0.000	0.000		0.000	0.041	
<b>WORKED BEFORE 1ST BIRTH ?</b>								
Worked before 1st birth	8.00	7.13	6.57	6.60	1366	15.1	15.9	95
Did not work before 1st	4.53	5.59	6.34	6.31	1674	24.6	28.5	133
PROB VALUE	0.000	0.100	0.830	0.790		0.000	0.003	
<b>WORKED AFTER 1ST BIRTH ?</b>								
Worked after 1st birth	5.77	6.73	6.83	6.90	1310	20.4	19.6	70
Did not work after 1st	7.33	6.05	6.14	6.09	1730	20.3	24.9	159
PROB VALUE	0.082	0.455	0.673	0.623		0.938	0.361	
<b>HUSBAND/PARTNER'S EDUCATION</b>								
0-6 years	13.02	11.87	9.65	9.27	452	30.8	55.4	21
7-8 years	6.94	6.29	4.65	4.32	495	23.6	28.8	40
Completed primary	6.28	6.07	5.96	5.88	1096	21.8	19.4	79
Incomplete secondary	4.63	4.94	6.31	6.47	459	13.3	20.7	39
Completed secondary	2.33	4.05	6.48	7.14	538	11.6	13.4	49
PROB VALUE	0.000	0.000	0.032	0.032		0.000	0.000	
<b>HUSB/PARTNER'S OCCUPATION</b>								
Prof-tech-admin-clerical	2.73	3.64	5.09	5.09	662	12.2	13.0	43
Sales or services	5.00	5.16	5.93	5.93	519	17.3	21.2	39
Agricultural	11.40	10.57	7.82	7.82	275	28.5	30.9	23
Skilled + unskilled manual	7.55	7.27	6.93	6.93	1584	23.2	26.1	123
PROB VALUE	0.000	0.000	0.462	0.462		0.000	0.192	

<sup>a</sup> Unwantedness here is found usually by contrast between actual family size and desired family size. (There were 302 women pregnant at time of survey.)

The adjusted means are adjusted using MCA-style multiple regression as follows: All are adjusted for age and age squared. Means in column 3 are adjusted for all variables listed prior to the variable in question (e.g. union status in column 3 is adjusted for age, age squared, and for residence status, religion, and respondent education). Means in column 4 are adjusted for all other variables that are shown, including age, age squared.



### Conclusions to section on unwanted fertility

Several conclusions emerge from the discussion above, both methodological and substantive. While there are reservations about the 'unwanted fertility' variable in the sense that no thorough evaluations of its validity or reliability have yet been reported from the post-enumeration surveys, there are strong differentials both by number of living children (shown earlier) and between socio-economic categories which can increase our confidence in it.

On the substantive side, the narrowing differentials implied in the comparison between recent and lifetime unwanted fertility indicate increasing success in fertility control, which is consistent with the fertility declines that have been documented in the First Country Reports and elsewhere for Guyana, Jamaica and Trinidad and Tobago. These proportions vary systematically by education, female work status, occupation and place of residence, and indicate much lower likelihood of 'unwanted' pregnancy among some groups than others.

### 5.2 THE GAP BETWEEN ACTUAL AND WANTED FERTILITY AMONG SUBGROUPS

As mentioned in the introduction of this chapter, the definitions of the 'wanted total fertility rate' and total fertility rate are detailed in chapter 4. We recall that the definition 1 version of the wanted TFR considers all births in excess of desired family size as unwanted, as well as all last births which were unwanted; the definition 2 version is more conservative and only considers births in excess of desired family size as unwanted, ignoring information on whether the last birth was wanted. We compare these wanted TFR estimates with the actual TFR in order to analyse the difference in achieving preferred fertility levels among the different socio-economic subgroups. We focus on the minimum definition 1 estimate because, as a measure of current wanted fertility, it is more appropriate.

#### Guyana: Gap between actual and wanted fertility

Table 65 presents estimates of actual and wanted TFRs for various social groups, showing the aggregate number of person years on which each TFR is based in column 4, in order to provide some rough indication of how much relative credence to give to the results for any particular socio-economic category. The following conclusions may be drawn from the table:

1 The gap between actual and wanted fertility, shown in column 3, is narrowest among women whom, for lack of a better term, we will call 'traditionally middle class', and is widest among 'working class' women. By woman's education, the gap between wanted and actual narrows steadily with increasing schooling, from 2.8 unwanted births among the least educated to 0.7 births among the most educated. By husband's occupation, the gap is largest for women with husbands in agriculture (2.3 births) and smallest for those with husbands in the professional,

technical, administrative and clerical group (0.9 unwanted births).

2 In a sense, the wanted TFR estimates the number of births preferred. If viewed in this light, the results in column 2 imply relatively little variation in number of births preferred between rural and urban women, and a full 0.6 birth difference between non-Indian and Indian respondents, which is consistent with results reported for other estimators of desired family size (see chapter 3). The results also imply that if unwanted births were avoided, the secondary educated women would have no fewer births than those with less schooling. Indeed, women with 0-5 and 6-7 years in school, and those with completed primary education, appear to want about 3/10-6/10 of a birth less than women with completed secondary education.

3 The pattern of wanted TFRs by union status indicates that common law women want 5/10 of a birth more than legally married women and shows visiting women wanting 8/10 of a birth less than the married group. It is interesting that in this case actual and wanted TFR are directly related to one another, with common law women having a remarkably high actual TFR of 6.1 births, though this last result is based on a rather slender aggregate denominator.

4 The pattern by female labour force participation is of particular interest, suggesting that women holding a job at time of interview wanted 4/10 of a birth less than the national average.

The overall conclusion suggested by the above analysis is that if women were to successfully avoid unwanted births in Guyana, there would be some reduction in fertility differentials between many of the socio-economic groups, and that children of more highly educated parents would increase as a proportion of all children.

#### Jamaica: Gap between actual and wanted fertility

The gap between actual and wanted TFR, shown in column 3 of table 66, can be interpreted as the number of unwanted births that women would have over a lifetime if conditions prevailing in 1974-5 were to continue. Examination of column 3 indicates considerable variation between Jamaican social groups in amount of unwanted fertility. While the denominators are all too often on the small side (see column 4) - which means that the estimates are subject to a good deal of sampling variation - the following conclusions seem reasonable:

1 The 'unwanted birth rate' (measured in column 3) not only varies substantially within each social variable, but varies in the expected direction. The variables with the greatest differentials in unwanted births are woman's occupation, woman's education, husband's education and husband's occupation.

Women in the professional and technical and administrative category have fewer unwanted births (0.6) than any other group in the table, and women classified as 'clerical and white-collar sales' also have relatively few (1.2). Women in the numerically sizable 'services-blue-collar' sales category, on the other hand, have a relatively large number of unwanted births (2.6), well above the national average of 2.1.

The differentials by husband/partner's occupation are somewhat smaller though two groups stand out as exceeding the national average of 2.1 unwanted births, namely women with husbands classified as 'agricultural' (2.8 unwanted) and women with husbands in the numerically dominant 'skilled and unskilled manual' category (2.3).

By respondents' education, the number of births unwanted is dramatically lower among women classified

as secondary (including incomplete secondary), who have 0.9 unwanted, but there is relatively negligible variation between women with 0-5 years' schooling (2.7 unwanted births), those with 6-7 years' (2.9) and those with a completed eight-year primary education (2.2).

The differentials by partner's education, on the other hand, show more sign of the expected linear relationship between number of unwanted births and amount of schooling, in a progression that runs 3.3, 2.4, 2.3 and 0.7

Table 65 Actual total fertility rates and wanted fertility rates for 0-24 months before the survey by socio-economic categories: Guyana

	TOTAL FERTILITY RATE (TFR) ESTIMATES					
	All births TFR	Wanted TFR defn.1	Gap 1 = (1-2)	Wanted TFR defn.2	Gap 2 = (1-4)	N of cases
	(1)	(2)	(3)	(4)	(5)	(6)
ALL GUYANA	4.37	2.69	1.68	3.66	.71	4898
RESIDENCE STATUS						
Rural born, resides rural	4.54	2.72	1.82	3.81	.73	3196
Rural born, resides urban	4.25	2.77	1.48	3.60	.65	816
Urban born, resides urban	3.98	2.64	1.34	3.39	.59	882
ETHNICITY						
Non-Indian	4.86	3.08	1.78	4.07	.79	2204
Indian	4.08	2.44	1.64	3.44	.64	2694
RELIGION						
Catholic	4.57	2.99	1.58	3.88	.69	603
Other Christian	4.77	3.08	1.69	3.99	.78	1880
Hindu	4.08	2.34	1.74	3.37	.71	1830
Muslim	4.13	2.55	1.58	3.55	.58	515
RESPONDENT'S EDUCATION						
0-5 years	4.85	2.19	2.66	3.95	.90	678
6-7 years	4.27	2.46	1.81	3.49	.78	927
Completed primary	4.18	2.57	1.61	3.36	.82	896
Incomplete secondary	4.73	3.20	1.53	4.40	.33	1436
Completed secondary	3.70	2.88	.82	3.22	.48	961
UNION STATUS						
Married	4.57	2.90	1.67	3.89	.68	3001
Common-law	6.12	3.38	2.74	4.84	1.28	441
Visiting	3.41	2.05	1.36	3.04	.37	472
R's LATEST OCCUPATION						
Prof-clerical-shop assistant	3.87	2.86	1.01	3.35	.52	609
Services-street vendors	4.81	2.88	1.93	3.87	.94	836
Skilled-unskilled manual	3.98	2.50	1.48	3.28	.70	304
Agriculture	5.25	2.50	2.75	4.26	.99	321
Never worked	4.17	2.49	1.68	3.50	.67	1531
WORKING NOW ?						
Now working	3.60	2.31	1.29	3.05	.55	1127
Not now working	4.66	2.80	1.86	3.87	.79	3511
WORKED BEFORE 1ST BIRTH ?						
Worked before 1st birth	4.44	2.96	1.48	3.82	.62	1380
Did not work before 1st	4.33	2.52	1.81	3.58	.75	3442
WORKED AFTER 1ST BIRTH ?						
Worked after 1st birth	4.77	2.95	1.82	3.94	.83	1496
Did not work after 1st	4.09	2.55	1.54	3.49	.60	3146
HUSBAND/PARTNER'S EDUCATION						
0-5 years	4.40	2.51	1.89	3.72	.68	726
6-7 years	4.37	2.17	2.20	3.48	.89	673
Completed primary	4.67	2.95	1.72	3.83	.84	996
Incomplete secondary	4.53	2.78	1.75	3.82	.71	635
Completed secondary	3.70	3.04	.66	3.45	.25	586
HUSB/PARTNER'S OCCUPATION						
Prof-tech-admin-clerical	3.68	2.75	.93	3.43	.25	569
Services-sales	4.31	2.84	1.47	3.57	.74	633
Agriculture	4.74	2.45	2.29	3.79	.95	770
Skilled-unskilled manual	4.55	2.76	1.79	3.79	.76	1587

unwanted births as education increases from 0-5 years to secondary.

By residence status, the results show that rural residents have the most unwanted births (2.4), followed by rural born urban residents (1.9), followed by urban born urban residents (1.6).

By religion, Catholics and Anglicans-Methodists have the fewest unwanted births (1.5 and 1.4 respectively) and Church of God members the most (2.9).

Current work status is also strongly associated with level of unwanted childbearing. Women who had never worked had one of the highest levels, 3.0 unwanted births,

Table 66 Actual total fertility rates and wanted fertility rates for 0-24 months before the survey by socio-economic categories: Jamaica

	TOTAL FERTILITY RATE (TFR) ESTIMATES					N of cases
	All births TFR	Wanted TFR defn.1	Gap 1 = (1-2)	Wanted TFR defn.2	Gap 2 = (1-4)	
	(1)	(2)	(3)	(4)	(5)	
ALL JAMAICA	4.39	2.28	2.11	3.40	.99	3615
RESIDENCE STATUS						
Resides in rural area	4.99	2.58	2.41	3.97	1.02	1820
Born rural, resides urban	3.84	1.94	1.90	2.89	.95	1167
Born urban, resides urban	3.45	1.83	1.62	2.42	1.03	605
RELIGION						
Church of God	5.30	2.38	2.92	4.05	1.25	729
Anglican-Methodist	3.55	2.09	1.46	2.89	.66	645
Catholic	3.03	1.58	1.45	2.04	.99	367
Bapt-Morav-Other Protestant	4.58	2.43	2.15	3.59	.99	1610
No religion	4.39	2.28	2.11	3.42	.97	264
RESPONDENT'S EDUCATION						
0-5 years	4.65	1.97	2.68	3.65	1.00	395
6-7 years	5.41	2.55	2.86	4.01	1.40	645
Completed primary	4.51	2.32	2.19	3.45	1.06	1268
Secondary or higher	3.03	2.13	.90	2.74	.29	1296
UNION STATUS						
Married	4.67	3.04	1.63	3.86	.81	883
Common-law	5.12	2.49	2.63	3.63	1.49	789
Visiting	4.49	2.28	2.21	3.52	.97	614
R'S LATEST OCCUPATION						
Prof-Tech-Admin	3.03	2.44	.59	2.78	.25	220
Clerical-White Collar Sales	3.10	1.88	1.22	2.38	.72	465
Services-Blue Collar Sales	4.63	2.06	2.57	3.53	1.10	1047
Skilled or unskilled manual	5.05	2.50	2.55	3.68	1.37	400
Agricultural	5.25	3.09	2.16	3.95	1.30	184
Never worked	5.33	2.34	2.99	4.04	1.29	422
WORKING NOW ?						
Now working	2.88	1.54	1.34	2.32	.56	1188
Not now working	5.44	2.65	2.79	4.08	1.36	1908
WORKED BEFORE 1ST BIRTH ?						
Worked before 1st birth	4.24	2.37	1.87	3.35	.89	1427
Did not work before 1st	4.49	2.12	2.37	3.41	1.08	1669
WORKED AFTER 1ST BIRTH ?						
Worked after 1st birth	4.58	2.42	2.16	3.58	1.00	1848
Did not work after 1st	4.24	2.10	2.14	3.24	1.00	1248
HUSBAND/PARTNER'S EDUCATION						
0-5 years	6.25	2.96	3.29	4.08	2.17	276
6-7 years	4.47	2.07	2.40	3.88	.59	323
Completed primary	4.58	2.28	2.30	3.58	1.00	1356
Secondary or higher	2.90	2.17	.73	2.56	.34	574
HUSB/PARTNER'S OCCUPATION						
Prof-tech-clerical	3.49	2.47	1.02	2.91	.58	394
Sales or services	3.52	1.95	1.57	2.91	.61	381
Agricultural	5.46	2.70	2.76	4.43	1.03	526
Skilled or unskilled manual	4.55	2.10	2.45	3.35	1.20	1306
WILL CHILDREN CONTRIBUTE TO H/HOLD WHEN START WORK? *a						
Expects no contribution	4.60	3.00	1.60	3.54	1.06	285
Yes, expects contribution	5.88	3.01	2.87	4.58	1.30	1291
EXPECTED SOURCES OF MONEY SUPPORT IN OLD AGE *b						
Children not mentioned	4.33	2.37	1.96	3.54	0.79	1288
Children mentioned (spont.)	5.40	2.81	2.59	4.06	1.34	982

while those working at time of survey had a relatively low level, 1.3, which compares with 2.8 unwanted among those 'not now working'. Working before the first birth is also associated with lower unwanted childbearing, with 1.9 unwanted births among women who did work before the first versus 2.4 among respondents who did not. Working after the first birth makes no difference, however, and unwanted fertility is the same among women who did and those who did not.

2 The pattern of unwanted fertility by union status is particularly interesting. Common law women have the highest number of unwanted births (2.6), visiting women the next highest (2.2), while married women the lowest number unwanted (1.6). The remarkable feature of these results is that the TFRs of married and visiting women are very similar (4.7 and 4.5 respectively), while common law women have a higher TFR of 5.1, so that the relatively low unwanted fertility of the married women is purely a consequence of their having a much higher wanted TFR of 3.0, 5/10 of a child higher than women in common law unions and 7/10 of a birth more than women in visiting unions.

The age-specific pattern in table 67, however, indicates that the difference is largely due to much higher wanted rates among married women at ages 15-19, with slightly higher wanted rates at some older ages.

#### Trinidad and Tobago: Gap between actual and wanted fertility

Table 68 presents estimates of actual and wanted total fertility rates for socio-economic groups. The results suggest the following conclusions:

1 As with both Guyana and Jamaica, the gap between wanted and actual fertility has a strong inverse association with education and occupational status. The gap by woman's education implies 1.2 unwanted births over a lifetime among the least educated women, as against only 2/10 of a birth among women with a completed secondary education. The figures by husband's education are very similar.

**Table 67** Unscaled<sup>1</sup> wanted fertility rates by union status: Jamaica

Status	15	20	25	30	35	40	45
<b>A Married</b>							
Rates	416	241	120	61	38	15	0
Person months	346	2392	3502	3725	4063	4110	2990
<b>B Common law</b>							
Rates	326	234	86	43	21	8	0
Person months	2320	4470	4195	2821	2263	1568	1088
<b>C Visiting</b>							
Rates	209	162	122	90	0	19	0
Person months	4477	4153	1776	1072	1076	632	430

<sup>1</sup> ie before use of the uniform proportions ever in union to adjust these wanted fertility rates downwards.

By husband's occupation, the gap is widest for the numerically small agricultural group (1.2 births unwanted), still relatively wide for the numerically large 'skilled-unskilled manual' category (8/10 births unwanted), and much narrower for the professional - technical - administrative category (3/10 of an unwanted birth). The gap is also associated with female work status. Those holding jobs at time of survey would have 0.4 unwanted births over a lifetime compared to 1.0 among those who were jobless.

2 If looked on as an estimate of the desired number of births, the TFR in column 2 of table 68 suggests that, unlike Guyanese and Jamaican women, Trinidad and Tobago women of higher social status as measured by education and occupation have somewhat lower fertility desires. Wanted TFRs are 2.2 for women with a completed secondary education as against 2.6 for those with 0-6 years' education. The association between magnitude of wanted TFR and current work status is quite strong, with a wanted TFR of 2.5 among women who had never worked compared with one of 1.9 among women in jobs at time of survey.

3 By union status, both wanted and actual TFRs are, like Guyana (but unlike Jamaica), substantially higher among common law women than among legally married ones. Women in visiting unions, on the other hand, have both low actual TFR (1.9) and low wanted TFR (1.5).

The chief conclusion from the results discussed above is that there are several quite numerically large groups in Trinidad and Tobago with a substantial gap between actual and wanted TFRs; this is in sharp contrast to the results for mean desired family size, where there is astonishing uniformity between the social groups.

#### 5.3 PREFERENCES AND CONTRACEPTION AMONG SUBGROUPS

This chapter has thus far shown that there is substantial socio-economic variation in total fertility rates and in the likelihood of unwanted fertility. In this section we will examine socio-economic variation in proportions contracepting for stopping and postponing purposes, and will use a multiple classification analysis in an effort to identify the principal social variables associated with the observed differentials.

Slightly unusual definitions of 'wanting more' and 'not wanting more' children are used here because of the need to correctly classify the subset of pregnant women who said they did not want any additional children after the current pregnancy came to term but who at the same time reported that they wanted the current pregnancy. This subset of respondents should evidently be classified as wanting more children at the time of the interview since they had a wanted current pregnancy. By the same logic, the group who do not want additional children excludes all pregnant women who wanted the current pregnancy.

We now examine differentials in contraceptive prevalence for spacing or stopping purposes among socio-

economic subgroups. The analysis is carried out for currently in union, fecund women, who were the only ones asked about wanting more children, and the age range is 15-39, since these are the women most at risk of pregnancy.

### Guyana: Contraceptive use and preferences

*Guyana: use among women who want more*

The overall proportion using contraception among all women who want more children is 26 per cent. Columns

Table 68 Actual total fertility rates and wanted fertility rates for 0-24 months before the survey by socio-economic categories: Trinidad-Tobago

	TOTAL FERTILITY RATE (TFR) ESTIMATES					
	All births TFR	Wanted TFR defn.1	Gap 1 = (1-2)	Wanted TFR defn.2	Gap 2 = (1-4)	N of cases
	(1)	(2)	(3)	(4)	(5)	(6)
ALL TRINIDAD AND TOBAGO	3.13	2.42	.71	2.46	.67	4981
RESIDENCE STATUS						
Born rural, resides rural	3.46	2.63	.83	2.66	.80	1548
Born rural, resides urban	3.02	2.28	.74	2.32	.70	1441
Born urban, resides rural	3.79	3.00	.79	3.03	.76	413
Born urban, resides urban	2.70	2.19	.51	2.25	.45	1572
ETHNICITY						
Non-Indian	3.09	2.41	.68	2.45	.64	2924
Indian	3.24	2.47	.77	2.52	.72	2057
RELIGION						
Catholic	3.14	2.46	.68	2.52	.62	1714
Protestant Christian	2.99	2.41	.58	2.41	.58	1753
Hindu	3.33	2.45	.88	2.51	.82	1184
Muslim	3.18	2.34	.84	2.45	.73	290
RESPONDENT'S EDUCATION						
0-6 years	3.78	2.55	1.23	2.55	1.23	675
7-8 years	3.48	2.48	1.00	2.61	.87	875
Completed primary	3.10	2.69	.41	2.71	.39	1281
Some secondary	3.02	2.51	.51	2.53	.49	734
Completed secondary	2.46	2.23	.23	2.25	.21	1417
UNION STATUS						
Married	3.57	2.86	.71	2.90	.67	1880
Common-law	4.20	3.06	1.14	3.10	1.10	546
Visiting	1.89	1.50	.39	1.58	.31	686
R's LATEST OCCUPATION						
Prof-tech-admin-clerical	2.90	2.68	.22	2.68	.22	259
Sales and services	2.53	2.21	.32	2.22	.31	702
Skilled crafts	3.30	2.42	.88	2.47	.83	754
Agric. + unskilled manual	2.79	2.37	.42	2.39	.40	438
Never worked	3.55	2.53	1.02	2.60	.95	1329
WORKING NOW ?						
Now working	2.22	1.87	.35	1.91	.31	1275
Not now working	3.67	2.72	.95	2.76	.91	3084
WORKED BEFORE 1ST BIRTH ?						
Worked before 1st birth	3.01	2.44	.57	2.47	.54	1603
Did not work before 1st	3.28	2.43	.85	2.49	.79	2756
WORKED AFTER 1ST BIRTH ?						
Worked after 1st birth	3.68	2.98	.70	3.02	.66	1530
Did not work after 1st	2.86	2.12	.74	2.17	.69	2829
HUSBAND/PARTNER'S EDUCATION						
0-6 years	3.68	2.25	1.43	2.28	1.40	532
7-8 years	3.80	3.01	.79	3.11	.69	552
Completed primary	3.01	2.40	.61	2.42	.59	1234
Incomplete secondary	2.99	2.53	.46	2.60	.39	539
Completed secondary	2.51	2.25	.26	2.26	.25	625
HUSB/PARTNER'S OCCUPATION						
Prof-tech-admin-clerical	2.42	2.15	.27	2.16	.26	738
Sales or services	2.71	2.17	.54	2.25	.46	605
Agricultural	4.12	2.96	1.16	3.05	1.07	307
Skilled + unskilled manual	3.42	2.53	.89	2.57	.85	1803

1-4 of table 69 reveal substantial deviations from this overall average at all levels of statistical control.

The differentials adjusted for demographic composition only (ie parity, parity squared, age, age squared) in column 2 are of special interest. They indicate much higher use by women with completed secondary education (49 per cent) and much lower by women with less education (13-25 per cent). As we might expect, work status is positively associated with contraception among women who want more children, with 37 per cent using among employed women compared to 22 per cent among jobless women. Occupational differentials are stronger. Looking first at woman's occupation, there is a wide gulf between women in the professional-clerical-shop assistant category (43 per cent using) and those in the numerically large services-street vendors categories (18 per cent using).

Similarly, by husband's occupation, use varies substantially, from 14 per cent among farmers and farm labourers to 23-28 per cent in the manual and sales-services categories, rising to 40 per cent in the P-T-A-C category.

Column 4 shows the percentages using contraception after both demographic composition and composition on other socio-economic variables have been controlled for, and indicates that strong differentials still persist by residence, respondent's education and husband's educational level. In sharp contrast to the differentials by desired family size, there is no apparent difference in contraception for spacing purposes once all variables are controlled for, though at lesser stages of adjustment in columns 1-3 it is non-Indians who have higher proportions using for spacing purposes, perhaps reflecting their tendency to be more urban and more educated.

Table 69 Adjusted and unadjusted percentages using contraception among currently in union and fecund women aged 15-39 who want and do not want additional children: Guyana

	WOMEN WHO WANT MORE CHILDREN					WOMEN WHO WANT NO MORE CHILDREN				
	Unad-just- ed perc- -ent- -ages	Percentages using, adjusted for:				Unad-just- ed perc- -ent- -ages	Percentages using, adjusted for:			
		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
ALL GUYANA	26.2	26.2	26.2	26.2	1290	41.0	41.0	41.0	41.0	1138
RESIDENCE STATUS										
Rural born, resides rural	20.2	19.8	19.8	22.7	764	40.4	39.7	39.7	39.3	822
Rural born, resides urban	31.4	31.3	31.3	28.5	274	43.3	42.5	42.5	44.1	171
Urban born, resides urban	38.9	39.9	39.9	34.1	252	42.1	47.0	47.0	47.5	145
PROB VALUE	0.000	0.000	0.000	0.004		0.756	0.225	0.225	0.202	
ETHNICITY										
Non-Indian	30.0	30.2	27.1	24.7	670	34.4	35.8	33.0	34.6	378
Indian	22.1	21.9	25.3	27.8	620	44.3	43.7	45.1	44.3	760
PROB VALUE	0.001	0.001	0.492	0.493		0.001	0.009	0.000	0.115	
RELIGION										
Catholic	33.7	34.1	29.5	27.9	193	37.3	39.5	38.9	37.1	110
Other Christian	28.6	28.3	26.8	26.3	570	34.9	35.9	38.3	36.4	341
Hindu	19.8	20.1	23.7	25.6	400	43.6	42.8	41.8	43.6	541
Muslim	24.4	24.3	26.2	25.0	127	48.6	47.5	46.2	45.3	146
PROB VALUE	0.001	0.001	0.716	0.959		0.012	0.059	0.671	0.605	
RESPONDENT'S EDUCATION										
0-5 years	19.6	16.6	19.4	26.0	102	37.9	34.8	32.1	35.5	240
6-7 years	16.3	13.2	15.0	19.9	202	45.3	42.4	41.0	42.4	362
Completed primary	28.9	25.0	25.2	27.7	235	42.6	36.8	39.9	38.0	249
Incomplete secondary	19.0	21.7	21.2	21.1	483	32.8	45.3	46.2	44.5	238
Completed secondary	46.6	48.8	47.2	39.0	268	57.1	62.4	65.6	56.4	49
PROB VALUE	0.000	0.000	0.000	0.000		0.003	0.002	0.000	0.064	
UNION STATUS										
Married	26.7	25.6	26.3	26.0	858	44.4	43.3	42.3	42.1	877
Common-law	11.3	10.1	13.3	16.0	160	30.9	30.6	33.7	34.7	149
Visiting	33.5	37.5	33.5	33.0	272	28.6	37.6	40.9	41.0	112
PROB VALUE	0.000	0.000	0.000	0.001		0.000	0.008	0.148	0.248	

Table 69, continued

	WOMEN WHO WANT MORE CHILDREN					WOMEN WHO WANT NO MORE CHILDREN				
	Unad-just- -ed perc- -ent -ages	Percentages using, adjusted for:				Unad-just- -ed perc- -ent -ages	Percentages using, adjusted for:			
		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
<b>R'S LATEST OCCUPATION</b>										
Prof-clerical-shop assistant	41.8	42.8	32.0	24.7	304	48.4	51.2	49.2	44.7	124
Services-street vendors	19.4	18.3	21.3	19.0	247	37.2	35.2	39.7	38.7	223
Skilled-unskilled manual	32.6	32.4	31.8	26.4	92	47.0	46.9	45.8	41.7	83
Agriculture	18.2	15.6	23.0	17.3	55	37.9	33.3	34.6	34.1	103
Never worked	20.8	21.0	24.7	30.8	592	40.7	41.6	40.3	42.2	605
PROB VALUE	0.000	0.000	0.053	0.152		0.215	0.014	0.230	0.606	
<b>WORKING NOW ?</b>										
Now working	36.9	37.0	29.9	30.7	377	48.8	46.4	49.1	48.2	260
Not now working	21.8	21.8	24.7	24.3	913	38.7	39.5	38.6	38.9	878
PROB VALUE	0.000	0.000	0.120	0.072		0.003	0.045	0.014	0.065	
<b>WORKED BEFORE 1ST BIRTH ?</b>										
Worked before 1st birth	33.8	34.4	32.3	32.1	527	38.5	38.9	40.2	39.7	317
Did not work before 1st	21.0	20.6	22.0	22.1	763	42.0	41.8	41.3	41.6	821
PROB VALUE	0.000	0.000	0.007	0.019		0.277	0.361	0.805	0.701	
<b>WORKED AFTER 1ST BIRTH ?</b>										
Worked after 1st birth	33.0	30.8	26.9	26.0	415	44.2	41.8	40.9	41.3	403
Did not work after 1st	23.0	24.0	25.9	26.3	875	39.3	40.6	41.1	40.9	735
PROB VALUE	0.000	0.015	0.799	0.950		0.112	0.698	0.975	0.938	
<b>HUSBAND/PARTNER'S EDUCATION</b>										
0-5 years	12.1	11.0	16.8	17.4	173	36.1	34.1	34.4	35.3	255
6-7 years	21.9	20.8	27.6	28.0	160	41.3	38.7	37.6	38.2	271
Completed primary	22.3	18.7	20.9	21.0	319	47.4	44.1	46.5	46.7	308
Incomplete secondary	23.1	26.5	27.6	27.6	303	31.0	39.5	39.4	39.1	190
Completed secondary	42.1	43.5	34.2	33.6	335	50.9	56.4	52.1	48.8	114
PROB VALUE	0.000	0.000	0.000	0.002		0.000	0.001	0.007	0.037	
<b>HUSB/PARTNER'S OCCUPATION</b>										
Prof-tech-admin-clerical	39.4	39.7	27.9	27.9	282	54.5	54.7	49.1	49.1	123
Services-sales	27.9	28.4	26.2	26.2	244	42.5	44.1	43.1	43.1	179
Agriculture	14.5	13.9	22.5	22.5	213	37.8	36.1	36.7	36.7	307
Skilled-unskilled manual	23.2	23.1	26.8	26.8	551	39.3	39.7	41.0	41.0	529
PROB VALUE	0.000	0.000	0.640	0.640		0.010	0.003	0.216	0.216	

*Guyana: use among women who want no more*

Among the 1138 in union and fecund Guyanese women who wanted no more children, 41 per cent were using contraception. Socio-economic variation from this average of 41 per cent is somewhat weaker than the socio-economic variation from the proportion using among women who want more. Calculated across the 37 socio-economic categories, the standard deviation in the proportion using among 'spacers' is 9.6, compared with a standard deviation of 6.6 per cent for 'stoppers'.

The differentials adjusted for demographic composition only in column 7 are almost all in the expected direction. Rural women use least often (40 per cent) while urban

born residents use most often (47 per cent), though this differential is not large.

The differential by respondent's education shows women with completed secondary education using substantially more often than any other group (62 per cent versus 45 per cent in the next highest group), but use differs rather erratically from 35 to 45 per cent among women with less than completed secondary. The differences between husband's education categories display a similar erratic pattern.

The picture by respondent's occupation indicates surprisingly similar levels of use for stopping purposes between the skilled-unskilled manual (46 per cent) and

the P-T-A-C group (51 per cent), and somewhat lower use for women in the agriculture category and the services-street vendors category (33-35 per cent).

Once demographic composition is adjusted for, common law women are seen to have somewhat lower levels of use than either married or visiting women, and this persists in columns 8 and 9 as controls are added.

The results by the female labour force participation indicators show significantly higher use among women who were employed at time of interview than among those who were not (48 versus 39 per cent) and this differential remains significant at all levels of adjustment. But the other indicators are all non-significant. The proportion using among women who never worked is about equal to the 'All Guyana' average of 41 per cent at all levels of statistical adjustment, and the differentials by the other two indicators (worked after first birth, worked before first birth) are non-significant and weak once demographic composition is controlled for.

### *Conclusions*

In summary, Guyana has quite strong socio-economic differences in contraceptive use levels, and these are especially strong among women who want more children. The 'fully adjusted' results in columns 4 and 9 suggest that education and work force participation are the most important causal factors in determining differences between socio-economic groups, though union status seems to have independent effects on use among women who want more children and ethnicity among women who want no more.

The contrast among socio-economic groups in use for spacing purposes versus use for stopping is also interesting. For example, visiting women have about the same proportion using for these two reasons while other union types show a large difference. Ethnic contrasts are also quite marked, with Indians more likely to use for stopping purposes.

### **Jamaica: Contraceptive use and preferences**

#### *Jamaica: Use among women who want more*

Overall, 36 per cent of Jamaican women were using contraception for childspacing purposes, but there are quite substantial variations from this average. Columns 1-4 of table 70 present the differentials at varying levels of statistical adjustment.

The differentials adjusted for demographic composition in column 2 of table 70 are significant ( $p < 0.05$ ) for all but the two 'expectation of child support' variables and for the 'worked after first birth' one. There are striking and statistically significant differentials for all but four of the 12 variables. Use for spacing purposes is substantially higher among urban respondents (43-48 per cent) than rural (28 per cent), perhaps reflecting differential access and differential contraceptive knowledge. Use is also substantially higher among respondents with secondary education (50 per cent) than among those with less (23-24 per cent).

Out of the three union status categories, women in common law unions are seen to be least likely to be using (30 per cent versus 38 per cent for married and 43 per cent

for visiting women); this is apparently a result of their lower educational and occupational status, since when the percentages using are fully adjusted for socio-economic composition in column 4, common law women actually have slightly higher adjusted percentages using than married women, though visiting women still have the highest percentages of any of the three union statuses, at all levels of statistical control.

The differentials by respondent's occupation are especially strong, ranging from 16 per cent among the handful of respondents in agriculture to 56 per cent among women in the professional, technical and administrative category. Those by husband's occupation are not quite as marked, but show very low use in the agriculture category (18 per cent), substantially higher use in the manual and sales and services categories (35-37 per cent), and highest use in the professional, technical and administrative category (51 per cent).

The differentials by the indicators of female labour force participation show lowest use among women who never worked (24 per cent) and highest among women who were employed at time of survey (49 per cent).

The fully adjusted differentials in column 4 suggest that residence status, husband's education and whether currently working are the most dominant variables, since all the others have shrunk to non-significance. The fully adjusted results strongly imply that the low use among respondents with agricultural partners is largely a consequence of low education and rural residence.

#### *Jamaica: use among women who want no more*

Table 70 indicates that only half the Jamaican women who wanted no more were using contraception (ie 54 per cent). Based on the differentials adjusted for parity and age in column 7, use ranged from 37 per cent among women with partners in agriculture to 78 per cent among women whose current or last occupation was classified as professional, technical or administrative.

The pattern of variation in contraceptive use for stopping purposes is somewhat different than for spacing purposes. The means adjusted for demographic composition (ie NLC and age) in column 7 indicate surprisingly little difference between the most educated women (60 per cent) and the very sizable group with completed primary or with 6-7 years in school (54-55 per cent). One surprise is that the level of use is not much higher among the secondary educated. Another is that the two educational categories immediately below have nearly equal proportions using. The data instead indicate that the greatest variation in contraceptive use for stopping purposes is by respondent occupation, from 41 per cent among women who never worked to 78 per cent among respondents in the professional, technical and administrative category.

Turning now to the percentages fully adjusted for composition on all of the variables, in column 9, there are several further surprising results. Residence status accounts for very little of the variation in proportions using, and the most important variables are, in order of statistical significance, whether the respondent was employed, her occupational group and her husband or partner's occupation, with education apparently playing an insignificant role. It might appear from this that it is the discipline



Table 70 Adjusted and unadjusted percentages using contraception among women aged 15-39 who want and do not want additional children: Jamaica

	WOMEN WHO WANT MORE CHILDREN					WOMEN WHO WANT NO MORE CHILDREN				
	Unad-just- -ed perc- -ent -ages	Percentages using, adjusted for:				Unad-just- -ed perc- -ent -ages	Percentages using, adjusted for:			
		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women
ALL JAMAICA	36.4	36.4	36.4	36.4	879	54.0	54.0	54.0	54.0	631
RESIDENCE STATUS										
Resides in rural area	27.3	27.7	27.7	31.3	417	48.8	49.1	49.1	52.3	338
Born rural, resides urban	43.0	42.8	42.8	41.2	309	59.2	59.0	59.0	56.0	211
Born urban, resides urban	47.7	47.2	47.2	40.5	153	62.2	61.8	61.8	56.3	82
PROB VALUE	0.000	0.000	0.000	0.026		0.006	0.012	0.012	0.795	
RELIGION										
Church of God	26.5	26.4	27.1	30.5	189	49.2	51.0	51.3	51.1	132
Anglican-Methodist	48.6	48.3	47.1	43.2	144	58.3	58.3	58.3	57.4	103
Catholic	46.5	46.0	41.3	39.4	86	63.8	65.2	61.8	63.5	58
Bapt-Morav-Other Protestant	35.8	36.1	37.1	36.8	386	53.1	52.0	52.6	52.8	288
No religion	29.7	29.4	29.7	32.8	74	52.0	51.8	51.7	51.2	50
PROB VALUE	0.000	0.000	0.002	0.157		0.360	0.294	0.604	0.542	
RESPONDENT'S EDUCATION										
0-5 years	32.5	34.3	37.6	43.2	77	45.4	42.4	44.7	49.6	77
6-7 years	22.4	23.1	24.9	31.4	143	55.1	54.4	55.1	56.9	156
Completed primary	32.3	30.9	32.0	35.1	356	56.6	54.7	55.0	57.0	286
Secondary or higher	48.8	49.7	46.8	38.5	303	51.8	59.8	56.6	45.5	112
PROB VALUE	0.000	0.000	0.000	0.268		0.339	0.139	0.400	0.250	
UNION STATUS										
Married	37.1	37.6	34.1	32.3	245	60.6	56.8	57.0	56.5	246
Common-law	31.3	29.6	33.0	35.6	326	50.8	49.9	49.2	50.7	242
Visiting	41.2	42.7	41.8	40.6	308	48.3	56.3	57.2	55.5	143
PROB VALUE	0.032	0.004	0.070	0.171		0.027	0.247	0.169	0.426	
R'S LATEST OCCUPATION										
Prof-Tech-Admin	59.8	62.4	56.2	49.9	102	75.6	78.2	77.4	67.3	41
Clerical-White Collar Sales	44.4	45.2	41.1	37.5	198	56.3	57.4	53.7	50.2	96
Services-Blue Collar Sales	32.3	31.3	33.8	35.1	285	58.4	56.7	57.8	59.8	257
Skilled or unskilled manual	33.3	32.6	31.3	31.0	111	50.5	49.3	46.4	48.1	101
Agricultural	13.9	15.7	24.7	28.2	36	51.3	46.8	52.0	52.8	37
Never worked	25.2	24.3	28.2	34.3	147	36.4	41.4	43.4	43.9	99
PROB VALUE	0.000	0.000	0.001	0.134		0.000	0.003	0.006	0.087	
WORKING NOW ?										
Now working	47.0	48.7	43.0	43.1	362	68.1	66.7	65.2	66.7	251
Not now working	29.0	27.8	31.8	31.7	517	44.7	45.7	46.7	45.7	380
PROB VALUE	0.000	0.000	0.003	0.003		0.000	0.000	0.000	0.000	
WORKED BEFORE 1ST BIRTH ?										
Worked before 1st birth	40.8	41.7	39.2	38.6	483	57.4	57.7	57.6	56.4	298
Did not work before 1st	31.1	30.0	33.0	33.7	396	51.1	50.8	50.9	51.9	333
PROB VALUE	0.003	0.001	0.103	0.260		0.111	0.080	0.127	0.310	
WORKED AFTER 1ST BIRTH ?										
Worked after 1st birth	39.7	38.8	36.2	35.7	494	58.1	56.2	51.4	51.5	472
Did not work after 1st	32.2	33.3	36.7	37.3	385	42.1	47.7	61.9	61.6	159
PROB VALUE	0.022	0.161	0.920	0.775		0.000	0.072	0.149	0.164	
HUSBAND/PARTNER'S EDUCATION										
0-5 years	15.6	17.6	24.3	25.3	64	46.9	44.0	48.0	49.9	64
6-7 years	22.9	22.0	30.0	30.3	83	55.9	52.6	54.0	53.9	102
Completed primary	32.4	31.2	34.8	34.7	426	52.4	52.1	52.9	52.8	353
Secondary or higher	50.0	51.5	43.0	42.7	306	61.6	67.2	61.1	60.6	112
PROB VALUE	0.000	0.000	0.046	0.083		0.219	0.014	0.474	0.615	

**Table 72** Means, standard deviations and ranges across social categories

	Guyana				Jamaica				Trinidad and Tobago			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max
1 Desired family size (DFS), all women	4.29	0.10	4.08	4.58	3.88	0.179	3.52	4.35	3.68	0.05	3.56	3.77
2 DFS, women 0-4 years in union	3.40	0.20	2.89	3.72	3.17	0.136	2.88	3.49	3.11	0.11	2.58	3.28
3 % wanting more children	45.5	4.2	38.5	56.4	49.0	3.2	43.1	60.2	53.5	2.6	48.2	60.9
4 % ever having unwanted last birth (UWL B)	44.6	10.7	18.1	66.2	44.2	7.8	24.4	54.7	20.2	6.1	6.2	34.6
5 % with UWL B, 0-3 years before survey	20.0	4.5	6.8	29.6	20.7	7.0	4.6	32.1	6.5	2.4	2.3	13.4
6 % unwanted, babies born in past year	33.9	10.3	8.0	56.6	40.2	11.1	8.0	63.6	23.5	8.7	8.1	55.4
7 % contracepting among 'want mores'	26.3	9.6	10.1	48.8	35.8	10.3	15.7	62.4	49.2	7.4	32.4	64.4
8 % contracepting among 'want no mores'	42.0	6.6	30.6	62.4	54.7	8.10	36.8	78.2	69.5	6.1	57.4	86.2
9 Mean number of births to women 40-49	6.23	0.99	3.00	7.64	5.72	0.99	3.13	7.32	5.50	0.99	3.23	7.31
10 Estimated TFR, 0-2 years before survey	4.38	0.51	3.41	6.12	4.35	0.92	2.77	6.25	3.16	0.52	1.89	4.20
11 Wanted TFR, 0-2 years before survey	2.70	0.30	2.05	3.38	2.26	0.43	1.17	3.09	2.46	0.32	1.50	3.06
12 Gap between TFR and wanted TFR	1.68	0.46	0.66	2.75	2.08	0.66	0.59	3.29	0.69	0.29	0.22	1.43
13 Fertility decline=TFR-Mean births 40-49	1.85	0.91	-0.70	3.56	1.37	0.80	-0.41	3.59	2.34	0.80	0.48	4.09
14 Number of socio-economic categories	37	37	37	37	39	39	39	39	38	38	38	38

NOTES: Values in rows 1, 3, 7, 8 are standardized for number of living children and age. Values in rows, 2, 4, 5 are standardized for age at first union, months elapsed since first union began.

and 24 per cent unwanted in Trinidad and Tobago. In Jamaica, where the disequilibrium between TFR and desired family size is much larger, the proportion of babies unwanted (40 per cent) is only slightly higher than in Guyana, where TFR and desired family size match quite closely.

These results should serve as a caution against the rough and ready practice of inferring that there is little motivation for fertility decline if TFR and desired family size are approximately equal. They also imply that questions on the current situation (wanting the last, wanting more) may capture timing mistakes more than reflecting the underlying mean desired family size.

4 The comparisons between rows 9, 10 and 11 suggest a progressive homogenization of fertility between socio-economic groups in Guyana and Trinidad and Tobago but not in Jamaica. In Guyana, completed fertility as measured by the mean number of births to women aged 40-49 had a mean of 6.23 and a standard deviation of 0.99, while the TFR 0-2 years before survey had a substantially lower mean of 4.38 and a substantially lower standard deviation of 0.52; the wanted total fertility rate had a standard deviation of only 0.43 between social categories. Similar comparisons for Trinidad and Tobago show a progression of 0.99, 0.52, 0.32. In the case of Jamaica, however, the decline in fertility from a mean of 5.7 to 4.4 has not been accompanied by any reduction in differentials between social categories, though the present results suggest that achievement of wanted total fertility rates in Jamaica would sharply reduce the socio-economic differentials in fertility from the observed standard deviation of about one birth to one of about half.

5 One of the more surprising things about the Caribbean data is that Guyana, with higher mean desired family size and less contraceptive use, more stable sexual unions, and lower childlessness and shorter breastfeeding, had about the same TFR as Jamaica, and substantially greater fertility decline. It is not known whether this is the result of less effective contraceptive use in Jamaica, or higher abortion or greater abstinence in Guyana, or some other circum-

stance. Age at first union was quite similar in the two countries, with a singulate mean age at first union of 19.2 in Jamaica and 20.0 in Guyana (Smith 1980), though Guyana had slightly shorter median duration of breastfeeding, 4.5 months versus 6.0 months for Jamaica.

6 The wanted TFR (based on counting as unwanted all births in excess of desired family size and all unwanted last births, ie the definition 1 version) is 2.70 for Guyana, 2.26 for Jamaica and 2.46 for Trinidad and Tobago, while the national means are 3.66 (Guyana), 3.40 (Jamaica) and 2.46 (Trinidad and Tobago) under an alternative, more conservative definition which only considers as unwanted births in excess of desired family size (definition 2). The definition 1 wanted TFR for Trinidad and Tobago is clearly an overestimate, owing to the restricting of questions on desire for last birth to the small subset of respondents who had never used contraception. Pressed to speculate on the likely level of the wanted total fertility rate in Trinidad and Tobago, we would guess that it would probably be somewhere around the 2.0-2.2 level, if it were constructed using complete data.

The ordering of countries based on the definition 2 wanted TFR (3.7, 3.4, 2.5) agrees with the ordering of desired family size for all women, which is 4.3 in Guyana, 3.9 in Jamaica and 3.7 in Trinidad and Tobago, but the magnitudes agree only for Guyana and Jamaica; Trinidad and Tobago has a much lower definition 2 wanted TFR, no doubt again reflecting the pivotal role played by successful contraception for childspacing reasons. It is notable that desired family size among women 0-4 years in union varies much less, being 3.41 in Guyana, 3.18 in Jamaica and 3.13 in Trinidad and Tobago.

7 Judged on the basis of desired family size for women 0-4 years in union, both Jamaica and Trinidad and Tobago face overly high levels of desired family size among young women, given their governmental targets of reducing fertility. The definition 1 wanted total fertility rates, on the other hand, have a rather different implication if taken at face value, suggesting that total elimination of unwanted fertility would lead to substantially lower overall fertility

## 6 Synthesis of Data on Social Differentials

With the aim of providing global, holistic comparisons of socio-economic variation in reproductive motives and reproductive behaviour in the three Caribbean countries, tables 73, 74 and 75 present 14 selected indicators of fertility preference and fertility behaviour.

Each of these tables contains eight indicators of reproductive motives, including desired family size among all women in union (column 1), desired family size among women with 0–59 months elapsed since first union began (column 2), proportions wanting more children (column 3), proportions ever having unwanted last births (column 4), proportions with unwanted last births 0–2 years before survey (column 5), proportion unwanted among babies born in last 12 months (column 6) and wanted total fertility rates (column 12).

Each table also contains four indicators of reproductive behaviour, including the percentage using contraception among women who want more children (column 8), the percentage contracepting among women who do not want more children (column 9), and also two indicators of fertility, one the average number of births to women aged 40–49, which is an indicator of completed fertility in each socio-economic group, and the other the total fertility rate 0–2 years before survey.

Several indicators are adjusted for parity and age (columns 1, 3, 8, 9), or for months elapsed since first union began and age at first union (columns 2, 4, 5).

### 6.1 ANALYSIS AT THE AGGREGATE LEVEL

To summarize the variation across social categories shown for each country in these rather large and complex tables, and to permit a summary analysis at the aggregate country level, table 72 presents means, standard deviations and minima and maxima for each variable.

Several major conclusions emerge from the comparisons of means and standard deviations shown in table 72:

**1** In all three countries, desired family size varies much less across socio-economic categories than does actual fertility, whether desired family size is measured for all women (row 1) or for women 0–59 months in union (row 2) and whether fertility is measured in terms of the TFR 0–2 years before survey (row 10) or completed fertility as measured by the mean number of births to women aged 40–49 (row 9).

In Guyana, for example, desired family size for all women has a mean of 4.29 and a standard deviation of 0.10 (across the 37 social categories), compared with a total fertility rate with a mean of 4.38 and a standard deviation of 0.51, more than five times as large as the standard deviation for desired family size.

Similarly, in Jamaica the standard deviation for mean desired family size (0.18) is five times smaller than the standard deviation for the total fertility rate 0–2 years before survey (0.92) and completed fertility (0.99), calculated across the 39 social categories.

In Trinidad and Tobago there is even less variation in mean desired family size, with a standard deviation of 0.05 around the mean of 3.68 and with a minimum of 3.56 and a maximum of 3.77, or only 2/10 of a child, between the lowest and highest groups. The total fertility rate varies substantially less than in Jamaica, with a standard deviation of 0.52 compared to 0.92, but this 0.52 deviation is nevertheless ten times larger than the standard deviation for mean desired family size.

It follows, therefore, that in all three countries the observed differences in fertility cannot be largely explained in terms of differing demand for children, a conclusion which challenges models of fertility behaviour that invoke differentials in desired family size to explain differential fertility. At the very least, differences in implementation of the expressed desires must be called upon to explain observed fertility differences.

**2** We have already discussed the fact that at the inter-country level proportions wanting more children are lowest where desired family size is highest, as Guyana has both the lowest proportions wanting more children and the highest desired family size, while the reverse applies to Trinidad, which has the highest proportions wanting additional children and the lowest mean desired family size. In chapters 4 and 5 we suggested this was due to much higher contraceptive use among women in Trinidad and Tobago who want more children, and, as can be seen in row 7, Guyana has much lower proportions using contraception among women who want more (26 per cent), Jamaica an intermediate proportion (36 per cent), while Trinidad and Tobago is well above the other two countries (49 per cent).

**3** The comparison between desired family size among all women (row 1) and the total fertility rate (row 10) might be misinterpreted to suggest that only Jamaica had any substantial level of unwanted fertility. In Guyana, the total fertility rate (4.38) and mean desired family size (4.29) are very close together, while in Trinidad and Tobago the TFR (3.16) is substantially lower than mean desired family size for all women (3.68) and also lower for women 0–59 months in union (3.11). Only in Jamaica does the total fertility rate (4.35) substantially exceed desired family size (3.88).

Despite the closeness between TFR and desired family size in Guyana and despite the TFR being lower than desired family size in Trinidad and Tobago, levels of unwanted fertility are substantial in both countries if measured by the proportion of recently born babies unwanted (row 6), with 34 per cent unwanted in Guyana

larger among the less modern, or more working-class subgroups in all three countries.

Variation in per cent using contraception, whether among those who want more children (ie for spacing) or those who do not want more (ie for stopping), also followed the same pattern. From the standpoint of an improved understanding of fertility preferences, the chief conclusions to be drawn from these results are somewhat mixed. Given the relatively high levels of use among women who want additional children, it is surprising that use levels are not higher among those who want to stop childbearing in all three countries, especially at the higher educational levels. Results such as these prompt one to ask whether the question on desire for additional children has caught the subtle distinction between women who really want to stop childbearing and those who have reached an indifference point where they have no strong feelings either way. Perhaps there are very few such women in the real world, though the writer recalls that the West Malaysian 1966-7 Family Survey probed women who said they wanted no more children with an additional question,

namely 'Suppose you had an additional child: how would you feel about that?'. Remarkably high proportions said they would have no objection. There are thus at least some grounds for suspecting that a 'No' reply to 'Do you want additional children?' does not always mean the same as 'I want to stop having children', and that it may sometimes mean instead, 'I am satisfied with the existing number, do not particularly want any more, but would not object to an additional child'.

On the other hand, there may be other explanations for the failure to use: the woman's intention to stop childbearing may be real, but husbands' objections, current abstinence for non-contraceptive reasons, religious scruples, or a subjective feeling that pregnancy is sufficiently unlikely for a risk to be taken may account for failure to use contraception. Barriers to access to contraception that may include shyness, cost, distance or fear of side effects may also help to explain failure to use contraception among the less modern subgroups in Jamaica and Trinidad and Tobago, and apparently may exist at all levels in Guyana.

Table 71 continued

	WOMEN WHO WANT MORE CHILDREN					WOMEN WHO WANT NO MORE CHILDREN				
	Unad-just- -ed perc-ent- -ages	Percentages using, adjusted for:				Unad-just- -ed perc-ent- -ages	Percentages using, adjusted for:			
		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
<b>HUSBAND/PARTNER'S EDUCATION</b>										
0-6 years	39.4	39.4	47.0	47.4	120	61.0	60.2	63.3	63.3	160
7-8 years	41.5	40.7	45.5	45.8	190	65.4	65.0	67.0	67.0	163
Completed primary	48.5	47.7	49.1	49.1	564	70.6	70.3	71.5	71.8	297
Incomplete secondary	58.0	57.8	56.6	56.5	286	69.8	71.3	67.4	67.4	113
Completed secondary	54.4	56.2	49.9	49.6	354	78.4	79.4	72.6	71.8	106
PROB VALUE	0.000	0.000	0.140	0.161		0.033	0.021	0.467	0.459	
<b>HUSB/PARTNER'S OCCUPATION</b>										
Prof-tech-admin-clerical	54.7	55.2	50.9	50.9	361	80.1	79.2	71.5	71.5	141
Sales or services	52.8	52.2	50.1	50.1	299	61.6	61.4	61.9	61.9	126
Agricultural	39.7	38.4	46.4	46.4	94	68.9	69.3	73.1	73.1	107
Skilled + unskilled manual	48.1	48.2	50.1	50.1	762	67.0	67.3	68.6	68.6	467
PROB VALUE	0.027	0.018	0.915	0.915		0.007	0.014	0.271	0.271	

are respondent's education, union status, whether respondent is currently working and whether respondent worked before the first birth.

*Trinidad and Tobago: use among women who want no more*

Among women who said they wanted to stop childbearing (and were in union, aged 15-39 and self-reported fecund), 69 per cent were using contraception. If we examine the percentages adjusted for demographic composition in column 7 of table 71, there is considerable variation from this mean, ranging from 57 per cent among women with 0-6 years' education to 86 per cent among women with a completed secondary education, and the standard deviation across social categories is 6.1 per cent. There is little variation in use for stopping purposes by residence status, ethnicity or religion. On the other hand, there is fairly strong variation by education, occupation and union status.

Turning to the fully adjusted differentials in column 9, only the differential by union status remains highly statistically significant. Reversing the situation observed among women who wanted additional children, visiting women who reported wanting to stop childbearing have the lowest contraceptive use level of all three union statuses (59 per cent), compared with 62 per cent among common law women and 72 per cent among married women. This might well be a consequence of some of the visiting and common law women acceding to pressure from a current partner for whom they have no children. This difference persists at all levels of statistical control.

The only other variables approaching statistical significance at the 90 per cent level in column 9 of table 71 are respondent's education and whether the respondent

worked before the first birth. The differentials by education continue to indicate what they did at lesser levels of adjustment, namely that women with 0-6 years have substantially lower proportions using contraception, that respondents with between 7 and 8 years in school and some secondary education share very similar levels of use, and that women with a completed secondary education use contraception somewhat more often than any of the other educational groups.

*Conclusions*

There is considerable variation among subgroups in use for both spacing and stopping purposes, with differences in the expected direction of greater use by more modern subgroups. The overall level of use is usually higher than in Jamaica and Guyana. As in the other two countries, use for stopping is higher among women in more stable unions and higher among Hindu and Muslim women than among their counterpart groups.

5.4 CONCLUSIONS

This chapter looked at differential success in implementing fertility preferences among socio-economic subgroups. The level of unwanted childbearing, measured in three different ways, varies substantially among subgroups - most of all by education (respondent's and husband's) in Guyana, but more so by occupation (especially respondent's) in Jamaica and by the two women's characteristics, education and occupation, in Trinidad and Tobago.

The gap between actual fertility and the estimate of a wanted fertility level varied in the same direction, being

Table 7I. Adjusted and unadjusted percentages using contraception among women aged 15-39 who want and do not want additional children: Trinidad and Tobago

	WOMEN WHO WANT MORE CHILDREN					WOMEN WHO WANT NO MORE CHILDREN				
	Unad-just- -ed perc-ent- -ages	Percentages using, adjusted for:				Unad-just- -ed perc-ent- -ages	Percentages using, adjusted for:			
		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
ALL TRINIDAD AND TOBAGO	50.1	50.1	50.1	50.1	1516	68.6	68.6	68.6	68.6	840
RESIDENCE STATUS										
Born rural, resides rural	44.0	43.7	43.7	47.2	431	66.7	66.7	66.7	67.8	311
Born rural, resides urban	51.3	51.2	51.2	51.1	453	69.1	68.9	68.9	70.6	241
Born urban, resides rural	54.3	55.2	55.2	55.6	118	71.5	71.7	71.7	70.1	83
Born urban, resides urban	53.1	53.3	53.3	50.3	514	69.9	70.0	70.0	67.0	205
PROB VALUE	0.023	0.014	0.014	0.382		0.796	0.796	0.796	0.832	
ETHNICITY										
Non-Indian	53.0	53.5	52.9	48.7	972	70.4	70.6	70.2	70.8	411
Indian	44.9	44.0	45.1	52.5	545	67.0	66.8	67.1	66.6	429
PROB VALUE	0.002	0.000	0.005	0.359		0.281	0.242	0.355	0.441	
RELIGION										
Catholic	51.9	51.9	50.6	50.5	590	71.1	71.8	70.0	68.7	259
Protestant Christian	53.8	54.6	54.3	53.3	547	67.6	67.1	66.0	64.3	244
Hindu	40.0	38.6	41.1	43.3	286	66.1	65.9	68.2	70.9	278
Muslim	47.9	47.3	49.3	49.0	92	74.1	73.8	75.9	75.3	60
PROB VALUE	0.001	0.000	0.041	0.308		0.469	0.373	0.493	0.437	
RESPONDENT'S EDUCATION										
0-6 years	33.2	32.4	36.8	40.3	127	59.1	57.5	57.2	59.8	187
7-8 years	51.4	49.7	51.4	52.7	252	69.5	69.3	68.9	70.9	221
Completed primary	45.9	45.4	45.3	45.9	466	69.2	69.9	70.2	70.1	247
Some secondary	54.1	54.3	52.9	51.3	350	70.4	71.4	71.7	69.7	108
Completed secondary	57.2	59.5	58.1	56.5	322	84.8	86.2	86.4	77.5	77
PROB VALUE	0.000	0.000	0.001	0.032		0.001	0.000	0.001	0.109	
UNION STATUS										
Married	47.7	45.4	45.6	45.3	761	72.6	72.1	72.3	72.7	576
Common-law	39.7	37.0	38.0	40.4	263	60.4	61.5	61.8	61.2	153
Visiting	59.4	64.4	63.5	62.7	491	59.5	60.8	59.4	58.1	110
PROB VALUE	0.000	0.000	0.000	0.000		0.001	0.008	0.008	0.004	
R'S LATEST OCCUPATION										
Prof-tech-admin-clerical	56.2	59.0	51.8	46.3	402	85.2	85.6	75.8	73.5	125
Sales and services	46.3	46.1	47.4	45.6	408	66.5	66.8	68.3	66.9	223
Skilled crafts	56.3	57.1	54.1	51.3	166	73.2	72.9	76.0	74.1	70
Agric. + unskilled manual	39.0	39.0	42.0	43.8	74	72.4	71.8	76.5	73.9	75
Never worked	48.2	46.5	50.7	57.8	466	64.7	64.7	63.1	65.8	347
PROB VALUE	0.007	0.000	0.344	0.175		0.002	0.002	0.045	0.583	
WORKING NOW ?										
Now working	57.7	59.3	56.3	57.0	588	72.8	72.4	67.7	65.4	229
Not now working	45.3	44.2	46.1	45.7	929	67.1	67.2	69.0	69.9	611
PROB VALUE	0.000	0.000	0.001	0.001		0.110	0.153	0.752	0.341	
WORKED BEFORE 1ST BIRTH ?										
Worked before 1st birth	53.1	54.5	54.8	54.1	810	72.3	72.6	66.9	68.2	297
Did not work before 1st	46.6	45.0	44.7	45.4	707	66.7	66.5	69.6	68.9	543
PROB VALUE	0.010	0.001	0.009	0.044		0.091	0.077	0.549	0.896	
WORKED AFTER 1ST BIRTH ?										
Worked after 1st birth	53.13	51.17	47.86	47.67	566	73.8	73.3	73.9	73.6	386
Did not work after 1st	48.24	49.40	51.38	51.49	951	64.3	64.7	64.2	64.4	454
PROB VALUE	0.065	0.542	0.388	0.350		0.003	0.007	0.116	0.136	

Table 70, continued

	WOMEN WHO WANT MORE CHILDREN					WOMEN WHO WANT NO MORE CHILDREN				
	Unad-just- -ed perc- -ent -ages	Percentages using, adjusted for:				Unad-just- -ed perc- -ent -ages	Percentages using, adjusted for:			
		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women		NLC, Age	NLC, Age, All prior vari- ables	NLC, Age, All other vari- ables	No of women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
<b>HUSB/PARTNER'S OCCUPATION</b>										
Prof-tech-clerical	50.8	51.1	38.7	38.8	191	69.1	69.5	61.1	60.7	84
Sales or services	37.3	37.0	33.8	33.8	126	48.8	52.4	51.4	51.1	84
Agricultural	17.7	18.2	29.4	29.4	113	40.4	36.8	40.5	40.8	136
Skilled or unskilled manual	34.7	34.6	37.9	37.9	449	57.2	57.7	58.5	58.6	327
PROB VALUE	0.000	0.000	0.332	0.327		0.000	0.000	0.008	0.010	
<b>WILL CHILDREN CONTRIBUTE TO H/HOLD WHEN START WORK?</b>										
Expects no contribution	43.1	40.8	36.8	36.9	130	65.5	65.5	60.8	62.1	87
Yes, expects contribution	37.0	34.7	36.5	36.6	508	52.4	52.3	53.1	52.8	464
Not asked	31.5	37.6	36.0	35.7	241	51.3	51.8	51.9	52.7	80
PROB VALUE	0.080	0.430	0.992	0.983		0.067	0.063	0.399	0.279	
<b>EXPECTED SOURCES OF MONEY SUPPORT IN OLD AGE</b>										
Children not mentioned	37.4	38.1	36.4	36.4	569	53.8	55.1	50.2	50.2	314
Children mentioned (spont.)	34.5	33.3	36.4	36.4	307	54.4	53.2	58.0	58.0	316
Not asked	33.3	27.8	47.0	47.0	3	.0	.0	13.6	13.6	1
PROB VALUE	0.691	0.370	0.926	0.926		0.549	0.368	0.118	0.118	

of the work place rather than that learned in school which is the key determinant of whether contraception is used for stopping purposes.

### Conclusions

The existence of strong differentials among socio-economic subgroups in contraceptive use, both among those who want more children and those who want no more, is quite clear. Differentials by women's work variables and respondent's education in use for spacing are particularly strong. In the case of use for stopping purposes, it is respondent's occupation which shows the strongest differentials, and education is less important. Comparison of use for spacing versus use for stopping gives a few interesting results - married, rural or agricultural women are more likely to be using for stopping than for spacing, compared to other subgroups where the gap between the two proportions is narrower.

### Trinidad and Tobago: Contraceptive use and preferences

*Trinidad and Tobago: Use among women who want more*  
In Trinidad and Tobago, 50 per cent of the in union and fecund aged 15-39 who wanted additional children were using contraception (table 71).

When the percentages using contraception are adjusted for number of living children and age (column 2), there is substantial variation about this mean, with a standard deviation of 7.4 per cent (calculated across the 38 social categories) and a range from 32 per cent among women

with 0-6 years' education to 64 per cent among women in visiting unions. The chief features in the percentages adjusted for demographic composition in column 2 are that rural born rural residents have somewhat lower use than any other residence category, that non-Indians have significantly higher use, that use increases with respondent's education and partner's education, and that use is high among visiting women (64 per cent), low among common law women (37 per cent) and only marginally higher among married women (45 per cent). To some extent this latter result may reflect a desire on the part of visiting women to be married before they bear children, or perhaps a measure of uncertainty concerning the current partnership. On the other hand, it is noteworthy that far short of 100 per cent of visiting women were contracepting, and it would be very interesting indeed to know whether this was because they wanted an immediate pregnancy.

Another noteworthy result is that while women who held jobs at time of interview had significantly higher use than those who were not working, a large number were not contracepting. It would be interesting to see how far this is explained by behavioural infecundity, how far by 'risk-taking' and how far by a desire for immediate pregnancy. Possibly working non-users, who form a significant part of the population, might be an attractive target group for the family planning organization if indeed risk-taking is a major reason for non-use.

The fully adjusted results, in column 4 of the table, suggest that the dominant variables in influencing contraceptive use among women who want additional children

### **Husband's education**

Much the same kind of picture exists by husband's education, except that the differentials in TFR, wanted TFR and unwanted fertility are typically somewhat weaker by this variable than by respondent's own education.

### **Union status**

In Guyana, common law women have very high actual TFRs, quite high wanted TFRs, lower rates of contraceptive use and higher likelihood of unwanted pregnancy, while visiting women have relatively low wanted fertility rates and low TFR, low unwanted fertility and somewhat higher contraceptive use among those who want more children. In Jamaica, where common law women are numerically far more important, common law women have higher self-reported desired family size than married or visiting women, but substantially lower wanted TFRs (2.5) than women who are married (3.0). In Trinidad and Tobago, common law women follow the Guyanese pattern, being a relatively small minority, with higher actual and wanted fertility and relatively low contraceptive use among those who want more children.

### **Female work participation**

While there are seven work categories of female work status, we concentrate on two, namely never worked and employed at time of survey.

First we consider women who never worked. Their desired family size differs little from the national average desired size in all three countries. Their likelihood of having an unwanted birth and their proportion using contraception is similar to the national averages for these indicators in Guyana and in Trinidad and Tobago, though in Jamaica the proportion with an unwanted birth is higher than the national average and the proportion using contraception is lower than average.

The total fertility rate and wanted total fertility rate of women who never worked is slightly below the national average in Guyana, though this possibly reflects their ethnicity, since a substantially higher proportion never worked among the Indian population. In Jamaica and Trinidad and Tobago, however, the total fertility rate of women who never worked is substantially higher than the national average, though the wanted TFR is only slightly higher than average.

Second we consider women employed at time of interview. In all three countries, desired family size among such women was little different from the national average, but such women had markedly higher proportions using contraception, lower actual total fertility rates, and relatively few unwanted babies born in the preceding year.

The overall conclusion suggested by these data on work force participation is that while the classic measures of fertility preference (ie desired family size and proportions wanting more children) do not show much of a difference, the wanted total fertility rate is indeed lower among those who work, as is actual fertility, which is usually associated

with somewhat higher use of contraception. The fact that women who are working tend to use contraception more often also lends some support to the notion that large numbers of women are not simply being selected into and then kept in the work force by their relative infecundity, but instead are taking deliberate steps to remain there.

### **Woman's most recent occupation**

Comparing the three countries by woman's occupation poses mild problems, since national variations in occupational structure forced the adoption of a somewhat different classification in each country.

Only Jamaica has marked differentials in desired family size by woman's occupation, ranging from 3.6 among the professional-technical-administrative and clerical group to 4.4 children wanted among the relatively few women whose current or last occupation was classified as being in agriculture.

In all three countries, however, there are marked differences by woman's occupation in unwanted fertility, in contraceptive use, and in the total fertility rate 0-2 years before survey.

When compared to the other occupational categories, women in the group including professional workers uniformly have the higher levels of contraception, lower levels of unwanted fertility and lower actual fertility rates in the three countries, except for Jamaica, where women in clerical and shop assistant jobs are classified separately and have lower actual and wanted total fertility rates than any other occupational group; this is intriguing, particularly since their contraceptive use is not as high as among the professional-technical-administrative group in Jamaica.

### **Husband/partner's occupation**

In a sense, differentials by husband's occupation have greater utility than those by respondent's, because while large numbers of respondents have never worked and are hence unidentified as to occupation, all are identified by their husband or partner's current occupation. Also, the classification by husband's occupation is more uniform across countries.

Jamaica is the only country with noticeable differentials in desired family size by partner's occupation. Respondents with partners in agriculture reported a mean number desired of 4.2, those with partners classified as 'skilled or unskilled manual' a mean of 3.9, and respondents with partners in the professional group and sales and services group one of about 3.7. In both Trinidad and Tobago and Guyana, however, the spouses of men in agriculture did not report higher mean desired family size, which very likely reflects the concentration of Indians in farming. But in Trinidad and Tobago, though not in Guyana, wanted total fertility rates were a great deal higher among women with partners in agriculture.

In all three countries, respondents with partners in agriculture had higher total fertility rates than women with partners in any other occupational group, and in all three countries women with partners classified as 'skilled or



R'S LATEST OCCUPATION

Prof-tech-admin-clerical	3.69	3.23	54.7	6.2	2.26	8.1	39	58.95	85.5	3.38	2.90	2.68	0.22	2.68	0.22	627
Sales and services	3.75	3.17	56.3	23.0	6.31	23.8	50	46.05	66.7	5.79	2.53	2.21	0.32	2.22	0.31	826
Skilled crafts	3.66	3.20	53.6	15.9	4.10	20.3	15	57.11	72.8	4.75	3.30	2.42	0.88	2.47	0.83	280
Agric. + unskilled manual	3.56	2.58	60.9	34.6	13.40	22.3	16	38.96	71.8	6.88	2.79	2.37	0.42	2.39	0.40	243
Never worked	3.68	3.08	49.9	23.1	7.46	28.9	109	46.50	64.7	6.14	3.55	2.53	1.02	2.60	0.95	1064
PROB VALUE	0.448	0.232	0.000	0.000	0.000	0.101		0.000	0.002	0.000						

WORKING NOW ?

Now working	3.66	3.11	56.2	14.4	8.05	14.2	56	59.33	72.4	4.92	2.22	1.87	0.35	1.91	0.31	1054
Not now working	3.71	3.14	51.8	23.5	3.39	26.2	172	44.19	67.2	6.14	3.67	2.72	0.95	2.76	0.91	1986
PROB VALUE	0.260	0.705	0.004	0.000	0.000	0.041		0.000	0.153	0.000						

WORKED BEFORE 1ST BIRTH?

Worked before 1st birth	3.67	3.19	55.1	15.1	7.13	15.9	95	54.50	72.5	4.90	3.01	2.44	0.57	2.47	0.54	1366
Did not work before 1st	3.70	3.06	51.9	24.6	5.59	28.5	133	44.98	66.4	6.23	3.28	2.43	0.85	2.49	0.79	1674
PROB VALUE	0.575	0.147	0.000	0.000	0.100	0.035		0.017	0.001	0.077						

WORKED AFTER 1ST BIRTH?

Worked after 1st birth	3.66	3.14	57.1	20.4	6.73	19.6	70	51.17	73.3	5.79	3.68	2.98	0.70	3.02	0.66	1310
Did not work after 1st	3.72	3.13	50.5	20.3	6.05	24.9	159	49.40	64.6	5.64	2.86	2.12	0.74	2.17	0.69	1730
PROB VALUE	0.255	0.933	0.000	0.938	0.455	0.361		0.542	0.007	0.578						

HUSBAND/PARTNER'S EDUCATION

0-6 years	3.70	3.08	51.0	30.8	11.87	55.4	21	39.43	60.1	7.23	3.68	2.25	1.43	2.28	1.40	452
7-8 years	3.73	3.09	52.3	23.6	6.29	28.8	40	40.71	65.0	6.17	3.80	3.01	0.79	3.11	0.69	495
Completed primary	3.68	3.14	55.4	21.8	6.07	19.4	79	47.73	70.3	5.37	3.01	2.40	0.61	2.42	0.59	1096
Incomplete secondary	3.67	2.92	54.5	13.3	4.94	20.7	39	57.84	71.3	4.06	2.99	2.53	0.46	2.60	0.39	459
Completed secondary	3.67	3.28	51.1	11.6	4.05	13.4	49	56.18	79.3	3.90	2.51	2.25	0.26	2.26	0.25	538
PROB VALUE	0.961	0.109	0.141	0.000	0.000	0.000		0.000	0.021	0.000						

HUSB/PARTNER'S OCCUPATION

Prof-tech-admin-clerical	3.70	3.19	53.8	12.2	3.64	13.0	43	55.16	79.1	4.79	2.42	2.15	0.27	2.16	0.26	644
Sales or services	3.70	3.11	54.9	17.3	5.16	21.2	39	52.23	61.4	4.77	2.71	2.17	0.54	2.25	0.46	519
Agricultural	3.71	2.96	50.5	28.5	10.57	30.9	23	38.43	69.3	7.31	4.12	2.96	1.16	3.05	1.07	275
Skilled + unskilled manual	3.68	3.13	53.1	23.2	7.27	26.1	123	48.23	67.2	5.96	3.42	2.53	0.89	2.57	0.85	1602
PROB VALUE	0.976	0.698	0.499	0.000	0.000	0.192		0.018	0.014	0.000						

NOTES: For several variables, demographic controls are instituted, as follows: Columns 1,3,8,9 are adjusted for number of living children (NLC), NLC squared, age, age squared. Columns 2 and 6 are adjusted for age at first union (AGFU), AGFU squared, months elapsed since first union began (MESFUB), and MESFUB squared. Columns 4 and 5 are adjusted for age and age squared.

The Trinidad and Tobago definition of "unwanted" necessarily differs from that used in Guyana and Jamaica and most likely substantially underestimates proportions with unwanted births in Trinidad and Tobago.

See text for description of how wanted and actual total fertility rates estimated.

Table 75 Some indices of reproductive motivation and reproductive behaviour by socio-economic group: Trinidad and Tobago

	DESIRED FAMILY SIZE (Adjusted: see note)		PER CENT WANTING MORE CHILDREN	ADJUSTED PER CENT WITH UNWANTED LAST BIRTH:	PROPORTION OF BABIES BORN 0-12 MONTHS BEFORE SURVEY THAT WERE "UNWANTED":		ADJUSTED PER CENT CURRENTLY USING ANY CONTRACEPTIVE AMONG WOMEN WHO WANT ---		AVERAGE NUMBER OF BIRTHS TO WOMEN AGED 40-49	TOTAL FERTILITY RATE 0-24 MONTHS BEFORE SURVEY (see note), BASED ON:			NUMBER OF CURRENTLY IN UNION WOMEN			
	(1)	(2)			(3)	(4)	(5)	(6)		(7)	(8)	(9)		(10)	(11)	(12)
ALL TRINIDAD AND TOBAGO NUMBER OF CASES	3.69 3041	3.13 683	53.3 2795	20.3	6.44	23.3 228	228 228	50.1 1516	68.6 840	5.72 642	3.13	2.42	0.71	2.46	0.67	3041 3041
RESIDENCE STATUS																
Born rural, resides rural	3.67	3.20	53.0	25.9	8.56	22.9	81	43.65	66.7	6.65	3.46	2.63	0.83	2.66	0.80	952
Born rural, resides urban	3.72	3.15	53.7	19.1	5.90	25.8	68	51.20	68.9	5.32	3.02	2.28	0.74	2.32	0.70	921
Born urban, resides rural	3.62	3.02	50.6	19.4	6.60	38.2	18	55.18	71.6	5.21	3.79	3.00	0.79	3.03	0.76	270
Born urban, resides urban	3.70	3.09	54.1	16.0	4.70	16.6	61	53.26	69.9	5.38	2.70	2.19	0.51	2.25	0.45	898
PROB VALUE	0.696	0.656	0.595	0.000	0.006	0.170		0.014	0.796	0.000						
ETHNICITY																
Non-Indian	3.74	3.17	56.1	18.3	7.13	19.2	110	53.47	70.5	5.32	3.09	2.41	0.68	2.45	0.64	1779
Indian	3.61	3.06	49.3	23.2	5.95	27.7	118	43.98	66.8	6.32	3.24	2.47	0.77	2.52	0.72	1261
PROB VALUE	0.011	0.216	0.000	0.000	0.186	0.091		0.000	0.242	0.000						
RELIGION																
Catholic	3.75	3.15	54.9	17.6	5.93	18.2	84	51.90	71.7	4.98	3.14	2.46	0.68	2.52	0.62	1064
Protestant Christian	3.65	3.09	55.8	19.8	5.66	21.8	61	54.55	67.1	5.73	2.99	2.41	0.58	2.41	0.58	1051
Hindu	3.68	3.20	48.2	25.2	8.06	33.2	63	38.57	65.9	6.77	3.33	2.45	0.88	2.51	0.82	731
Muslim	3.57	2.98	50.2	19.9	7.39	17.6	19	47.32	73.7	5.66	3.18	2.34	0.84	2.45	0.73	194
PROB VALUE	0.199	0.579	0.000	0.000	0.163	0.099		0.000	0.373	0.000						
RESPONDENT'S EDUCATION																
0-6 years	3.71	3.15	52.7	31.3	11.29	39.4	32	32.37	57.4	6.50	3.78	2.55	1.23	2.55	1.23	563
7-8 years	3.77	3.13	52.1	25.0	8.13	27.0	37	49.70	69.2	6.66	3.48	2.48	1.00	2.61	0.87	635
Completed primary	3.72	3.13	53.4	18.3	5.03	26.4	65	45.37	69.8	4.98	3.10	2.69	0.41	2.71	0.39	865
Some secondary	3.58	3.06	55.9	17.0	4.29	15.9	55	54.33	71.3	4.16	3.02	2.51	0.51	2.53	0.49	522
Completed secondary	3.63	3.19	52.5	8.0	3.23	12.0	39	59.45	86.2	3.23	2.46	2.23	0.23	2.25	0.21	456
PROB VALUE	0.184	0.895	0.540	0.000	0.000	0.031		0.000	0.000	0.000						
UNION STATUS																
Married	3.71	3.16	51.6	20.4	6.46	22.3	136	45.36	72.0	5.87	3.57	2.86	0.71	2.90	0.67	1840
Common-law	3.61	3.09	58.0	24.7	8.50	27.4	54	36.95	61.4	5.64	4.20	3.06	1.14	3.10	1.10	539
Visiting	3.71	3.11	54.3	16.6	4.69	20.7	38	64.38	60.8	4.42	1.89	1.50	0.39	1.58	0.31	661
PROB VALUE	0.000	0.800	0.007	0.001	0.030	0.004		0.039	0.000	0.008						

WORKING NOW ?	3.85	3.14	48.9	40.5	14.7	34.4	93	48.7	66.7	5.52	2.88	1.54	1.34	2.32	.56	859
Now working	3.92	3.20	48.9	48.9	27.0	43.8	260	27.8	45.7	6.40	5.44	2.65	2.79	4.08	1.36	1129
Not now working			1.000	0.000	0.000	0.112	NA	0.000	0.010	0.009						
PROB VALUE	0.309	0.712														
WORKED BEFORE 1ST BIRTH ?	3.83	3.10	51.4	41.4	18.2	39.1	179	41.7	57.7	5.38	4.24	2.37	1.87	3.35	.89	1054
Worked before 1st birth	3.95	3.30	46.7	49.2	25.3	43.7	174	30.0	50.8	6.68	4.49	2.12	2.37	3.41	1.08	934
Did not work before 1st			0.015	0.001	0.000	0.384	NA	0.001	0.080	0.000						
PROB VALUE	0.094	0.137														
WORKED AFTER 1ST BIRTH ?	3.85	3.24	48.4	42.9	20.8	43.1	232	38.8	56.2	6.15	4.58	2.42	2.16	3.58	1.00	1323
Worked after 1st birth	3.98	3.14	49.2	52.6	23.6	38.0	121	33.3	47.7	5.36	4.24	2.10	2.14	3.24	1.00	665
Did not work after 1st			0.700	0.000	0.184	0.358	NA	0.161	0.072	0.043						
PROB VALUE	0.111	0.447														
HUSBAND/PARTNER'S EDUCATION	4.24	3.21	54.0	48.7	29.4	40.5	37	17.6	44.0	7.32	6.25	2.96	3.29	4.08	2.17	225
0-5 years	4.09	3.18	50.0	51.8	26.8	51.2	41	22.0	52.6	6.67	4.47	2.07	2.40	3.88	.59	268
6-7 years	3.87	3.27	48.3	48.9	23.9	49.7	197	31.2	52.1	5.53	4.58	2.28	2.30	3.58	1.00	1045
Completed primary	3.64	3.09	47.4	28.7	8.0	15.4	78	51.5	67.2	3.13	2.90	2.17	.73	2.56	.34	450
Secondary or higher	0.000	0.623	0.301	0.000	0.000	0.000	NA	0.000	0.014	0.000						
PROB VALUE																
HUSB/PARTNER'S OCCUPATION	3.74	3.31	48.7	29.1	8.0	19.3	57	51.1	69.5	4.18	3.49	2.47	1.02	2.91	.58	311
Prof-tech-clerical	3.71	2.99	44.0	40.8	17.3	32.6	43	37.0	52.4	5.24	3.52	1.95	1.57	2.91	.61	281
Sales or services	4.16	3.20	53.7	54.7	29.5	50.0	52	18.2	36.8	7.16	5.46	2.70	2.76	4.43	1.03	416
Agricultural	3.87	3.18	48.4	47.2	23.5	50.0	201	34.6	57.7	5.50	4.55	2.10	2.45	3.35	1.20	980
Skilled or unskilled manual	0.000	0.488	0.037	0.000	0.000	0.000	NA	0.000	0.000	0.000						
PROB VALUE																
WILL CHILDREN CONTRIBUTE	3.67	2.93	50.6	33.8	15.8	27.1	48	40.8	65.5	5.29	4.60	3.00	1.60	3.54	1.06	245
H/HOLD WHEN START WORK?	3.86	3.25	49.8	46.9	26.4	43.6	280	34.7	52.3	6.08	5.88	3.01	1.87	4.58	1.30	1130
Expects no contribution	0.019	0.310	0.346	0.000	0.000	0.096	NA	0.430	0.063	0.612						
Yes, expects contribution																
PROB VALUE																
EXPECTED SOURCES OF MONEY	3.84	3.16	49.8	41.4	18.0	40.9	186	38.1	55.1	4.91	4.33	2.37	1.96	3.38	0.95	1115
SUPPORT IN OLD AGE	3.95	3.21	47.7	49.8	26.1	41.8	165	33.3	53.2	6.91	5.40	2.81	2.59	4.06	1.34	867
Expects no contribution	0.098	0.749	0.000	0.008	0.002	0.828	NA	0.319	0.318	0.000						
Yes, expects contribution																
PROB VALUE																

NOTES: Data in columns 1-3 and 6-7 are "standardized" via regression for population composition by number of living children and age, using number living, number living squared, single years of age, single years of age squared as control variables. Data in columns 4-5 are similarly standardized via regression for (1) age at first union (AGEFU), (2) AGEFU squared, (3) months elapsed since first union began (MESFUB), and (4) MESFUB squared; these controls are intended to adjust for the fact that women with longer periods in union are more likely to have had unwanted births.

Table 74 Some indices of reproductive motivation and reproductive behaviour by socio-economic group: Jamaica

	DESIRED FAMILY SIZE (Adjusted: see note)		PER CENT WANTING MORE CHILDREN	ADJUSTED PER CENT WITH UNWANTED LAST BIRTH:	PROPORTION OF BABIES BORN 0-12 MONTHS BEFORE SURVEY THAT WERE "UNWANTED":	ADJUSTED PER CENT CURRENTLY USING ANY CONTRACEPTIVE AMONG WOMEN WHO WANT --		AVERAGE NUMBER OF BIRTHS TO WOMEN AGED 40-49	TOTAL FERTILITY RATE 0-24 MONTHS BEFORE SURVEY (see note), BASED ON:				NUMBER OF CURRENTLY IN UNION WOMEN#b			
	(1)	(2)				(3)	(4)		(5)	(6)	(7)	(8)		(9)	(10)	(11)
ALL JAMAICA	3.89	3.18	48.9	45.4	21.7	41.4	353	36.4	54.0	4.39	2.28	2.11	3.40	.99		1988
NUMBER OF CASES	1988	466	1866	1792	1931	353	353	879	631	465						1988
RESIDENCE STATUS																
Resides in rural area	4.09	3.19	51.5	48.6	25.2	42.2	185	27.7	49.1	4.99	2.58	2.41	3.97	1.02		1055
Born rural, resides urban	3.71	3.20	46.5	43.0	19.3	44.4	117	42.8	59.0	3.84	1.94	1.90	2.89	.95		662
Born urban, resides urban	3.52	3.12	45.0	38.0	13.0	31.4	51	47.2	61.8	3.45	1.83	1.62	2.42	1.03		271
PROB VALUE	0.000	0.962	0.007	0.001	0.000	0.272	NA	0.000	0.012	0.000						
RELIGION																
Church of God	3.97	3.17	51.9	49.6	27.1	45.6	90	26.4	51.0	5.30	2.38	2.92	4.05	1.25		410
Anglican-Methodist	3.82	3.34	46.7	38.3	16.2	46.6	52	48.3	58.3	3.55	2.09	1.46	2.89	.66		337
Catholic	3.75	2.88	43.1	39.3	14.6	39.3	28	46.0	65.2	3.03	1.58	1.45	2.04	.99		170
Bapt-Morav-Other Protestant	3.84	3.24	49.2	47.0	22.7	43.0	151	36.1	52.0	4.58	2.43	2.15	3.59	.99		919
No religion	3.69	2.92	50.9	46.5	20.5	40.6	32	29.4	51.8	4.39	2.28	2.11	3.42	.97		152
PROB VALUE	0.174	0.286	0.959	0.010	0.001	0.513	NA	0.000	0.294	0.006						
RESPONDENT'S EDUCATION																
0-5 years	4.16	3.49	56.4	51.9	26.2	63.6	33	34.3	42.4	4.65	1.97	2.68	3.65	1.00		262
6-7 years	4.04	3.05	47.4	53.6	29.3	48.2	85	23.1	54.4	5.41	2.55	2.86	4.01	1.40		441
Completed primary	3.87	3.30	49.2	46.1	22.5	45.5	154	30.9	54.7	4.51	2.32	2.19	3.45	1.06		828
Secondary or higher	3.63	3.08	45.9	30.1	9.1	17.3	81	49.7	59.8	3.03	2.13	.90	2.74	.29		457
PROB VALUE	0.000	0.222	0.018	0.000	0.000	0.000	NA	0.000	0.139							
UNION STATUS																
Married	3.87	2.94	48.6	39.1	16.9	40.0	95	37.6	56.8	4.67	3.04	1.63	3.86	.81		801
Common-law	4.01	3.37	51.5	50.7	25.8	43.2	146	29.6	49.9	5.12	2.49	2.63	3.63	1.49		695
Visiting	3.76	3.13	45.9	48.9	24.0	40.2	112	42.7	56.3	4.49	2.28	2.21	3.52	.97		492
PROB VALUE	0.028	0.077	0.087	0.000	0.000	0.849	NA	0.004	0.247	0.280						
R'S LATEST OCCUPATION																
Prof-Tech-Admin	3.62	3.02	45.4	24.4	4.6	8.0	25	62.4	78.2	3.03	2.44	.59	2.78	.25		176
Clerical-White Collar Sales	3.74	3.23	47.9	29.5	7.3	27.7	47	45.2	57.4	3.10	1.88	1.22	2.38	.72		352
Services-Blue Collar Sales	3.95	3.15	48.3	52.1	26.0	50.7	138	31.3	56.7	4.63	2.06	2.57	3.53	1.10		744
Skilled or unskilled manual	3.76	3.13	49.0	47.3	23.8	40.0	55	32.6	49.3	5.05	2.50	2.55	3.68	1.37		271
Agricultural	4.35	3.49	60.2	46.4	26.6	60.0	15	15.7	46.8	5.25	3.09	2.16	3.95	1.30		146
Never worked	3.97	3.22	48.6	54.2	32.1	41.1	73	24.3	41.4	5.33	2.34	2.99	4.04	1.29		299
PROB VALUE	0.000	0.911	0.053	0.000	0.000	0.000	NA	0.000	0.003							

UNION STATUS

Married	4.22	3.27	44.4	48.2	20.0	33.4	413	25.6	43.3	6.78	4.57	2.90	1.67	3.89	0.68	2240
Common-law	4.31	3.43	47.7	46.7	26.5	41.0	100	10.1	30.6	6.23	6.12	3.38	2.74	4.84	1.28	423
Visiting	4.58	3.72	45.0	35.1	18.0	29.6	71	37.5	37.6	4.69	3.41	2.05	1.36	3.04	0.37	434
PROB VALUE	0.000	0.000	0.317	0.000	0.003	0.242		0.000	0.008	0.000						

R'S LATEST OCCUPATION

Prof-clerical-shop assistnt	4.30	3.55	50.7	31.1	13.7	20.6	97	42.8	51.2	4.65	3.87	2.86	1.01	3.35	0.52	506
Services-street vendors	4.35	3.51	49.4	46.0	22.6	36.6	131	18.3	35.2	6.75	4.81	2.88	1.93	3.87	0.94	658
Skilled-unskilled manual	4.21	3.53	43.1	45.2	17.5	34.3	35	32.4	46.9	6.17	3.98	2.50	1.48	3.28	0.70	249
Agriculture	4.44	3.01	44.8	61.2	25.6	51.4	37	15.6	33.3	7.31	5.25	2.50	2.75	4.26	0.99	281
Never worked	4.22	3.33	41.1	49.0	21.7	35.6	284	21.0	41.6	6.70	4.17	2.49	1.68	3.50	0.67	1403
PROB VALUE	0.110	0.199	0.000	0.000	0.000			0.000	0.014	0.000						

WORKING NOW ?

Now working	4.40	3.67	49.1	43.1	16.7	30.3	119	37.0	46.4	6.56	3.60	2.31	1.29	3.05	0.55	877
Not now working	4.23	3.33	43.3	47.8	22.2	35.3	465	21.8	39.5	6.52	4.66	2.80	1.86	3.87	0.79	2220
PROB VALUE	0.006	0.003	0.000	0.046	0.001	0.306		0.000	0.045	0.903						

WORKED BEFORE 1ST BIRTH ?

Worked before 1st birth	4.33	3.34	47.9	39.7	19.1	27.9	204	34.4	38.9	5.86	4.44	2.96	1.48	3.82	0.62	1139
Did not work before 1st	4.25	3.53	43.1	50.2	21.5	37.6	380	20.6	41.8	7.10	4.33	2.52	1.81	3.58	0.75	1958
PROB VALUE	0.140	0.063	0.002	0.000	0.112	0.018		0.000	0.361	0.000						

WORKED AFTER FIRST BIRTH ?

Worked after 1st birth	4.29	3.40	49.9	46.4	20.6	34.8	201	30.8	41.8	6.91	4.77	2.95	1.82	3.94	0.83	1199
Did not work after 1st	4.28	3.47	41.8	46.5	20.7	33.9	383	24.0	40.6	6.03	4.09	2.55	1.54	3.49	0.60	1898
PROB VALUE	0.821	0.549	0.000	0.964	0.933	0.841		0.015	0.698	0.002						

HUSBAND/PARTNER'S EDUCATION

0-5 years	4.24	3.19	41.2	57.0	25.1	41.4	99	11.0	34.1	6.97	4.40	2.51	1.89	3.72	0.68	587
6-7 years	4.21	3.26	40.4	58.7	26.7	53.8	93	20.8	38.7	7.58	4.37	2.17	2.20	3.48	0.89	584
Completed primary	4.29	3.46	49.2	48.1	19.8	39.3	150	18.7	44.1	6.34	4.67	2.95	1.72	3.83	0.84	866
Incomplete secondary	4.30	3.38	42.5	37.9	20.3	28.4	134	26.5	39.5	5.82	4.53	2.78	1.75	3.82	0.71	549
Completed secondary	4.37	3.58	49.4	21.8	9.5	11.1	108	43.5	56.4	4.14	3.70	3.04	0.66	3.45	0.25	511
PROB VALUE	0.442	0.127	0.000	0.000	0.000	0.000		0.000	0.001	0.000						

HUSB/PARTNER'S OCCUPATION

Prof-tech-admin-clerical	4.30	3.53	50.4	31.5	13.2	20.2	84	39.7	54.7	5.44	3.68	2.75	0.93	3.43	0.25	496
Services-sales	4.29	3.59	45.8	43.3	17.4	24.5	106	28.4	44.1	6.21	4.31	2.84	1.47	3.57	0.74	534
Agriculture	4.31	3.26	42.1	57.7	25.2	43.1	123	13.9	36.1	7.35	4.74	2.45	2.29	3.79	0.95	692
Skilled-unskilled manual	4.25	3.34	43.9	46.6	22.1	38.4	271	23.1	39.7	6.51	4.55	2.76	1.79	3.79	0.76	1375
PROB VALUE	0.812	0.081	0.005	0.000	0.000	0.000		0.000	0.003	0.001						

NOTE: For several variables, demographic controls are instituted, as follows: Columns 1,3,8,9 are adjusted for number of living children (NLC), NLC squared, age, age squared. Columns 2 and 6 are adjusted for age at first union (AGFU), AGFU squared, months elapsed since first union began (MESFUB), and MESFUB squared. Columns 4 and 5 are adjusted for age and age squared. See text for description of how wanted and actual total fertility rates estimated.

Table 73 Some indices of reproductive motivation and reproductive behaviour by socio-economic group: Guyana

	DESIRED FAMILY SIZE (Adjusted: see note)		PER CENT WANTING MORE CHILDREN	ADJUSTED PER CENT WITH UNWANTED LAST BIRTH:		PROPORTION OF BABIES BORN 0-12 MONTHS BEFORE SURVEY THAT WERE "UNWANTED":		ADJUSTED PER CENT CURRENTLY USING ANY CONTRACEPTIVE AMONG WOMEN WHO WANT ---			AVERAGE NUMBER OF BIRTHS TO WOMEN AGED 40-49	TOTAL FERTILITY RATE 0-24 MONTHS BEFORE SURVEY (see note), BASED ON:				NUMBER OF CURRENTLY IN UNION WOMEN
	Women with 0-59 months elapsed	All since first women union began		0-36 months	At any before time survey	No of births	Per cent births	More children	No more children	All births (ie actual TFR)		Wanted TFR, defn.1	Gap 11-12 defn.2	Wanted TFR, Gap 11-14		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
ALL GUYANA	4.28	3.41	44.9	49.5	20.6	34.2	584	26.2	41.0	6.54	4.37	2.69	1.68	3.66	0.71	3097
NUMBER OF CASES	3097	737	2936	2235	2967	584	584	1290	1138	646						
RESIDENCE STATUS																
Rural born, resides rural	4.28	3.34	43.7	51.6	22.6	37.2	395	19.8	39.7	7.24	4.54	2.72	1.82	3.81	0.73	2015
Rural born, resides urban	4.29	3.63	49.2	36.3	17.6	29.7	101	31.3	42.5	5.28	4.25	2.77	1.48	3.60	0.65	563
Urban born, resides urban	4.27	3.39	45.0	35.7	16.2	26.1	88	39.9	47.0	5.30	3.98	2.64	1.34	3.39	0.59	519
PROB VALUE	0.994	0.029	0.007	0.000	0.000	0.055		0.000	0.215	0.000						
ETHNICITY																
Non-Indian	4.48	3.71	50.3	38.7	19.7	33.0	270	30.2	35.8	5.91	4.86	3.08	1.78	4.07	0.79	1383
Indian	4.12	3.15	40.6	52.4	21.4	35.4	314	21.9	43.7	7.17	4.08	2.44	1.64	3.44	0.64	1714
PROB VALUE	0.000	0.000	0.000	0.000	0.256	0.549		0.001	0.009	0.000						
RELIGION																
Catholic	4.39	3.51	48.4	34.1	18.1	24.3	74	34.1	39.5	5.78	4.57	2.99	1.58	3.88	0.69	372
Other Christian	4.45	3.70	50.4	40.6	19.6	33.6	229	28.3	35.9	5.92	4.77	3.08	1.69	3.99	0.78	1218
Hindu	4.13	3.16	39.1	55.0	22.5	38.6	220	20.1	42.8	6.64	4.08	2.34	1.74	3.37	0.71	1168
Muslim	4.08	3.15	41.4	49.9	20.7	32.8	61	24.3	47.5	6.48	4.13	2.55	1.58	3.55	0.58	339
PROB VALUE	0.000	0.000	0.000	0.000	0.209	0.156		0.001	0.059	0.000						
RESPONDENT'S EDUCATION																
0-5 years	4.19	2.89	38.5	66.2	29.6	56.6	76	16.6	34.8	7.17	4.85	2.19	2.66	3.95	0.90	530
6-7 years	4.28	3.12	40.1	57.6	22.5	43.0	114	13.2	42.4	6.95	4.27	2.46	1.81	3.49	0.78	741
Completed primary	4.27	3.54	48.9	48.6	21.8	47.9	96	25.0	36.8	6.40	4.18	2.57	1.61	3.36	0.82	709
Incomplete secondary	4.32	3.48	44.7	28.4	16.9	25.1	223	21.7	45.3	5.50	4.73	3.20	1.53	4.40	0.33	766
Completed secondary	4.20	3.50	56.4	18.1	6.8	8.0	75	48.8	62.4	3.00	3.70	2.88	0.82	3.22	0.48	351
PROB VALUE	0.555	0.008	0.000	0.000	0.000	0.000		0.000	0.002	0.000						

levels. Doubt as to whether definition 1 should be taken at face value arises as a result of the discussion in chapter 1 on the consistency between whether last birth wanted and whether desired family size exceeds actual, and also because there are no estimates of reliability for the wantedness of last birth variable. In addition, as stated earlier, if timing mistakes were avoided currently but made up in the long run, the definition 2 is the better estimate for a lifetime wanted family size.

## 6.2 DETAILED SOCIO-ECONOMIC DIFFERENTIALS

We now turn our attention from the aggregate comparisons in table 72 to specific differentials in tables 73, 74 and 75 for the three countries.

### Residence status

The differentials by residence status for Guyana in table 73 show little difference in reproductive motivation for Guyana as measured by desired family size, proportions wanting more children or total wanted fertility rate (see columns 1–3, column 12), though there are substantial differentials in the TFR (column 11), in unwanted fertility (column 6) and in proportions using contraception for childspacing purposes (column 8).

Jamaica is unlike Guyana in having substantial differentials by residence status in reproductive motivation as measured by desired family size and wanted TFR (compare tables 73 and 74) but like Guyana in having substantially lower unwanted fertility among urban born urban residents, and higher contraceptive use for spacing purposes and a lower TFR 0–2 years before survey.

Table 75 shows that the differentials by residence status for Trinidad and Tobago are very weak with regard to desired family size but indicate a higher wanted total fertility rate among rural born rural women (2.63), an especially high rate among urban born rural residents (3.00), and comparatively low wanted fertility rates among urban born urban residents and rural born urban residents (2.19 and 2.28 respectively). The actual TFR is comparatively high among rural residents, being 3.46 among the rural born and 3.79 among the urban born compared with 3.02 and 2.70 among rural born urban residents and urban born urban residents. There is very little difference by residence status in Trinidad and Tobago in percentages using contraception to stop childbearing, but slightly lower use for spacing purposes among rural born rural residents (44 versus 51–55 per cent). In Guyana and Jamaica the rural–urban differential in use for spacing purposes is in the same direction but much larger.

### Ethnicity

Both Trinidad and Tobago and Guyana coded their respondents with respect to ethnicity, and in both cases there are statistically significant ethnic differences in desired family size and in proportions wanting more children, with Indian respondents of Asian origin having significantly lower desires. In Trinidad and Tobago, however, unlike Guyana, Indians and non-Indians have

very similar current fertility levels and wanted total fertility rates, though Indian women have slightly high percentages with current unwanted pregnancies than non-Indians. In Guyana, on the other hand, Indians have substantially lower wanted and actual total fertility rates, along with somewhat higher contraceptive use for stopping purposes and lower use among women who want additional children; this, however, cancels out approximately in the net, leading to the question of how these lower rates are achieved – presumably either by longer breastfeeding or greater abstinence, lower contraceptive failure or higher abortion.

### Religion

In Trinidad and Tobago and in Guyana religion is intimately associated with ethnicity, and in Jamaica religious denomination is often closely linked with other social background variables such as likelihood of living in the city or the countryside and amount of education. While the differentials observed in reproductive motives and behaviour between religious groups in Guyana and in Trinidad and Tobago undoubtedly reflect the differentials observed by ethnicity, it is interesting that in Jamaica and Guyana respondents who are Catholic do not have higher preferences or higher fertility than other Christians, while in Trinidad they have both higher preferences (columns 1, 2 and 12) and a higher total fertility rate, despite relatively high contraceptive use (columns 8 and 9). Perhaps this relates to the proportion Catholic in the population as a whole (12 per cent of the Guyanese sample, 9 per cent of the Jamaican and 35 per cent in Trinidad and Tobago).

### Respondent's education

Guyana and Trinidad and Tobago share relatively weak differentials in reported desired family size by woman's education (columns 1 and 2) but in Trinidad and Tobago there are quite notable differentials by education in the wanted TFR, between 2.5 and 2.7 among women with less than secondary, 2.5 among those with some secondary, and 2.2 among those with completed secondary, though in Guyana the wanted TFR does not differ systematically by education, being no lower among the most educated women. In Jamaica, on the other hand, there are quite strong educational differentials in self-reported desired family size among all women but no clear differentials in wanted total fertility rates.

While the relationship between education and family size preferences is ambiguous or weak in all three countries, education is strongly related to the TFR in Jamaica and Trinidad and Tobago in the expected inverse direction. In Guyana the relationship is unusual: women with completed secondary have substantially lower fertility than all other educational groups, and among women with less than a full secondary education there is a saddle-shaped relationship between TFR and increasing education. In all three countries, the association between rising education and falling total fertility rates appears to be at least partly explained by a combination of substantially higher contraceptive use both among women who want more and those who want no more and correspondingly lower levels of unwanted fertility.

unskilled manual' had the second highest total fertility rate. In both these high fertility groups, proportions contracepting were relatively low and unwanted fertility relatively high.

### 6.3 CONCLUSIONS

One main conclusion emerging from these detailed comparisons is that the wanted fertility rate is much more apt to indicate differentials between social groups than is desired family size. A drawback, of course, is that it is not particularly easy to incorporate wanted total fertility rates into multivariate models.

Another and more important conclusion suggested by the data is that in all three countries, social differentials in recent fertility are heavily accounted for by variations in contraceptive use and in success in avoiding unwanted fertility, rather than by any large differentials in reproductive motivation, as measured in the surveys. In support of this conclusion, table 76 presents a rather unorthodox correlation analysis to summarize the covariation of the indicators in tables 73–75, where each social category in each table is regarded as a case, so that there are 37 observations for Guyana, 39 for Jamaica and 38 for Trinidad and Tobago. The correlations shown in table 76 are based on this approach.

We must point out that these correlations violate one of the fundamental assumptions of correlation analysis

(namely that each observation should be independent) and are no more than a summary way of looking at covariation. Nevertheless, they are all highly consistent with what ought to be the case, namely that in all three cases total fertility rate is inversely related to contraception, unwanted fertility is inversely related to contraception and unwanted fertility is directly related to the total fertility rate.

It is noteworthy that desired family size is inconsistently related to all the other indicators at this zero order level, taking on different signs and different magnitudes in each of the countries. In Trinidad and Tobago and in Guyana desired family size is negatively related to unwanted fertility, while in Jamaica it is positively related (–0.12, –0.16 and +0.76 respectively). In Jamaica it is positively related to TFR, but in Guyana and Trinidad the coefficients are close to zero. It is inconsistently related to the proportion using contraception for spacing purposes (positive in Guyana, heavily negative in Jamaica, almost zero in Trinidad and Tobago).

While these figures prove nothing of a causal nature, they do suggest quite strongly that variation in unwanted fertility may sometimes be much more important than desired family size in causing major variation in the total fertility rate. This suggestion could be more adequately tested in a cross-country analysis using the categories of a single nominal variable as the unit of analysis (eg the rural–urban dichotomy would provide two observations per country), which should serve to maximize the variance while providing a fairly large number of cases.

**Table 76** Correlations between several indicators of reproductive motivation and reproductive behaviour (the social category is unit of analysis)

	DFS	UF	SPA	STO	TFR
<b>A Guyana</b>					
DFS Desired fam. size (all women)	1.00	–0.16	+0.24	–0.26	+0.08
UF % unwanted fert. 0–3 years			–0.88	–0.86	+0.63
SPA % contracepting (spacers)				0.72	–0.66
STO % contracepting (stoppers)					–0.69
TFR Total fertility rate					1.00
N = 37 (social categories)					
<b>B Jamaica</b>					
DFS Desired fam. size (all women)	1.00	+0.76	–0.82	–0.72	+0.61
UF % unwanted fert. 0–3 years			–0.90	–0.84	+0.69
SPA % contracepting (spacers)				+0.86	–0.76
STO % contracepting (stoppers)					–0.63
TFR Total fertility rate					1.00
N = 39 (social categories)					
<b>C Trinidad and Tobago</b>					
DFS Desired fam. size (all women)	1.00	–0.12	–0.01	–0.22	–0.00
UF % unwanted fert. 0–3 years			–0.68	–0.48	+0.43
SPA % contracepting (spacers)				+0.55	–0.69
STO % contracepting (stoppers)					–0.35
TFR Total fertility rate					1.00
N = 38 (social categories)					



## 7 Summary and Conclusions

At the time of writing, fertility preference measurement and analysis remains one of the most controversial issues in contemporary demography. The analysis presented in this report has used a variety of alternative approaches to analysing preference data and has been heavily concerned with pitfalls, biases and trying to decide what is the most plausible interpretation of the data. Much effort has gone into drawing the firmest possible conclusions instead of hedging and qualifying, though in interpreting some issues it is impossible to be absolutely firm, since we lack the necessary data to confirm or disconfirm what seems the likeliest interpretation.

### **Preferences for children of a given sex and child mortality**

A substantial amount of the literature on reproductive motivation has focused on gender preference. The findings presented in chapter 3.3 for the three countries considered here indicate that preferences for children of a given sex are at most marginal in raising the number of births wanted. One useful feature of wanted fertility rates is that the estimates are automatically adjusted for sex preferences.

Another topic frequently addressed in the fertility preference literature is the possibility that higher levels of child mortality tend to raise the preferred number of births through three separate effects, these being (1) a 'replacement' effect whereby there is a desire to replace desired living children who die, (2) an 'insurance' effect, whereby parents upwardly adjust their desired stopping point in order to ensure having some desired minimum number of progeny, (3) a strictly biological effect that operates when young babies die, namely that women cease breastfeeding earlier than they would otherwise, and hence shorten the next birth interval.

It is noted that the wanted total fertility rate estimates already completely account for these three effects. It is also noted that since child mortality ranges between quite low and moderate levels in the three countries under consideration, only very negligible effects can be expected on preferences.

### **Time trends in fertility preferences and contraception**

Chapter 2.3 presented fragmentary yet intriguing indications suggesting that preferences as measured by desired family size and proportions wanting more children have changed little in Jamaica between 1953 and 1979, while contraceptive prevalence has risen from about 5 to 55 per cent over the same time period. Similarly, in Trinidad and Tobago, preferences seem to have changed little between surveys in 1970 and 1977, while comparable measures of prevalence rose from 44 to 54 per cent. These

findings cast doubt on the argument that preference data are so ephemeral that the results of the present analysis are hopelessly out of date. Instead, the results support the thesis that when preferences are low to begin with, substantial changes in contraception can take place with little or no alteration in measured preference, though presumably the intensity and salience of preferences (unmeasured in the surveys at hand) quite possibly do change as individuals move from doing nothing about their preferences to implementing them.

A second implication of these results on time trends in contraception and preferences is that they provide further evidence to undermine the argument that when contraceptive use is negligible or non-existent, low preferences are implausible.

### **Socio-economic differentials in actual fertility and fertility preferences**

Obviously, actual fertility will differ sharply across different social groups if the groups have very different reproductive desires and all groups successfully use contraception to achieve these desires. Equally obviously, however, even if preferences are identical in all social groups, fertility will differ sharply if some groups succeed much better than others in implementing their preferences.

Chapter 6 shows that actual fertility varies a great deal more between socio-economic groups than does preferred fertility, in all the three countries. It also indicates that much of the difference in actual fertility is attributable to differential success in controlling fertility. The lower fertility observed among women with more education and higher occupational status is largely explained by much lower unwanted fertility and substantially higher contraceptive use, and only marginally explained by lower preferences. One important implication of this result is to suggest that in the long run, the fertility of the less advantaged groups will tend to converge downwards to meet with that of the more advantaged groups, if one assumes a long-run tendency for women to implement their preferences.

Another important finding is that contraception for postponing purposes appears to have just as strong an impact on fertility as contraception for stopping purposes (see table 76).

Chapter 6 provides a fuller summary of the analysis of socio-economic differentials in preferences, fertility and contraception, while chapters 3 and 5 present detailed data on social differentials in desired family size, actual fertility, wanted fertility, proportions wanting more children and proportions with a recent unwanted birth, showing both unadjusted proportions and proportions adjusted using multivariate procedures.

## Regional differences

A description of regional differences in preferences, fertility and contraception is provided for Jamaica in chapter 3.4. Despite inadequate sample sizes for many of the geographic units, there is much to suggest very substantial regional variation in both preferences and implementation. This stands in stark contrast to the relative homogeneity of preferences among social groups. It suggests the value of larger sample sizes in the future, and even perhaps the insertion of one or two questions on preferences and contraception in censuses. Information on geographic units may be particularly useful to administrators since physical regions are administratively manageable entities.

## Variation in preferences by age and parity

The analysis of mean desired family size (based on the direct question on total number of children desired) indicated great variation with number of living children and very little variation with age, in all three countries (see chapter 2.2). There is no indication that younger women have genuinely lower number preferences, once number of living children is controlled for. One possible explanation is that preferences have changed little over time, while the other is that when preferences do change, they change equally in all age groups, which is plausible given the fact that regardless of age, people are exposed to the same economic and cultural environment at any given point in time.

The analysis of proportions wanting more children by age and number of living children (see chapter 2.2) showed the usual strong decline in desire for additional children as women have additional children, but also suggested that once number of children is controlled for, women become less likely to want additional children as they become older.

The analysis of desire for last birth by age and number of living children (see chapter 4.1) shows proportions not desiring the last birth rising very sharply with number of children living. It also reveals, interestingly enough, surprisingly high proportions not wanting the last birth among very young women with only one child in Jamaica, largely confined to those in non-legal unions.

## Effects on preferences of changing partners

Studies in the 1950s suggested that the highest fertility occurred among women who had just one conjugal partner, and was substantially lower among those with two or more partners, partly because women in non-residential unions had lower frequency of intercourse than those who were cohabiting, and also because women who changed partners typically lost several years' exposure time between dissolution of one partnership and entry to the next. A critical feature of this situation was that no one used contraception, so that higher exposure time automatically meant higher fertility.

There has been increasing evidence, however, that the advent of widespread contraception has already broken the simple direct linkage between higher exposure and higher fertility, since nowadays more and more couples are using contraception when they want no additional

children. Indeed, as this trend accelerates the possibility arises that if a child is desired each time a woman enters a new partnership, women engaging in several partnerships may be themselves motivated to have more children than those who remain with just one partner.

Chapter 3.2 tests the hypothesis that entry to a new partnership raises the likelihood of wanting an additional birth. It basically shows that after controlling for other factors, a woman's entry to a new partnership seems to slightly raise her likelihood of wanting another birth, has little effect on her likelihood of using contraception for stopping reasons, but is associated with substantially lower likelihood of using contraception to postpone the next birth, and involves a considerably higher likelihood of being currently pregnant. The data were not ideally suited for examination of the hypothesis, since we had no information on male desires, though recent research by Powell (1980) has suggested that men these days acquiesce to female desires. There is fairly clear indication, however, that entry to a new partnership has at least some marginal effect, both in elevating the female desire for more children and in elevating fertility as measured by proportions pregnant.

## Desired family size and wanted fertility levels

Probably the most important conclusion of the present report is that there is strong evidence that fertility would fall quite sharply in all three countries if women fully implemented their stopping and postponing preferences and avoided unwanted births by using contraception with 100 per cent effectiveness. This conclusion is supported both by the wanted total fertility rates presented in chapter 2.1 and the wanted crude birth rates presented in chapter 4.4.

A very crucial issue is how much of a fertility decline would occur under full implementation. The comparison of four different estimates of wanted crude birth rates in chapter 4.4 with the wanted total fertility rates in chapter 2.1 helps assure us that the reduction would be substantial.

## Proportional reductions in CBR and TFR

	Guyana	Jamaica	Trinidad & Tobago
Actual crude birth rate (CBR)	29	28	22
Actual CBR = 100.0	100	100	100
Wanted CBR version 1	66	56	77
Wanted CBR version 2	53	61	64
Wanted CBR version 3	65	69	76
Wanted CBR version 4	62	66	74
Total fertility rate (TFR)	4.37	4.39	3.13
Actual TFR = 100	100	100	100
Wanted TFR definition 1	62	52	77
Wanted TFR definition 2	84	77	79

Sources: Tables 65-68, table 59. Crude birth rates for 0-3 years before survey, total fertility rates for 0-2 years

The comparison also strongly supports the notion that the definition 2 wanted total fertility rate is an overestimate in all three countries, since it implies an appreciably smaller proportional reduction in fertility than any of the other indicators. On the other hand, the definition 1 wanted TFR in Jamaica appears a little on the low side, though it must be remembered that the estimates of the crude birth rate based on contraceptive adoption by women who wish to stop childbearing (ie versions 2-4) take no account of the fertility reduction that would occur if all those who wish to delay births also adopt contraception.

Unfortunately, women who wanted more children were not asked whether they wanted to postpone or have the next birth soon, but it is clear from the large amount of contraceptive use for postponing purposes that many women's desires to postpone are strong enough to motivate use of contraception for purposes of delaying births. The relatively small educational differentials in preference indicators such as wanted fertility rates and proportions wanting more children and the conventional measure of desired family size provide good grounds for assuming that postponement desires probably do not vary much by education and that therefore the potential level of contraceptive use for postponing purposes is at least as high as that observed among the most educated women; this implies a jump in contraceptive use among all women who want additional children from 26 to at least 47 per cent in Guyana, from 36 to at least 49 per cent in Jamaica, and from 50 to 57 per cent in Trinidad and Tobago (see tables 69-72).

Because preferences as measured in the WFS Caribbean surveys vary so little between the least and most educated, it seems fair to attribute most of the fertility differentials observed by education to differences in implementation of preference, and not to underlying differences in preference.

This raises an important related issue: why is there so much difference in implementation of preference between the least and most educated? One interpretation, which appeals to the present writer, is that more educated women have better access to contraception in a number of important respects. They are likely to know more contraceptive methods; they are less likely to misinterpret rumours concerning serious side effects and more likely to understand news stories on such potentially frightening topics as cancer risks; they are more likely to have overall faith in Western-style medicine; they are also likely to have better access to transportation, to travel more widely, and hence have lower travel costs; poorer women, on the other hand, probably have substantially more psychological difficulty in dealing with health professionals, who because of crowded clinic schedules must deal with more people

per unit of time, and hence answer fewer questions; poorer women are also probably often treated with less deference, face longer waiting times, and must overcome considerable shyness and embarrassment; further, in some instances clinics may operate on very limited time schedules, requiring the user to know and observe the hours, and to visit the clinic in spite of conflicting obligations. All of these are difficulties which most administrators are undoubtedly well aware of and which are extremely difficult to overcome given limited budgets for manning family planning clinics.

It may also be true that while high and low status women score about equal on our various measures of preference, low status women quite possibly have preferences of lower intensity, or are less conscious of their underlying preferences, or would be less inconvenienced if they did have another child. With these considerations in mind, it would seem useful to ask questions about intensity in future surveys, to see whether or not differential use is explained by differences in intensity.

If fertility reduction is the policy objective, these observations have important implications, namely that every effort should be made to upgrade contraceptive knowledge and reduce barriers to contraceptive use, and, at the same time, to increase the salience of preferences to stop and postpone among women who want no more or who would prefer to delay the next birth.

There can be very little doubt that stopping and postponing preferences do exist and are often sufficient to motivate contraceptive adoption, once information and physical access is provided. On the other hand, there are a large number of reasons to doubt that most individuals think in terms of desired family size, and to argue that indeed 'desired family size' norms come about as the result of, and not as the cause of, the implementation of desires to stop and postpone childbearing.

One reason for questioning the utility of the concept of desired family size in campaigns to promote implementation of preferences is the theory that many individuals are short-run planners when it comes to reproductive motivation. If correct, it implies that wherever stopping and postponing preferences are already conducive to low fertility, money for promotional campaigns is best spent (1) on getting women and men to seriously ask themselves whether they really want a pregnancy in the near future, (2) making sure that those who do not want an immediate pregnancy know of a conveniently located facility from which they can obtain a personally acceptable method of contraception (ie perceived as safe, effective, and not damaging to sexual pleasure), (3) allaying irrational fears about methods and making it clear there are many substitute methods for those who have fears.

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# Appendix A—Coding of Socio-Economic Background Variables

## GUYANA

### Residence

S007 = 1 and V702 = 1 Urban born, resides urban  
S007 = 2 and V702 = 1 Rural born, resides urban  
S007 = 2 and V702 = 2 Rural born, resides rural  
S007 = 1 and V702 = 2 Classified as rural born, rural resident

The few cases born urban and residing rural were classified as residing rural, rural born.

### Ethnicity

V707 = 2 Indian; V707 = 1, 3, 4, 5, 99 Non-Indian.

### Religion

V706 = 1 Catholic; V706 = 2,3 Other Christian; V706 = 4 Hindu;  
V706 = 5 Muslim.

### Respondent's education

S001 LE 55 or S001 = 9999 Primary, 0–5 years' education  
S001 = 60 or 70 Primary, 6–7 years' education  
S001 = 80 Completed primary (8 years)  
S001 = 85 or 6666 Incomplete secondary  
S001 GT 85 and LT 155 Completed secondary

### Union status

V107 = 1 Married; V107 = 2 Common law; V107 = 3 Visiting.

### Husband/Partner's education

Same as above, except substitute S002 for S001.

### Respondent's occupation

IF (V713 = 5 and [V708 GE 1 and LE 9]) V710 = V708 and S010 = S011  
V710 = 1, 2 or (V710 = 3 and S010 NE 326) Professional, clerical and  
shop assistant (as opposed to street vendors)  
V710 = 6 or 7 or S010 = 326 Services and street vendors  
V710 = 8 or 9 Skilled or unskilled manual labour  
V710 = 0 Never worked

Works now? (ie held job at time of interview)

V713 = 1, 2, 7 Yes; Else = No, did not hold job at time of interview.

Worked before 1st birth?  
V713 = 1, 3, 5, 7, 8 Yes;      Else = No, did not work before first birth.

Worked after 1st birth?  
V713 = 1, 2, 3, 4 Yes;      Else = No, did not work after first birth.

### Husband's occupation

V804 = 1,2 Professional or clerical      V804 = 3, 6, 7 Sales or services  
V804 = 8, 9 Skilled or unskilled manual      V804 = 4 or 5 Farmer or farm labourer

### JAMAICA

#### Residence

S713 = 1, 3 and V702 = 1 Urban born, resides urban  
S713 = 2 and V702 = 1 Rural born, resides urban  
S713 = 2 and V702 = 2 Rural born, resides rural

The few cases born urban and residing rural were classified as residing rural.

#### Religion

V706 = 7 Church of God;      V706 = 1, 3 Anglican-Methodist;  
V706 = 6 Catholic;      V706 = 8 No religion;  
V706 = 2, 4, 5, 9 Other Christian (Baptist, Moravian, Presbyterian, Congregational, Other Protestant).

#### Respondent's education

S701 < 6      0-5 years  
S701 = 6, 7      6-7 years  
S701 = 8 and V704 = 3      Completed primary  
V707 = 4      Secondary

#### Current union status

V107 = 1 Married;      V107 = 2 Common law;      V107 = 3 Visiting.

#### Respondent's current or most recent occupation

V713 = 5      L = SX03  
V713 = 7,8      L = SX05  
V713 = 2, 3, 4      L = SX04  
L GE 4730 AND LE 4790 L2 = 1

S702 = 1      Professional, technical, administrative  
S702 = 2 or (S702 = 3 and L2 NE 1)      Clerical and white collar sales  
S702 = 3 and L2 EQ 1 or S702 = 6, 7      Services and non-white collar sales  
S702 = 8, 9      Skilled or unskilled manual  
S702 = 0      Never worked  
S702 = 4, 5      Farm owner or farm labourer

Works now? (ie held job at time of interview)  
V713 = 1, 7, 2 Yes;      Else = No.

Worked before 1st birth?  
V713 = 1, 3, 5, 7, 8 Yes;      Else = No.

Worked after 1st birth?  
V713 = 1, 2, 3, 4 Yes;      Else = No.

#### **Husband/partner's education**

Same as respondent's, except substitute S802 for S701 and V802 for V704.

#### **Husband/Partner's occupation**

V804 = 1, 2      Professional, technical, administrative, clerical  
V804 = 3, 6, 7      Sales or services  
V804 = 4, 5      Farmer or farm labourer  
V804 = 8, 9      Skilled or unskilled manual

#### **Will children contribute to household when they start working? (Only asked if oldest is 13 or younger)**

S540 = 1      Yes  
S540 = 2      No  
S540 = 88, 99      Not asked

#### **Expected source of money support in old age (based on spontaneous replies to 'What means of financial support do you think you will have when you and your partner are old, or can no longer work for any other reason?')**

S541 = 0      Children not mentioned  
S541 = 1      Children spontaneously mentioned  
S541 = 8, 9      Not asked

### **TRINIDAD AND TOBAGO**

#### **Residence**

S701 = 1 and V702 = 1      Urban born, resides urban  
S701 = 1 and V702 = 2      Urban born, resides rural  
S701 = 0 and V702 = 1      Rural born, resides urban  
S701 = 0 and V702 = 2      Rural born, resides rural

#### **Ethnicity**

V707 = 1, 3, 4 Non-Indian;      Else = Indian

#### **Religion**

V706 = 5 Catholic;      V706 = 1, 2, 3, 4, 6, 7 Other Christian;  
V706 = 8 Hindu;      V706 = 9 Moslem

#### **Respondent's education**

X704 < 70 or X704 = 5555, 9999      0-6 years  
X704 = 70, 80      7-8 years  
X704 = 90      Completed primary  
X704 = 91, 6666      Incomplete secondary  
X704 > 91 and X704 < 155      Completed secondary



**Current union status**

V107 = 1 Married;    V107 = 2 Common law;    V107 = 3 Visiting

**Respondent's current or most recent occupation**

V710 = 1, 2    Professional, technical, administrative, clerical

V710 = 3, 6, 7    Sales, services

V710 = 8    Skilled crafts

V710 = 4, 5, 9    Farmer, farm labourer, unskilled labourer

V710 = 0    Never worked

Works now? (ie held job at time of interview)

V713 = 1, 7, 2    Yes; Else = No.

Worked before 1st birth?

V713 = 1, 3, 5, 7, 8    Yes; Else = No.

Worked after 1st birth?

V713 = 1, 2, 3, 4    Yes; Else = No.

**Husband/partner's education**

Same as for respondent, except substitute X802 for X704.

**Husband/partner's occupation**

V804 = 1, 2    Professional, technical, administrative, clerical

V804 = 3, 6, 7    Sales or services

V804 = 4, 5    Farmer or farm labourer

V804 = 8, 9    Skilled or unskilled manual