SEX COMPOSITION OF CHILDREN, SEX PREFERENCE FOR THE NEXT CHILD AND SUBSEQUENT FERTILITY DESIRE AND EXPECTATION

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CHAPTER I

PURPOSE AND ORGANIZATION

1) Introduction

In 1975, the Health Department's Management Services and Research Unit (MSRU) carried out a fertility survey in the Hutt Valley area of the Greater Wellington Region. It was followed by the publication of the "Family Growth Study" (FGS) which, according to the authors, is a preliminary report on contraceptive knowledge and practice, pregnancy planning, family size ideal and expectation, and other aspects of fertility behaviour. In the last section of the report, the authors, Reinken and Blakey (1976), pointed out the need for further analysis of the data. One matter of interest is the relationship between preference for sex balance and expectations for additional children. In their words: "Preferences for sex balance in family formation were recorded and correlation of these with comments on expectation for further children and expressions of opinion on ideal family size would be of interest" (Reinken and Blakey, 1976: 50).

The relationship between the existing sex composition of the family and the future desire and expectation to have additional children has been chosen as the topic of the present study in response to this recommendation. In general, this study investigates the effect of sex preference on fertility. Given a current trend toward smaller family sizes, the issue that needs more immediate attention, is which factor would exert more influence on fertility, sex preference or the norm of smaller family size. Although this study concentrates on more specific questions, to be later outlined, its findings will hopefully make a contribution to the understanding of this general issue.

The major questions that this study attempts to answer are: (a) Do married women in New Zealand have any sex preference; (b) If they do, would it be a preference for a specific sex, or for a gender balance, or a combination of both; (c) Would the sex preference be strong enough to affect subsequent fertility intentions and (d) How important is the sex preference, in comparison to socioeconomic and other socio-demographic factors, in affecting the subsequent fertility intentions?

2) Purpose of the Study

Using the data available from the Hutt Valley survey, this study aims to answer the previously outlined questions. From the total respondents of 863 married women between 20-45 years of age, only those of European stock, who had from one to four children and were contracepting at the time of the survey, were chosen. Sex preference and its effects on fertility were inferred from the analyses of the relationship between sex composition of the living children of the eligible respondents and their desire and expectation to have at least another child at some time.(1)

The analysis was carried out in two steps. The first examines the relationship between sex composition and the sex preference for the next child among those who wanted, as well as expected, another child. Hopefully, this answers the first three questions of whether sex preference exists, its characteristics, and its relation to subsequent fertility intentions. The second step examines those factors that account for differential desire and expectation regarding subsequent fertility among those of the same parity. Of major interest are the sex composition of the children and those socio-economic factors such as the mother's education, ideal and expected family size, her own and the husband's income and occupation. It is hoped that as a consequence of the second step, those characteristics will be identified that make some respondents at given parities more likely than others to continue their reproduction.

Although the problem area is sex preference and subsequent fertility, the study includes not only the relationship between sex composition and future desire and expectation, but also tries to probe further for other factors that might directly or indirectly affect subsequent fertility. Despite this apparently wide scope, it must be emphasised that, first and foremost, attention is given to the relationship between sex preference, sex composition and the inclination to have another child.

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(1) The question about sex preference for the next child was further asked only when respondents stated they wanted and expected another child.

3) Theory and Hypotheses

In the more developed parts of the world, it is a common observation that children are generally valued for psychological reasons, and that most couples want children of each sex. Exactly what mechanisms account for these patterns are not known. Presumably, they are due to the declining economic significance of children as well as the differential satisfactions derived from raising a girl as opposed to a boy or vice versa (Freedman, Freedman and Whelpton, 1960; Williamson, 1978). This might give rise to the attitude that sons and daughters are equally valuable, but in different ways. The above reasoning leads to the belief that there exists a preference for a balanced sex composition of the children. Due to the long history of son preference, one needs to add that this preference for gender balance might be characterised by a desire to have a more or less equal number of children of each sex, with some partiality for the odd numbered one to be a son. In short, it is assumed that there exists some preference for sons as well as for a more or less balanced sex composition of children.

The preference for gender balance can affect subsequent fertility, and hence, completed family size as well, if the actual sex composition is out of balance. This statement is viable only under the assumptions that the preference is stronger than the desire to strictly adhere to the family size ideal[2] and that there are no constraints that would stop a couple from having another child if they so intend. Other things held constant, those with children all of the same sex will be more likely than their balanced counterparts of the same parity to desire and expect at least another child. This relationship between sex composition and the contingency to have additional children should be characterised by a U-shaped curve, at each end of which are those who have either all boys or all girls.

Sex preference is by no means the only factor affecting the decision to have another child. Various other variables enter the

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(2) A number of findings indicate, however, that there is a tendency to rationalize actual family sizes by stating that they are ideal. Family size ideal is thus not a very reliable analytical concept (Clare and Kiser, 1951; Reinken and Blakey, 1976).

picture in the decision process; some may be consciously thought about, others might be part of a couple's make-up which influences their way of thinking. The family size ideal, the mother's age, her employment status, their financial situation, are some major factors that must be weighed against the desire to attain the ideal number of daughters and sons. Superimposed on the couple's reasoning process are such previous and present experiences as their education backgrounds and their subsequent occupational status. Both are believed to be the most important underlying factors accounting for the couple's socio-economic standing, their motivations, tastes and behaviours. As family size ideal and sex preference are an aspect of taste, there is every reason to suspect that they are as much shaped by the couple's education and occupation as their economic status.

Besides giving the qualifications to work in a higher occupational class, it is commonly observed that the modernizing effect of education results in more liberal outlooks and tastes (Fawcett, 1970). If this really is the case, it should follow that the more highly educated wives are likely, not only to be working and in better-paid jobs, but also to have less sex preference. The probability of them having another child should consequently be lower, compared to those at the same parity who do not work and those with less well-paid jobs. This might be explained in terms of the supposed incompatability of the work role and the maternal role in an urban environment, and also by the higher opportunity cost involved.

In summary, it is here argued that there exists a preference for a more or less balanced sex composition of children, with some bias for sons. At the same parity, this preference is more likely to affect the desire and expectation to have another child among couples whose children's sex ratio is high on the female side. The desire to continue reproduction, however, has to be weighed against various situational factors. They, in turn, are directly and indirectly affected by two underlying variables; education and occupation.

Hypothesis

In the light of the above arguments, this study attempts to test the following hypotheses:

1) Preference for sex balance is one of the factors influencing the desire and expectation to have another child. The sub-hypotheses are:

(a) At given parities, and among those who want and expect another child, those whose children are all of one sex would prefer the next one to be the opposite sex. In addition, among those who have an equal number of boy(s) and girl(s), there is a tendency to prefer another boy than another girl.

(b) At given parities, those with children all of the same sex are more likely than those with both sons and daughters to want and expect more children; the all-girl family is more likely to want and expect another child than the all-boy family.

2) The desire and expectation regarding subsequent fertility is also affected by ideal and actual family size. It is expected that:

(a) At given parities, those with higher ideal family size are more likely to want and expect another child.

(b) The lower the parity, the more likely the desire and expectation.

3) At given parities, the higher the mother's education, the less likely they will want and expect another child.

4) At given parities, working mothers are less likely to want and expect any more children. The ones in a higher occupational class are less likely than those in a lower occupational class to do so.

5) At the same parity, husband's income and occupation are likely to be negatively associated with subsequent fertility intentions.

4) Limitations of the Study

In relation to this study, the data are less than optimal in two respects. First the data were collected for purposes other than those used in this study. Therefore, this one suffers from the usual constraints of the secondary analysis of pre-collected data. That is, it puts a limit to the quantity of variables used and to what can be done with them. The second constraint arises from the present study's requirement that the sample have some particular characteristics;

namely, being Europeans, with one to four children, and able to control their fertility. This has substantially reduced our sample size and, at times, makes it far from adequate for certain detailed computations, due to low cell frequencies. These factors all limit the depth to which this study can go.

CHAPTER II

LITERATURE REVIEW

Introduction

Sex preference has long been an area of interest among social investigators, being evident in reported research on the subject since the early 1930's. The bulk of this research has been done in American or Asian contexts. In the U.S., the first investigation on this topic was reported by Winston (1932) and since then, over fifty scholarly studies have tried to assess American sex preferences (Williamson, 1976a). In the less-developed countries in the East, South, and Southeast Asia, sex preference has been studied only during the last decade or so, when family planning became an actively supported government policy. Recently, a few studies have been carried out in Brazil and Australia as well (Gray and Bortolozzi, 1977; Young, 1977).

The literature on sex preference and fertility can generally be classified into two types according to the approach each study takes. One approach is basically socio-biological and predictive. That is, it estimates the average family size a couple would eventually have, given their stated ideal sex composition and the average sex ratio at birth. Considering that this approach relies solely on the statements of sex preference, which are very changeable through the passage of time and events, such mathematical estimation might not be a very reliable index of actual fertility. The other approach is essentially sociological, as well as ex-post-facto in nature; it can be either longitudinal or cross-sectional. It is sociological in the sense that attempts are usually made to explore other factors besides sex composition of children, that might influence subsequent fertility and/or fertility intentions. Sometimes, controls are also made for these factors. In the longitudinal study, respondents are classified by parity and sex composition of their children before the parity progression ratio is calculated, given the actual subsequent fertility. This ratio reflects the probability for an added birth to the respondents at given parities (Wood and Bean, 1977: 132). The cross-sectional approach compares respondents of given parities and sex composition of the children in terms of their family size expectations and/or their intentions regarding subsequent fertility. The present

study follows this approach because of the limitations placed by the FGS data.

The following is a review of the research that has taken the sociological approach to the study of sex preference and fertility. As this study is only concerned with the European respondents, the review will exclude the research on non-Europeans. It results in the literature reviewed being disproportionately American, which is by no means a disadvantage. This is because the studies are recent and follow each other in a time series, so that later researchers learn from and expand on work of earlier researchers. These studies form two distinct pools of research; one was started by Clare and Kiser (1951), the other by Loyd and Gray (1969). They are here reviewed in temporal order.

Literature Review

The first large-scale study that triggered interest in the area of sex preference was reported by Clare and Kiser (1951), whose source of data was the Indianapolis Study conducted in 1941 by the committee on Social and Psychological Factors Affecting Fertility (Clare and Kiser, 1951: 440). The sample consisted of 1,444 relatively fecund white urban Protestant couples who finished at least the eighth grade, were married for the first time, between 1927 and 1929, and whose ages were under 30 for wife and under 40 for husband at the time of marriage. The authors found that sex preference had only a minor influence on family size and that the desire to have at least one child of each sex was the most common form of sex preference. They also reported that those whose first child, or first two children, were not of the sex preferred tended to have more children until they did have one or two of the sex they preferred. One major analytical obstacle the authors pointed out was the tendency toward ex-post-facto rationalization that might have confounded the effect of sex preference on family size.

Freedman, Freedman and Whelpton (1960) tested the hypotheses that at given parities those with children all of the same sex are more likely than others to expect additional children some time and to actually have gone on to have additional children. They utilized the data collected from the Growth of the American Family Study (GAF).

The 889 respondents chosen had the following characteristics: white women who were eighteen to thirty-nine years old in 1955, married only once, with two to four living children, who never had a child who died, and who were still fecund. They claimed that the first hypothesis was borne out at each parity, with those with children all of the same sex being at least 4 percent more likely than others to expect additional children. Although the results were not significant at the conventional 5 percent level, they were in the expected direction for every parity. Furthermore, as parities went up, a higher proportion of those with the same-sexed children expected additional children. This can be taken to indicate that the more imbalanced the sex composition, the more likely the desire to remedy it. The second hypothesis was also confirmed when it was found that there is a higher proportion of those whose first two children are of the same sex among the three-parity respondents than among those whose completed family size was two. Controlling for the wife's duration of work, her education, her religion, duration of marriage and success in family planning, they found that the relationship between sex distribution and fertility still held. Only one variable, religion, affected the relationship where sex preference was found to be more pronounced among Protestants than Catholics.

It should be noted that these authors approached the same problem from quite a different angle from that of Clare and Kiser (1951). By avoiding the statements given by the respondents about their desired sex compositions, Freedman, Freedman and Whelpton (1960) got around the problem of rationalization.(3) Although the authors compared those at the same parities who did not expect more children, with those who did expect some, in terms of the five control variables, no attempt was made to compare the sex composition of the children of these two groups at each parity. To do so would have provided support to the first hypothesis, if there was some evidence that there were more respondents, whose family sex compositions were out of balance, in the 'expect more' group than in the 'expect no more' group. If the

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(3) One potential weakness in their methodology however, is the arbitrary dichotomization of the control variables, since it is as likely to confound as to crystalize the relationship, if the dividing line is not drawn at the critical point.

evidence indicates otherwise, i.e., if there is little or no difference of sex composition of the children between the two groups at the same parities, the problem arises as to what factors account for the differential future expectations.

Loyd and Gray (1969) studied the effect of the sex of the first two children on ultimate family size, using data on sex composition of the immediate families of 690 White students at the Western Kentucky University in 1968-69. Among the 350 families with the first two children of the same sex, 61.5 percent conintued their childbearing, whereas 55.6 percent of the 340 families whose first two children were a boy and a girl did so. They reported that a statistically significant proportion stopped at two children when they had one child of each sex. Ayala and Falk (1971) argued that Loyd and Gray's use of chi-square was unjustified because the expected frequencies of those families with one child of each sex were taken from the actual frequencies of those with two children of the same sex. When tested by chi-square in a 2x2 contingency table, there was no statistically significant difference between the two types of family. Ayala and Falk themselves (1971) studied a sample of 423 completed families of college students in New England and found that sex composition of the first two children has no significant effect on the probability of the families having only two children. They concluded that sex of the first two children has no significant effect on family size in either their study or in that of Loyd and Gray.

Gray (1972) duplicated the earlier study (1969) using a larger sample of 1,105 families of students at Western Kentucky University. He found a statistically significant relationship between the sex of the first two children and family size, when a chi-square for a 2x2 contingency table was calculated (4.03 $P < .05$). Approximately 6 percent more families had additional children when the first two were of the same sex than when they were of different sexes.

Gray and Morrison (1974) studied the influence of the sex composition of children on family size among four subsets of population, namely: 1) Black college students at Kentucky State University and Tennessee State University; 2) Appalachian students at Morehead State University; 3) college students at Vanderbilt University and

4) predominantly Black trainees at a Kentucky-located Job Corps training center. Chi-square statistics showed that sex of the first two children had no significant effect on family size in the Black, the Appalachian and the Job Corps samples. In the Vanderbilt sample, sex composition of the first two children had a significant effect on family size ($P < 0.01$). When the first two were a boy and a girl, 17.2 percent fewer families had additional children than when the first two were of the same sex. Sex of the first three children did have a significant effect on family size in the Black and the Appalachian samples ($p < 0.05$). Although there was no direct indication that the norms of small family might have accounted for the effect of sex of the first two children on subsequent fertility, Gray and Morrison found, in the Vanderbilt sample, that where sex of the first two had a significant effect on fertility, the average family size was the lowest. It is quite likely that the smaller the average family size, the greater the effect of the sex of the first two. This hypothesis fits very well with the fact that: 1) in the Job Corps sample, where the average family size was 6.33, there was no significant effect of sex of the first two or three children; and 2) in the Black and the Appalachian samples, where the average family size was 4.63 and 3.67 respectively, there was a significant association between sex of the first three children and fertility. It must be noted, on the other hand, that the nature of the whole sample makes it impossible for the authors to control for contraceptive efficiency. As it was not known that each child was intentional, the inference about sex preference, from the statistical relationships between six of the first n children and achieved fertility, could have been invalid.

The samples for the four above studies were collected from families of students whose reproductive process was considered complete. Hence, the degree of certainty must have been much higher than in the studies of Freedman et al. (1960), where fertility expectations were used as the index of subsequent fertility. On the other hand, the four studies did not control for those characteristics, besides race, that might lead to spurious relationships between sex composition and fertility. Neither did they study the interrelationship between those independent factors besides sex composition, so as to compare their relative effects on fertility.

Cutright, Belt and Scanzoni (1974) used two measures to assess the effect of the sex composition of the first two children on completed family size, namely: the percentage of wives who stated that they intended to have additional children; and secondly, the average intended family size. The data came from a probability sample of urban white wives in five North Central States in 1971. Among the 1,123 respondents, 273 had only two children, 26.4 percent of which intended to have more children. Using the Multiple Classification Analysis (MCA) which is a form of multiple regression analysis using dummy variables (Andrews et al., 1967), deviations from the mean percentage (26.4 percent) intending to have more than two children were computed. The independent variables were husband's income, wife's education, religion, age at interview and sex composition of the two children. Considering their relationships with the dependent variable separately, it was found, as expected, that those who were more likely than the average to intend to have more than two children had fewer years at school, were Catholic and were young. When a multiple regression equation was computed including every independent variable except wife's age, 9.6 percent of the variance, from the mean percentage intending to have more than two children, was explained. The percentage of variance explained rose to 21.4 percent when her age was included in the equation. The authors concluded that wife's age was a more important variable for controlling fertility intentions than income or education, even within the same parities. In looking at the average intended family size, they unexpectedly found that wives with a boy and a girl, intended on average to have larger families than wives with two children of the same sex. Those with three or more children were found to exhibit the same unexpected pattern. The authors suggested two factors that might account for this. First is the fact that subsequent fertility intentions are probably not as direct a measure of the effect of sex preference on fertility as completed family size. The second factor is the decline in family size norms after 1965 which might have become a more important factor than sex preference. It can be argued that their unexpected findings might also be due to chance, as they were based on the very small percentage deviation from the mean intended family size for that parity. At the second parity, the mean intended family size was 2.41

for those with one child of each sex and 2.37 among those whose children were of the same sex, when the average intended size for all the two-parity respondents was 2.39.

It is interesting to note that MCA and the measure based on the mean intended family size, yield opposite findings. The finding from the MCA was that those with same-sex children had higher intended family size than the average, whereas, those with one of each sex had lower intended family size. The finding was reversed using the second measure. The authors did not speculate on this difference but it would be interesting, as well as necessary, to find out which measure is more reliable. Cutright, Belt and Scanzoni (1974), however, are the only researchers that made use of MCA.

Ben-Porath and Welch (1976) studied sex preference from an economic point of view. They theorised that sex preference, which is a kind of 'taste', is likely to be an inclination toward a balanced sex composition of the children. Whether sex preference would result in higher fertility depends on three factors, namely: actual sex composition of the family; the nature of demand and the learning of the parents. Assuming in-elastic demand and mild learning, those with children of one sex should be more likely to have higher completed family size than those who have both boy(s) and girl(s). Their major hypothesis is that there is a preference for a mixed sex composition which would result in a U-shaped relationship between the propensity to have more children and the proportion of boys in the family. Their data came from a sample of White families from the 1970 U.S. census. Without differentiating between completed and incompleted families, they calculated the fraction of those who had another child by parity and sex composition of the children. The expected U-shaped relationship between the number of boys and the probability of going from n to n+1 children was substantiated. The association was strongest among the two-parity families, followed by the three and four-parity families respectively.

As the sample in this study was noticably large, (at least 130,000), the U-shaped curve was detected despite the presumably heterogeneous desired and expected sex ratios, as well as differentially desired family size. If the variation in completed family size is large, however, the effect of sex composition and of family size ideal, on

subsequent fertility, might be confounded. This is so because when completed family sizes differ considerably among the families, one cannot find out whether, at each parity, the decision to have another child is due mainly to unsatisfactory sex composition of the previous children, or to the fact that the desired family size has not yet been reached, or to various other possibilities.

Wood and Bean (1977) used the 1970 U.S. Census Public Use Sample data to examine the relationship between sex composition of previous children and the likelihood of having subsequent children. The samples of Anglo and Mexican Americans were limited to those where the wife was then between 35 and 49 years old, had married once before the age of 30 and was in a current sexual union. The parity progression probability was indicative of the influence of sex composition on subsequent fertility. They found a negative zero-order correlation between sex composition and each parity progression probability, which still persisted when four statistical controls were introduced, namely: wife's age at marriage; her education; residence and her husband's income. The degree of predictability among the four control variables, as well as sex composition were compared. The standardized regression coefficients (betas) showed that among the Anglo Americans, sex composition was the most important predictor of the probability of having either a third or a fourth child. Among the Mexican Americans, wife's age at marriage and her education ranked consistently higher, than sex composition, in terms of predicting the probability of her going on to n+1 parity. The authors attributed this to the fact that the average family size was higher among the Mexican than the Anglo Americans and the question of sex composition might not yet be relevant at lower parities. The parity progression probabilities were then regressed on the independent variables within each category of sex composition. Among both ethnic groups, the negative effect of wife's education on the likelihood of an additional birth was found to be consistently higher for couples with children of both sexes than for those with children of all the same sex. The two explanations offered were the higher opportunity costs of children and higher contraceptive knowledge among the better-educated wives. As to the effect of sex preference on fertility, given a <u>smaller</u> family size norm, the authors argued that it should be <u>greater</u> than when the family size norm is large, due

to the lower chance of getting the desired combination. This argument is contrary to that given by Cutright et al. (1974), who argued that even if sex preference remains unchanged, its influence on birth intentions would decrease due to a decline in the mean intended family size. Wood and Bean (1977) pointed out, on the other hand, that intended family size can be an ex-post-facto rationalization and hence is not a very reliable proxy of 'original' fertility intentions.

Young (1977) employed Australian data to test the effects of sex composition on subsequent fertility. The sample was composed of 2,652 married women under 60 years of age and in a current sexual union in 1971. The respondents' age and education were found to relate to the attitudes about the importance of having both son(s) and daughter(s). Younger women seemed to care less about having children of both sexes than their older counterparts. Higher education was also associated with a lower proportion of those who thought it important, or very important, to have children of both sexes. It was further found that couples were more likely to go on to have additional children if their first two were of the same sex. As a relatively high proportion of such families had, or intended to have, four children, the author pointed out that it might be indicative of an attempt to balance the sex composition, rather than to have only one child of each sex. In calculating the parity progression ratio, the author found a higher probability that those with children of the same sex will have another child, compared to the mixed-sex families. The effect on fertility of having children of the same sex and of mixed-sex was observed among the first two and the first three children. The author suggested that the effect of sex composition on fertility seemed to be unconscious, or concealed, or of secondary importance, to other reasons for having, or not having, a third or fourth child. This was based on the fact that among those with same sex children, who had or expected to have more children than they originally planned, only 35 percent gave sex imbalance of the children as the main reason.

Summary and Conclusions

It appears that most of the studies, here reviewed, provided some support to the contention that sex composition of children has some effect on fertility and/or fertility intentions. The degree of

association found, however, was by no means high. In addition, the proposed relationship was not consistently found; it might exist at the second parity in one sample, but not in another sample. This fact, it is here suspected, could be accounted for in terms of different actual average family size among different samples. That is to say, the expected relationship between sex composition of children and fertility intentions is likely to be detected at the parity nearest to or just above the average family size of the sample in question. The contradictory results from the reviewed studies could also be due to the fact that most studies did not control for contraceptive status and contraceptive efficiency of their samples. Nor did they always have the same dependent variable; it was "intended family size" in one study, "actual family size" in another, for example. Whatever accounted for the different findings among the reviewed literature's samples, it was evident that sex composition was not as decisive a factor as other socio-demographic or socio-economic factors, such as age, race, religion, income or occupation.

The above interpretation of the findings from the literature review on sex preference has led to the exclusion of respondents of races other than European from our sample, as it is likely that they have different average family sizes. In addition, only those European respondents were chosen who had been contracepting. This restriction insures that the subsequent fertility intentions correspond as closely as possible to future actual fertility. The appraisal of the literature has also resulted in our attempt to examine other factors besides sex composition of children, that might have influence on subsequent fertility intentions.

In the reviewed literature, varying methodologies have been employed in the effort to find out the proposed influence of sex composition of children on fertility and fertility intentions. They range from 2x2 frequency tables, through parity progression probability, to regressions, multiple regressions, and multiple classification analysis. This study has used cross-tabulations (nxn frequency tables) and multiple regressions with dummy variables, since the former is readily interpretable and the latter provides controls for other intervening factors while the relationship between one independent

variable and the dependent variable is examined, taking as much advantage as possible of sample size.

Some concluding remarks seem necessary regarding the nature of the studies and findings here reviewed. Despite their different methods of computation, the studies invariably illustrate the lack of strong support for the relationship between sex composition of the children and fertility. Although most studies reported the existence of the relationship, it is only of a small degree and has only minor significance when compared to other independent variables. At this stage, no other hard and fast generalizations can be made, from the findings of the reviewed studies, due to their different sample criteria, conceptual operationalization, as well as differing modes of analysis. These differences make comparisons of the findings rather futile, especially in the case where different methods of computation yield contradictory results using the same sample, as seen in Cutright et al. (1974). What is required for more fruitful further research into this topic is comparability among findings, which means that researchers must come to some agreement as to the most appropriate method of analysis, as well as the underlying differences in what is studied. That is, even when they agree to study contraceptors only, the researchers need to recognise the difference between perceived and actual ability to contracept.

CHAPTER III

METHODOLOGY

a) Restatement of the Hypotheses

In this study, preference for sex balance is assumed to be a factor influencing the desire and expectation to have another child. It is hypothesised that, at the same parities, those who have children which are all of the same sex are more likely to want and expect another child than those with children of both sexes. The former group would be more likely to prefer the next child to be of the opposite sex to the children they already have. Among this group, it is also expected that those with all daughters are more likely than those with all sons to want and expect another child. In the case of those who have a more or less equal number of son(s) and daughter(s), but still wish to have another child, there should be a tendency to prefer another son rather than another daughter, or not to care one way or the other. In other words, son preference is also assumed to exist.

Besides the preference for a balanced sex composition of the children, ideal and actual family size as well as the wife's age could also have some effect on subsequent fertility intentions. It is expected that as the wife's age and parity increase, the desire and expectation to have another child should be lessened. At the same parities, those with lower ideal family size are less likely to want and expect another child.

Other antecedent factors here hypothesised to affect subsequent fertility intentions are the socio-economic standing of the husband and the wife. These are measured in terms of the wife's education and employment status as well as hers' and her husband's income and occupation. As higher socio-economic status presumably entails higher opportunity costs of having another child, it is expected to be inversely related to the desire and expectation of having another child.

To test these hypotheses about preference for gender balance and its effect on subsequent fertility intentions, this study examines the relationship between sex composition of living children and the

desire and expectation to have another child; and secondly, the socio-economic factors that are likely to affect that desire and expectation.

b) Source of the Data

The data used in this study comes from the Family Growth Study (Reinken and Blakey, 1976). This survey report resulted from a suggestion by the Family Planning Association that the Health Department's Management Services and Research Unit undertake a survey on the knowledge, attitudes and practice of family planning in New Zealand. It was carried out in the Hutt Valley in 1975. From randomly selected clusters of households in the areas of Petone, Lower Hutt, Upper Hutt, and Wainuiomata, the eligible respondents (married females 20 to 45 years of age) were sampled and interviewed. The interview schedule, derived from the World Fertility Survey core questionnaire (1975), consisted of 8 sections: pregnancy history, contraceptive knowledge, past fertility planning, ideal family size, current fertility regulation, work history, and the husband's background. The 863 women who were sampled and interviewed were found to be closely representative of women in the Hutt Valley in 1971 in terms of age, family size, race and education.

c) The Delimitation of the Sample

Analysis in this study has been restricted to European respondents who had from one to four children in 1975, and who had been contracepting for at least six months prior to the time of the survey. These delimitations have been made for three reasons. The first is due to the likelihood that Maoris, Pacific Islanders and other races exhibit fertility attitudes and behaviours that are different from their European counterparts. The inclusion of these groups in the analysis might, thus, complicate matters more than help to bring about clarity. Maoris, Pacific Islanders and other races also made up only 10.3 percent of the total sample, which makes each group rather inadequate as sub-sample. The restriction on parities has been made for the reason that only a small proportion of the respondents (9.3 percent) had more than four children at the time of the interview. In addition, not very many respondents with parities greater than four are likely to have all sons or all daughters. This might result in very low frequencies in the "same-sexed" category in the sex composition variable. Therefore, those with more than four children are omitted from the analysis.

The last restriction has been made on the assumption that by excluding those who did not practise contraception, we could to some extent avoid those cases where subsequent fertility is not the result of their desire to have or not to have another child. Consequently, any spurious relationship between sex composition and fertility arising from likely unplanned pregnancy can be reduced.

These restrictions leave us with 354 eligible respondents from the total of 863 in the original data. These respondents were Europeans, 20-45 years of age in 1975, who had from one to four living children and who had been contracepting for at least six months prior to the survey for the Family Growth Study (1976).

d) The Arrangement of the Data

Fourteen variables from the Family Growth Study (1976) have immediate relevance to our study. They are the respondent's age, education, ideal family size at marriage, ideal family size at present, her desire and expectation regarding having another child, expected family size, preferred sex of the next child, parity, her employment status, her occupation, and lastly, the husband's income and occupation.

From the pregnancy histories, which included the number of every birth and the sex of each living child, four variables were used, namely, the sexes of the first to the fourth living child. These variables, in turn, were used to create a crucial variable; "sex composition of the living children". Disregarding the order of births, the categorization of this new variable was done in two ways: firstly in terms of the possible combinations of sexes at each parity, and secondly, according to whether the children were all of the same sex or were a combination of both sexes (Table 1 in Appendix). The first arrangement enables a more refined classification which facilitates more detailed analyses of each parity, while the dichotomization enables cross-parity comparisons which cannot be accomplished using the first kind of categorization.

So as to obtain a more reliable proxy of subsequent fertility, the variables "desire" and "expectation" were combined to make a single, combined new variable. That is, only those respondents have been analysed who had definite ideas at the time of the interview

whether or not they wanted and expected another child. Those who wanted, but not expected, another child and vice versa, have not been included in the tabulations due to their potentially confounding effects on the interpretation of the findings.

Thus, in this study, 20 variables in all have been examined, 18 of which were taken directly from the Family Growth Study (1976), while the variables "sex composition of the living children" and "desire and expectation to have or not to have another child" were created later (Table 1 in Appendix). The categorization of each variable in this study follows closely that of the FGS (1976). The categories of some variables have been combined at times, however, when detailed analysis is not necessary, or when too many categories make cross-tabulation results difficult to interpret.

e) The Analysis of the Data

In our study, the basic statistical procedures that have been used are cross-tabulations and multiple regressions with dummy variables. The first part of the analysis explored the statistical associations that our dependent variables, namely, the desire and the expectation to have another child, had with each of the various independent variables previously specified. This part has been subdivided into three sections. The first section examined the statistical associations between sex preference for the additional child and sex composition of the family. It included only those cases where the respondents wanted and expected another child at some time. The second section explored the relationship between sex composition of living children and the desire and the expectation to have another child of all the respondents. In the last section, the desire and the expectation, as a combined variable, was again cross-tabulated with sex composition of children, to find out whether the two variables were interrelated among those who were certain whether they wanted and expected another child. In all sections, the analysis was carried out for each parity group, separately.

The cross-tabulation provides simple frequency tables that illustrate the relationship between two variables, as well as those tables where a third factor is introduced as a control variable. In addition, it offers a number of related measures of association and

significance. Relevant to our analyses are: Cramer's (V), lambda (λ), the uncertainty coefficient, gamma (G) and lastly, tau b and tau c. The first three statistics describe the strength of relationship between two nominal variables, while the next three are suitable for ordinal variables.

Cramer's V is a measure of strength of relationship between nominal variables. It takes on the value of 0 when no relationship exists, and of 1 when the variables are in perfect association. It is suitable for a table which is not 2x2 and has no upper limit (Nie et al., 1973: 224).

Guttman's coefficient of predictability, more commonly known as lambda, is the statistic that does not put any restriction on the number of categories in each variable. Nor does it require that the variable be normally distributed (Freeman, 1965: 71). One shortcoming arises from the fact that its value becomes zero when the respondents are over-represented in the same row or column of the frequency table. Under the circumstance, the uncertainty coefficient is a good substitute to tell us the proportion of error that is reduced by the knowledge about an independent variable (Nie et al., 1973: 226). The values of the two statistics range from 0 to 1, which denote no statistical association and perfect association, respectively.

In describing the relationship between two ordinal variables, suitable statistics include gamma, tau b and tau c, all of which can achieve a value between 1 and -1. Though gamma is perhaps the generally most useful measure of ordinal association, it has a limitation which stems from the fact that it can achieve the value of +1 or -1, even when there is no perfect association (Mueller, Schuessler and Costner, 1970: 279-292). In that case, the interpretations were based on tau b and tau c. These two statistics yield lower values than gamma, because they take ties into account in addition to the concordance and the discordance of pairs of cases. Tau b is most appropriate for square tables, while tau c is more appropriate for rectangular ones (Nie et al., 1973: 227-228).

The analyses of the data did not involve the use of tests of significance, namely: the chi-square (X^2) and the Kendall's tau, which are appropriate for the nominal and the ordinal scales respectively.

Strictly speaking, they should be employed only when the assumption of random sampling is met. Furthermore, these tests are legitimately used only with a certain type of probability sampling, namely: simple random sampling. Considerable error in the computed level of significance occurs if formulas assuming simple random sampling are used, especially when the sample design is cluster (area probability) sampling (Henkel, 1969: 133). This is due to the fact that individuals in each cluster tend to be homogeneous in some characteristics of the sample elements, and thus negates the assumption of independence of each sample case (Kish, 1957: 155).

As the study intends to compare the relative effect of several independent variables, in addition to sex composition of the children, multiple regressions were carried out in the second and last part of the analysis. This particular technique is employed because it allows an examination of the relationship between one independent variable and the dependent variable, while the other independent variables are controlled. Besides, the relative effect of each independent factor can also be compared on the same basis. The statistical measures that have been used to assist our interpretation of the relative influence of the independent variables, or the predictors, are the coefficients of determination (R^2) and the standardized partial regression coefficient (beta). The R^2 is an estimate of the proportion of the variance of the dependent variable accounted for by the predictors included in the multiple regression equations.

A partial regression coefficient is a measure of the effect of each predictor upon the dependent variable, while the effect of other predictors are held constant or statistically controlled for. As the predictors in the partial regression coefficient are measured in different units, which makes it difficult to determine the relative influence of each predictor, standardized partial regression coefficients (betas) are preferable. Other predictors being held constant, a beta indicates the magnitude of the standard deviation unit change, of the dependent variable, when the predictor in question changes by one unit (Nie et al., 1975: 330-332).

While the R^2 and the beta have been used to interpret the relative importance of all the predictors, the F statistic has not been used to determine whether or not all the predictors in a

multiple regression equation explain a significant portion of the variance of the dependent variable. This is due to the same reasons outlined previously, that the sample did not derive from a simple random sampling.

Although multiple regression is based on the assumptions that the variables are measured on an interval scale and that the relationships among them are linear and additive, these assumptions can be met through the use of dummy variables, if non-interval data are to be used (Nie et al., 1975: 373-378; Andrews et al., 1973: 45-46; Kerlinger, 1973: 641-644). Dummy variables allow one to treat nominal and/or ordinal variables as if they were interval. A set of dummy variables can be "created" by treating each category of a nominal or ordinal variable as a new variable. All cases in the original variable are then dichotomized by assigning the arbitrary values of 1 when they are present in the newly created variable, and 0 when they are not. As a multiple regression would yield perfect correlation among the predictors if all the dummy variables created from each parent nominal or ordinal variable are included in the regression equation, one of the dummy variables of each set needs to be omitted from the analysis. This omitted dummy variable is termed the "reference category" and our obtained coefficients, for the remaining dummy variables within each set, indicate deviations from the reference category (Andrews et al., 1973: 45-46; Nie et al., 1975: 373-376). Multiple regressions were used with those respondents with two to four children, as those with only one child cannot be classified in terms of sex composition of children.

In our study, dummy variables have been created for seven independent variables, namely: the sex composition of the children; the respondents' education; employment status; theirs' and their husbands' income and occupation. Dummy variables have also been used for the combined dependent variable: the desire and expectation, as the creation of dummy variables for the dependent variable has been shown to be feasible in a path-regression analysis (Boyle, 1970). The categorization of these dummy variables is shown in Table 2, in the Appendix).

In summary, the study has used cross-tabulations and multiple regression with dummy variables to examine the general characteristics of all variables, and to measure the relationship between the desire and expectation of whether or not to have another child and the sex composition of the children, as well as the relative importance of the factors affecting that desire and expectation.

CHAPTER IV

SEX COMPOSITION, SEX PREFERENCE FOR THE NEXT CHILD, AND THE DESIRE AND EXPECTATION TO HAVE ANOTHER CHILD

This chapter first examines the sex composition of the children of those who wanted and expected another child at some time, in relation to the respondents' sex preference for the next child. This is undertaken to test the major hypotheses that there exists a preference for a more or less balanced sex composition of children and that some boy preference also exists. The statistical association between the variables 'sex composition' and the 'desire' and the 'expectation' are then examined, in turn, in section two, so as to test the hypothesis that at the same parity, those with children of both sexes are less likely, than those with all boys or all girls, to want and expect another child. Section three reports the calculated statistical relationships between the sex composition of living children and the subsequent fertility desire and expectation (as a combined variable). Interpretations of the results and some concluding remarks are given in section four.

Section 1: Sex Preference for the Next Child and Sex Composition of Existing Children

This section is concerned with those who wanted and expected another child, the sex composition of their previous living children and their sex preference for the next child. To test the hypotheses that there is the preference for a more or less balanced sex composition of the children and that some boy preference exists, the sex composition of living children and the sex preference for the next child were cross-tabulated for the eligible respondents of all parities taken together and then for each parity group separately. The first hypothesis of the preference for gender balance is strongly supported by the findings, while the existence of some boy preference was only detected in some parities.

The computation results indicate that there was a moderate statistical association between the sex composition of children and the sex preference for the next child (Cramer's V = 0.5433; lambda = 0.4286). In addition, the error in predicting the sex preference for

the next child was found to be reduced by 35.58 percent with the knowledge about the sex composition. Table 3 illustrates this relationship.

TABLE 3[4]

Sex composition of previous children and sex preference for the next child among all respondents who wanted and expected another child

Sex composition of children	Sex Preference: Male	Female	No Preference	
all boys	0.00 (0)	65.2 (15)	34.8 (8)	43.4 (23)
all girls	70.6 (12)	0.0 (0)	29.4 (5)	32.1 (17)
one boy	41.7 (5)	16.7 (2)	41.7 (5)	22.6 (12)
two boys	0.0 (0)	100.0 (1)	0.0 (0)	1.9 (1)
	32.1 (17)	34.0 (18)	34.0 (18)	100% (N=53)
	Cramer's V		0.5433	
	lambda		0.5286	
	uncertainty coefficient		0.3558	

Although Table 3 illustrates that a relationship exists, it does not take into account the differential effect of parities. As family size was found to be inversedly related to both the desire and the expectation to have another child (See Appendix; Table 4.1 and Table 4.2), the sex composition of previous children and the sex preference for the next child were cross-tabulated for each parity group.

At one parity, the statistical association between the sex of the first child and the sex preference for the next was very strong (Cramer's V = 0.7966; lambda = 0.3529). The uncertainty coefficient

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(4) a) The one-parity respondents are included; those with a son are classed as "all boys", those with a daughter as "all girls".

b) All tables were labelled in the order they are discussed or referred to; the more important tables appear in the main text, while the subsidiary, less important ones are shown in the Appendix.

also indicated 39.74 percent improvement in predictability of the sex preference for the next child with the information about the sex of the first child. Table 5 shows that those whose only child was of one sex preferred the next one to be of the opposite sex, or had no preference. None stated that they preferred the next child to be of the same sex as their first-born.

TABLE 5

Sex of the only child and sex preference for the second child

Sex of the first child	Sex Preference: Male	Female	No Preference	
male	0.0 (0)	53.3 (8)	46.7 (7)	53.6 (15)
female	69.2 (9)	0.0 (0)	30.8 (4)	46.4 (13)
	32.1 (9)	28.6 (8)	39.3 (11)	100.0% (N=28)
	Cramer's V		0.7966	
	lambda		0.3529	
	uncertainty coefficient		0.4974	

The results for the two-parity group also supported the hypothesis of the preference for gender balance. Table 6 shows that the respondents who had two sons or two daughters preferred their next child to be of the opposite sex to those they already had. The statistical relationship between the two variables was still relatively high (Cramer's V = 0.5713; lambda = 0.333). The uncertainty coefficient showed a 33.02 percent improvement in the proportional reduction of error in prediction (PRE).

TABLE 6

Sex preference for the next child and sex composition of the children among the two-parity respondents

Sex composition of the children	Sex Preference: Male	Female	No Preference	
two boys	0.0 (0)	66.7 (4)	0.0 (0)	20.0 (4)
two girls	37.5 (3)	0.0 (0)	16.7 (1)	20.0 (4)
a boy and a girl	62.5 (5)	33.3 (2)	83.3 (5)	60.0 (12)
	40.0 (8)	30.0 (6)	30.0 (6)	100.0% (N=20)

Cramer's V	0.5713
lambda	0.3333
uncertainty coefficient	0.3302

It was noted in Table 5 that at the first parity, the majority of the respondents (39.3 percent) did not state any sex preference for their second child. The second biggest group consisted of those who preferred another son and they made up 32.1 percent of the sample, while the rest (28.6 percent) preferred another daughter. At the second parity, however, the majority (40 percent) preferred their third child to be a son, while half of the rest preferred a daughter and the other half did not care (Table 6 above). This slight shift from no preference at parity one to the preference for a son at the second parity suggested that perhaps mothers are not so much concerned with the sex of the second as they are of the third child. This relative lack of concern could be explained in terms of the discrepancy, at parity one, between the actual and the ideal family size, since most respondents considered as ideal, families with two, three, or four children (See Appendix; Table 7). This fact might have made the question about the sex of the second child not as critical as in the cases where the first two or the first three were all sons or all daughters. The shift can also be an indicator of some boy preference. Among those with a son and a daughter, this boy preference was illustrated by the fact that 41.7 percent preferred their third child to be a son, 16.7 percent preferred to have another daughter, and another 41.7 percent had no preference (Table 8).

TABLE 8[5]

Sex composition of the children and sex preference for the next child among the two-parity respondents

Sex composition of the children	Sex Preference: Male	Female	No Preference	
two boys	0.0 (0)	100.0 (4)	0.0 (0)	20.0 (4)
two girls	75.0 (3)	0.0 (0)	25.0 (1)	20.0 (4)
a boy and a girl	41.7 (5)	16.7 (2)	41.7 (5)	60.0 (12)
	40.0 (8)	30.0 (6)	30.0 (6)	100.0% (N=20)

Cramer's V	0.5713
lambda	0.3333
uncertainty coefficient	0.3302

Despite the extremely small cell frequencies of the cross-tabulation for the three-parity group, the results indicated the expected relationship; all of the three respondents whose three children were all boys preferred their next child to be a girl, while the only respondent with a girl and two boys stated that she would like another girl. Not surprisingly, there was only one respondent with four children who would like another child. She had four sons and reported no sex preference for the next child. It is noted that the response of no preference did not contradict, nor conform exactly to the expectation that she should prefer to have a daughter.

In summary, the hypothesis of the preference for a balanced sex composition of the children was strongly supported by the findings from those who wanted and expected another child at some time. The support for the second hypothesis of some boy preference was found among the two-parity group, but not in other parities. This was due first to the fact that it is impossible to have the "one child of each sex" category in the one-parity group, and second, perhaps to the

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(5) The actual frequencies of this table are identical to those in Table 6 but the percentage is calculated with the sex composition of children as the independent variable.

inadequate sample size of the three and four-parity groups.

Section 2: Sex Composition of Children and the Subsequent Fertility Intentions

The previous section showed that the respondents who wanted and expected another child preferred to have a balanced sex composition of the family. This section attempts to find out whether this preference for a more or less balanced sex composition of children can still be detected, among the total sample of 354 cases, from their response to the question of whether they wanted or expected another child. It is expected that, if the preference is strong, those with all sons or all daughters, should be more likely than their parity counterparts with children of both sexes, to want and expect another child. And if boy preference exists, those with all sons should be less likely than those with all daughters to want or expect another child.

To test these propositions, "sex composition of children" was cross-tabulated with the "desire" and then with the "expectation" to have another child. This procedure was carried out for each parity group so as to avoid the possibly spurious effect of family size. In general, the expected relationships between sex composition and the desire as well as the expectation were found, but they were only of a small magnitude and only among the three-and four-parity groups.

The second hypothesis of boy preference cannot at this stage be verified, due to the contradictory and thus inconclusive results of the cross-tabulations for each parity group.

The majority (70 percent) of the respondents, who had one child in 1975, wanted another child regardless of the sex of the first-born, although not as many (58 percent) expected to have one (Table 9.1, Table 9.2). This discrepancy between the desire and the expectation, which was found at every parity group, is logical since desires are more emotional whereas expectations presumably incorporate more rational elements that involve a more realistic appraisal of future events.

TABLE 9.1

Sex of the only child and the desire to have another child among the one-parity respondents

Desire to have another	Sex of the first-borns: Male	Female	
yes	70.4 (19)	69.6 (16)	70.0 (35)
no	25.9 (7)	26.1 (6)	26.0 (13)
don't know	3.7 (1)	4.3 (1)	4.0 (2)
	54.0 (27)	46.0 (23)	100.0% (N=50)
Cramer's V			0.0168
lambda			0.0000
uncertainty coefficient			0.0002

TABLE 9.2

Sex of the only child and the expectation to have another child among the one-parity respondents

Expectation to have another	Sex of the first-borns: Male	Female	
yes	59.3 (16)	56.5 (13)	58.0 (29)
no	33.3 (9)	34.8 (8)	34.0 (17)
don't know	7.4 (2)	8.7 (2)	8.0 (4)
	54.0 (27)	46.0 (23)	100.0% (N=50)
Cramer's V			0.0315
lambda			0.0000
uncertainty coefficient			0.0006

That the desire and the expectation had virtually no statistical relationship with the sex of the first child is also understandable, given the fact that only 4 percent of the one parity group considered one child as ideal while 58 percent stated that their ideal family consists of two children (see Appendix; Table 7). That is, there is a strong tendency to have more than one child regardless of the sex of the first child.

Table 10.1 and Table 10.2 below show that, for two-parity respondents, neither the desire nor the expectation to have another child were statistically associated with the sex of the first two children. There is substantial evidence to support our suspicion that the desire and expectation in question are perhaps more explainable in terms of ideal family size. It is the fact that, among the 56.9 percent of all the two-parity respondents who regarded two children as ideal, 87.5 percent did not want and 91.2 percent did not expect any more children (see Appendix; Table 10.3 and Table 10.4). Both tables illustrate that the majority of the two-parity group considered two, three, or four as their ideal family size, and that their desire and expectation to have another child seemed to conform to their ideals.

TABLE 10.1

Sex composition of children and the desire to have another child among the two-parity respondents

Desire to have another	Sex Composition: Two boys	Two girls	One each	
yes	11.8 (4)	29.4 (10)	21.7 (10)	21.3 (34)
no	70.6 (24)	58.5 (20)	69.6 (64)	67.5 (108)
don't know	17.6 (6)	11.8 (4)	8.7 (8)	11.3 (18)
	21.3 (34)	21.3 (34)	57.5 (92)	100.0% (N=160)

Cramer's V	0.1222
lambda	0.0000
uncertainty coefficient	0.0179

TABLE 10.2

Sex composition of children and the expectation to have another child among the two-parity respondents

Expectation to have another	Sex Composition: Two boys	Two girls	One each	
yes	11.8 (4)	11.8 (4)	14.1 (13)	13.1 (21)
no	79.4 (27)	73.5 (25)	72.8 (67)	74.4 (119)
don't know	8.8 (3)	14.7 (5)	13.0 (12)	12.5 (20)
	21.3 (34)	21.3 (34)	57.5 (92)	100.0% (N=160)

Cramer's V	0.0512
lambda	0.0000
uncertainty coefficient	0.0037

A re-examination of Table 10.1 revealed that those with a boy and a girl and those with two boys were less likely to want another child. That is, 69.6 percent of those with a balanced sex composition of children did not want another child. The percentage rose slightly to 70.6 percent among those with two boys, and decreased to 58.8 percent among those with two girls. These responses can be taken as an indication of a preference for gender balance and suggests a preference for male children. When it comes to respondents' expectations, Table 10.2 shows firstly, and unexpectedly, that while over 70 percent of the respondents in each sex composition category did not expect another child, there were more of those who already had a son and a daughter than those with two sons or two daughters who expected another child. Furthermore, those with two sons, who did not know whether they wanted another child, became much less uncertain when it came to expectation, compared to those with two daughters, or those who had one of each. It is noted thirdly that there was a particularly wide gap between the desire and the expectation among those with two daughters. There is a possibility that those with a son and a daughter had higher family size ideals than the other two groups. In fact, Cutright, Belt and Scanzoni (1974) found that this was exactly the case in their sample (Chapter 2, p. 17). Another possible explanation is that those who had two sons were most contented and thus least likely to expect any more children; while those who had two daughters

might still be disappointed and uncertain as to whether or not to try for another child. In other words, the former were positively reinforced to stop child bearing, while the latter were negatively reinforced to stop child bearing. The respondents who had a son and a daughter did not experience either of these two kinds of reinforcement, nor were they subjected to the chance of having three children of the same sex and thus they had the highest family size ideal. Whatever the real reasons are, it is felt in this study that, at parity two, the desire to have another child is a better index of sex preference than the expectation is. The statistics in Table 10.1 and Table 10.2 support this point.

At the second parity, there was some support to the proposition that those with two sons are less likely than those with two daughters to want another child. This is obvious from the data in Table 10.1. That is, only 11.8 percent of those with two sons wanted another child, compared to the 29.4 percent of those with two daughters.

At the third parity, the sex composition of previous children certainly had some effect upon the desire and the expectation to have another child (Tables 11.1, 11.2); the Cramer's V was 0.2126 for the desire and 0.3046 for the expectation. Note that at this parity, a reversed U-shaped relationship could actually be observed (the second row of Table 11.1 and Table 11.2). This conforms to the U-shaped curve hypothesised by Ben-Porath and Welch (1976) and supports the contention that those who had both son(s) and daughter(s) are less likely than those with children all of the same sex to want or expect another child.

TABLE 11.1

Sex composition of children and the desire to have another child among the three-parity respondents

Desire to have another	Sex composition: All boys	Two boys	One boy	All girls	
yes	29.4 (5)	9.5 (4)	2.9 (1)	16.7 (2)	11.4 (12)
no	64.7 (11)	88.1 (37)	91.2 (31)	75.0 (9)	83.8 (88)
don't know	5.9 (1)	2.4 (1)	5.9 (2)	8.3 (1)	4.8 (5)
	16.2 (17)	40.0 (42)	32.4 (34)	11.4 (12)	100.0% (N=105)
	Cramer's V			0.2126	
	lambda			0.0000	
	uncertainty coefficient			0.0794	

TABLE 11.2

Sex composition of children and the expectation to have another child among the three-parity respondents

Expectation to have another	Sex Composition: All boys	Two boys	One boy	All girls	
yes	23.5 (4)	2.4 (1)	2.9 (1)	0.0 (0)	5.7 (6)
no	70.6 (12)	92.9 (39)	94.1 (32)	75.0 (9)	87.6 (92)
don't know	5.9 (1)	4.8 (2)	2.9 (1)	25.0 (3)	6.7 (7)
	16.2 (17)	40.0 (42)	32.4 (34)	11.4 (12)	100.0% (N=105)
	Cramer's V			0.3046	
	lambda			0.0000	
	uncertainty coefficient			0.1456	

The other hypothesis about son preference was not supported at the third parity. In fact, the reverse of the hypothesis was observed in Table 11.1 and Table 11.2. Those with three sons were 12.7 percent more likely than those with three daughters to want another child, and 23.5 percent more likely to expect one. Perhaps

it can be accounted for in terms of the nature of learning experience and a higher "liability" of having only daughters, compared to having only sons. With three children of the same sex, those respondents might become convinced that they are genetically disposed toward producing only sons or only daughters. Given that a preference for sons exists, those 'laden' with three daughters might be less willing than those with three sons to have another chance lest they have yet another girl. In other words, they might feel that all-girl families are socially less acceptable than all-boy ones.

A re-inspection of Tables 9.1, 9.2, 10.1, 10.2, 11.1, 11.2 gives an impression that one-child families were definitely not as acceptable as two-to-three child families. While 26 percent of those with one child did not want another child, 34 percent did not expect one. This proportion rose to 67.5 percent and 74.4 percent, respectively, for the two-parity group; and to 83.8 percent and 87.6 percent among the three-parity respondents. Although the cross-tabulation results for the four-parity group are not reported due to extremely low cell frequencies and consequently low validity of the findings, there is one fact worth mentioning. At the fourth parity, the proportion of those who did not want another child compared to those who did not expect another child was exactly the same (87.2 percent) (See Appendix; Table 12.1 and Table 12.2), while there was always a discrepancy between these in other parity groups. This is perhaps an indication that four children might be considered the absolute limit.

That two-to-four children may be considered the family size norm is also supported by Table 13 (in Appendix). The most popular ideal family size was two, followed by four and three children respectively and seemed to reflect a preference for an even number. Although there might be a tendency for ideal family size to coincide with actual family size, column four of Table 13 is highly suggestive that two children are the norm for family size.

Section 3: Sex Composition of Children and the Subsequent Fertility Desire and Expectation

The analysis, thus far, revealed among other things, that the desire and the expectation to have another child are two separate and distinct concepts. The notion of "desire" conveys emotional content

while that of "expectation" contains more rational and pragmatic elements. Hence, one can want to have something without expecting it, and vice versa. While keeping both as separate concepts has assisted our inferences in observing how the responses changed from one concept to another, it unfortunately has not made the results easier to interpret nor more conclusive. In this section, then, the two concepts have been combined. The new variable "desire and expectation" includes only those respondents whose desire and expectation were definite and consistent. It was cross-tabulated with the sex composition for each parity group. The results are shown in Tables 14.1, 14.2, 14.3, and 14.4 (see Appendix).

The results, in general, maintain similar patterns to those in section three. Sex of the first child and the sex composition of the first two children had only negligible statistical association, although in the expected direction, with the desire and expectation to have another child. Sex of children of the three-and-four-parity groups, on the other hand, did have a fairly strong association, although the validity of the results for the four-parity group is questionable due to low cell frequencies. The results are more clear-cut using the new combined variable "desire and expectation". They confirmed the previous finding that two children was the most popular family size. At the first and second parity, the results supported the proposition of boy preference. However, at parities three and four, the results contradicted the contention that those with all girls are more likely than those with all boys to want and expect another child.

Summary

In this chapter, the inter-relationships between sex composition of living children, the desire and the expectation to have another child, and the sex preference for the next child were examined. From the findings about the respondents who wanted and expected another child the hypothesis of the preference for a balanced sex composition of children was strongly supported. They preferred their next child to be of the opposite sex of those they already had. Some support to the second hypothesis of some boy preference was found among the two-parity group, but not at other parities; the tendency presumably not

being strong enough to overcome very low cell frequencies.

When all the 354 respondents were examined, their desire and their expectation to have another child were found to be closely related. When they were cross-tabulated (in turn, and then all together) with the sex composition, fairly strong statistical associations were found among the three- and four-parity groups, but not at the first and second parity. It is possible that at one and two parities, the respondents were more concerned with fulfilling their family size ideals than with sex of children. Only when the parity went up to three and higher, was it that the effect of having many children of the same sex was felt and thoughts about remedying it were perhaps entertained. At any rate, the cross-tabulation analysis partially confirmed the hypothesis of a preference for a gender balance. The supposition of boy preference was weakly supported by the findings for the one and two-parity groups, but completely contradicted by those for the three and four-parity respondents. These unexpected findings could probably be accounted for by the psychological process of learning (Ben-Porath and Welch, 1976) among those who had so far produced only daughters. This process of learning is more clearly understood in terms of so-called "negative reinforcement".

CHAPTER V

FACTORS AFFECTING THE DESIRE AND EXPECTATION TO HAVE ANOTHER CHILD

The results reported in Chapter 4 have shown, among other things, that sex composition of children was not a decisive factor affecting subsequent fertility intentions. It has led us to the question of what factor, or factors, are most influential? Part of the answer to this question is provided by an analysis using cross-tabulations, and multiple regression with dummy variables. The desire and expectation to have another child, as a combined variable, has been cross-tabulated with each independent variable, in turn, to get an overview of the statistical association between the dependent variable and each independent variable. Cross-tabulation analysis, however, allows only a few statistical controls at a time, when on independent variable is being cross-tabulated with the dependent variable. Furthermore, this process of controlling for other intervening variables is usually accomplished at the expense of losing cases in each cell. These characteristics limited the extent to which controls could be introduced, especially if the total sample is small to start with, as is the case in this study. Therefore, multiple regressions were also computed. The use of regression makes it possible to simultaneously control or "hold constant" all other independent variables, while the relationship between one independent variable and the dependent variable is examined. In addition, the control procedure is carried out in such a way that the sample size need not be reduced (see page 28). Included in the first regression equation were all the factors suspected to be related to the desire and expectation to have another child at some time. To compare and contrast the relative contribution of each factor to the proportion of variance explained in the dependent variable, other regression equations were also computed.

Section 1: Cross-tabulation analysis

Table 15 summarises the statistical association between each independent factor and the dependent variable. Each measure of association in the table is suitable for the variables that are classified at a particular level of measurement, e.g. Cramer's V

for a nominal association (See Chapter 3, pp. 26-27). For every measure of association, the respondent's age and parity were the factors that related most highly to the desire and expectation to have another child. Gammas denote that both factors are inversely related to the dependent variable; the higher the respondent's age and parity, the less the desire and the expectation to have another child. This finding is not unexpected, given that the higher the age of the respondent, the greater the social tendency of the reproductive process being finished, all other things being equal. In addition, it only stands to reason that the number of children one has already had should play a part in the decision to have another child. Sex composition of children had the third highest value of Cramer's V, and the uncertainty coefficient, but it is suspected that the relationship is spurious, since parity was not controlled for (the cross-tabulations in Table 15 were done for all parities taken together, rather than for each parity separately).

TABLE 15

Statistical relation of Socio-economic and Socio-demographic variables with the desire and expectation to have another child

Independent Variables	Cramer's V	U.C.	Kendall's tau	Gamma
her age	0.6036	0.3856	-0.4656	-0.8737
her education	0.2020	0.0498	-	-
parity	0.5540	0.2721	-0.3849	-0.8131
sex composition of children	0.3524	0.1432	-	-
whether she was working	0.2663	0.0751	-0.2663	-0.6194
her occupation	0.1241	0.0162	-	-
her weekly take-home pay	0.2862	0.0939	-0.2226	-0.5521
ideal family at marriage	0.1424	0.0194	-0.0226	-0.0473
present ideal family size	0.2356	0.0583	0.1315	0.4034
expected family size	0.2561	0.0577	0.1372	0.3254
his occupation	0.0547	0.0042	-	-
his weekly take-home pay	0.1564	0.0273	-0.0086	-0.0176

U.C. = uncertainty coefficient
U.C., Cramer's V = statistics for nominal variables
Kendall's tau, Gamma = statistics for ordinal variables

The rank-order of the magnitude of the statistical relationships between the other independent variables and the dependent variable were not consistent, using different statistics. It appears, however, that the next four most important factors are: respondents' employment status; her weekly take-home pay; her present ideal and expected family size (see Table 15).

There are two possibilities that might account for why the four variables follow the age and parity factors in terms of the magnitude

of statistical association they have with the desire and expectation to have another child. First is the fact that the respondent's employment status and weekly take-home pay are two overlapping variables; respondents who did not work constitute the no-income category in the weekly take-home pay variable (see Table 1, in Appendix). The last two variables, namely present ideal and expected family size, could have been influenced by actual parity. That is, there has been a process of rationalization operating. Given the possibility that some of the six independent variables might be inter-related, it is likely that, when the intervening effects of each independent variable are controlled for, some of the six variables might have no statistical association at all, with the dependent variable. That is to say, any previously found association is spurious. On the other hand, it may be that, despite the inter-relationship between the independent variables and the control for the spuriousness of association, each of the independent variables still has some exclusive influence on the dependent variable. These various possibilities remain to be further clarified in the following part of this chapter.

The statistical results in Table 15 indicate that the rest of the independent variables had a negligible statistical association with the dependent variable. Such socio-economic factors as the respondent's education, occupation, husband's income, and husband's occupation had, contrary to what was expected, relatively little influence on the dependent variable. Whether this is due to the fact that age and parity were not controlled for, or to some other reason, still remains to be seen. Compared to the socio-economic indexes, demographic variables such as age, parity, sex composition of children, ideal and expected family size, were found to be relatively more important. It is possible that the respondents did not differ sufficiently in their socio-economic status to make it an important factor. Had the variables education and occupation been measured at an interval level, this possibility could have been readily verified by examining the standard deviation (Nie et al., 1975: 148). However, as they are not, the decile range (d) seems to be the best index of variability. The decile range is suitable for measuring dispersion in ordinal-level variables. It indicates the

number of ranks that fall between the first and ninth deciles. If the number is small, it means that there is little variation in the distribution (Freedman, 1965: 48-52).

The middle 80 percent of all the cases in the education variable vary over a range of four ranks, namely, from four years in secondary school up to tertiary education without U.E. There is one-rank variation in terms of the respondent's and the husband's occupation. The variation is not large, considering that there are only three categories in each of the two variables in question. The husband's weekly take-home pay, on the other hand, varies widely (see Tables 16.1, 16.2, 16.3, in Appendix).

Thus, it seems that respondent's education does not have a widely dispersed ordinal distribution, whereas respondent's occupation, her husband's income and occupation vary considerably. This finding does not give support to the previous assertion that perhaps the reason for little association, between the socio-economic indexes and the desire and expectation to have another child, is the homogeneity of respondents in terms of their socio-economic status. The finding indicates that socio-economic variables are not decisive factors affecting subsequent fertility intentions.

The cross-tabulation results in the present study, which have revealed that socio-demographic variables associate more highly than the socio-economic variables, with the desire and expectation in question, conform to the findings by Cutright, Belt and Scanzoni (1974) and, to some extent, to the findings of Wood and Bean (1977). The former study found that <u>age</u> was the most important predictor of intended family size (Chapter 2, p. 17). The latter study found that two socio-economic variables, namely age at marriage and <u>education</u>, were <u>not</u> the most important predictors of the probability of having either the third or the fourth child among their Anglo-American sub-sample (Chapter 2, p. 19). The similarity of the findings is not yet sufficient reason for discontinuing pursuit of this subject. There are still many possibilities that can be examined.

<u>Section 2</u>: <u>Multiple Regression Analysis</u>

A simple multiple regression, using dummy variables, and including

all of the independent variables yielded a rather large multiple correlation coefficient of 0.8999. The R^2 of 0.8097 indicates that approximately 81 percent of the variance in the desire and expectation to have another child was accounted for by all of the predictors in the regression equation, acting together (Table 17).

TABLE 17

Standardized partial regression coefficients (betas), multiple R and R^2, with the desire and expectation to have another child as the dependent variable

Predictors[x]		betas
SIZEXPEC	(expected family size)	1.3865
KIDSHAVE	(parity)	-1.2548
EDUC2	(2-5 years' secondary)	0.0350
EDUC3	(secondary with S.C. or U.E.)	-0.0265
EDUC4	(tertiary)	-0.0303
FOCCUP1	(unskilled, semi-skilled)	-0.0351
FOCCUP2	(skilled crafts or clerical)	-0.0212
FINCUM1	(no weekly take-home pay)	0.0255
FINCUM2	(under $20)	-0.0421
FINCUM3	($20-39)	0.0117
FINCUM4	($40-59)	-0.0231
FINCUM5	($60-79)	-0.0439
FINCUM6	($80-99)	-0.0047
MOCCUP1	(unskilled, semi-skilled)	-0.0292
MOCCUP2	(skilled crafts or clerical)	-0.0274
MINCUM1	(no weekly take-home pay)	-0.0297
MINCUM2	($30-59)	0.0083
MINCUM3	($60-89)	-0.0000
MINCUM4	($90-119)	-0.0012
MINCUM5	($120-159)	0.0253
MINCUM6	($160-199)	0.0417
HERAGE	(age of respondent)	-0.0600
GENDERI	(sex composition of children)	0.0000
IDEALNOW	(present ideal family size)	-0.0214
	multiple R	0.8999
	R^2	0.8097

x See Table 2 in Appendix for reference categories.

An examination of the standardized partial regression coefficients (betas) reveals that the respondents' expected family size and her parity are the two most important predictors. Other predictors being held constant, the tendency to want and expect another child was associated with high expected family size and/or low parity (the respective betas = 1.3865, and -1.2548). A regression of the dependent variable on only these two predictors found that together they accounted for 79.12 percent of the variance in desire and expectation (R^2 = 0.7912; see Appendix, Table 18). Compared to the R^2 in the regression where every predictor was included (Table 17), it can be seen that all of the other predictors add only 2 percent to the variance explained by expected family size and parity! That is, socio-economic and other demographic variables were not decisive factors affecting the subsequent fertility intentions.

The multiple regressions provided results that are similar to those obtained through cross-tabulation. When other factors were not statistically controlled for, "age" and "parity" had the highest gamma values (Table 15, in Appendix). But when the other variables were "held constant" or controlled for, "parity" and expected family size" had the strongest effect, while "age" had relatively no explanatory power. With the exception of the above difference and the fact that "sex composition of children" was found unimportant in the multiple regression, other findings from each analysis were very much alike; the desire and expectation in question did not depend highly on the socio-economic factors.

Given that expected family size and the number of existing children accounted for most of the explained variance in subsequent fertility intentions, the question arises as to what factors, in turn, could affect these two factors. In order to explore this question, two other regressions were computed, one of which had "expected family size" as the dependent variable, (Table 19, in Appendix), while the other had "parity" in that position (Table 20, in Appendix). The predictors were the same set of independent variables specified in Table 2 in the Appendix. Expected family size was found to be best explained by three predictors; the number of children the respondent already had, the family size ideal, and

lastly, the respondent's age. The betas for these variables were relatively high, especially that for parity (Table 19, in Appendix). Parity, in turn, was best accounted for by expected family size and age! (Table 20, in Appendix). Most of these relationships were in expected directions; parity and ideal family size had a positive relationship with expected family size. Age, contrary to expectation, was negatively related to expected family size. Nevertheless, these independent variables, were closely interrelated (as confirmed by Table 21, in Appendix).

Sex composition of children was found to be negatively related to parity. As those who had children of both sexes were treated as the reference category with the value of zero for the dummy variable "GENDER1" (see Table 2 and discussion on page 29), the negative association means that those with children of both sexes are more likely to have many children. This is contrary to our expectation that those with both sons and daughters should be less likely to have many children. This unexpected finding is, however, rather similar to our previous finding for the two-parity group and that reported by Cutright, Belt and Scanzoni (1974), that those with a son and a daughter had higher intended/expected family size (see page 17). This unexpected finding may be due to the use of dummy variables for the independent variable "sex composition of living children". It may also be due to the fact that the sex composition factor is crucial at some, but not at all parities and the inclusion of respondents of all parities in the regression equations might have confounded the results.

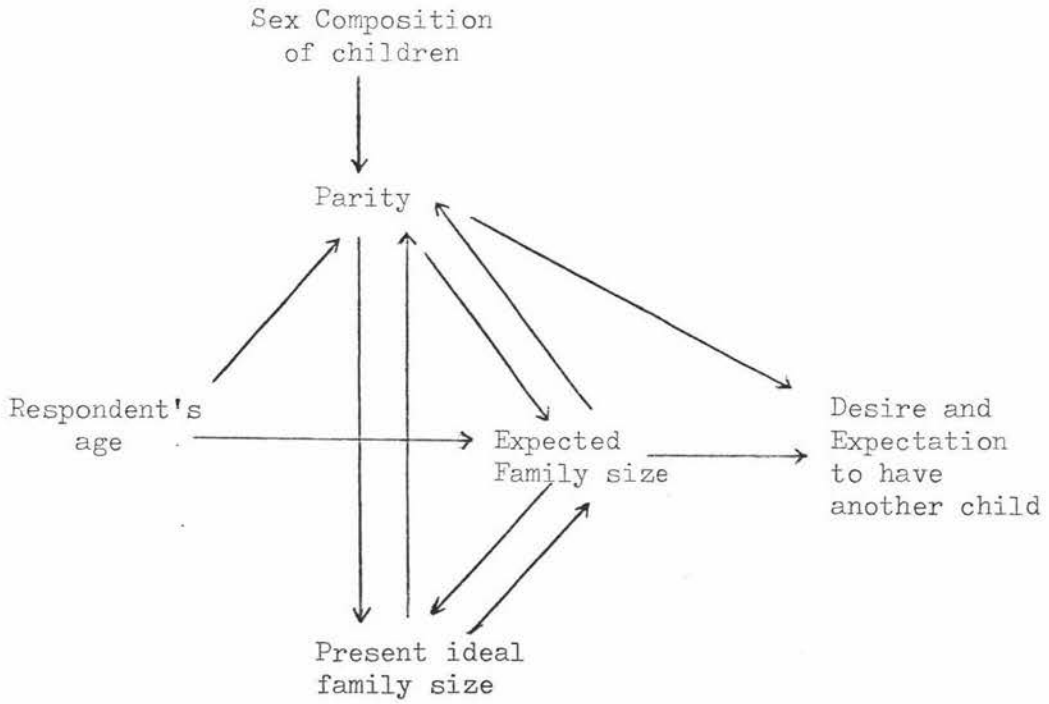
As parity was repeatedly found to be inter-related with many independent variables and is suspected to have confounded the regression results, a further step taken was the regression of the desire and expectation to have another child on all the predictors for only the two-parity group. This double check found that expected family size accounts for most of the explained variance, followed by age. It also found that all of the socio-economic factors and sex composition of children explain only 12.14 percent of the variance (see Appendix; Tables 23.1 and 23.2).

In addition to the regression results in Tables 17, 19 and 20, there are those derived from a series of stepwise multiple regressions.

Predictors are entered into these regression equations according to each predictor's relative contribution to the explained variance, and only when their respective F ratio is not more than 0.01 (see Nie et al., 1975: 345-347). These stepwise methods permit a determination of the independent variables that are relatively most important. The results in Tables 22.1, 22.2, 22.3, and 22.4 (in the Appendix) conform to the previous findings reported in Tables 17, 19 and 20. Diagram 1 is created from all these results as a summary and illustrates the hypothetical set of inter-relationships between the relatively most crucial variables.

DIAGRAM 1

The hypothetical inter-relationship between the independent and dependent variables



Although the diagram is based on a series of regression results, it is still hypothetical, due to its implicit assumption of causal priority. The ultimate dependent variable is the desire and expectation to have another child, while the antecedent variables are respondent's age and sex composition of children. Unidirectional reciprocal relationships between two variables are signified by a

one-way arrow and by two arrows pointing in the opposite direction, respectively. The reciprocal relationship, in which the two variables are interacting and reinforcing, is common in social reasearch (Mueller, Schuessler and Costner, 1970: 334). According to the diagram, there are reciprocal relationships among expected family size, parity and ideal family size. The standardized partial regression coefficients between parity and expected family size are very high, no matter which one is treated as the independent variable, making it difficult to ascertain which variable is the 'primal cause' (see Rosenberg, 1977 for a discussion on primal cause). As for the relationships that present ideal family size has with expected family size and parity, it seems that, while all of the three variables are interacting, the primal causes are expected family size and parity (see Tables 22.2, 22.3, 22.4 in Appendix).

The diagram also shows that, while present ideal family size does not directly influence the desire and expectation to have another child, it affects it indirectly through expected family size and parity. That is, if the respondents have a large ideal family size and have already had many children, the expected family size is likely to be large. Thus, at the same parity, those with larger expected family size are more likely to want and expect another child. The respondents' age could also influence the desire and expectation in question through parity; those who have many children are likely to be older and less likely than younger counterparts with fewer children to want and expect another child.

The diagram does not illustrate the strength of the direct and indirect relationships among the variables, since to justifiably do so would involve the use of path analysis. Developed originally in biology and economics, path analysis imposes basic theoretical and methodological requirements that cannot always be met in sociology (Heise, 1969). It requires, among other things, that the model postulate no feedback loops, i.e., no reciprocal relations between variables (Kerlinger and Pedhazur, 1973: 309; Heise, 1969). In addition, it requires the undebatable rankings of variables in terms of their causal priorities (Heise, 1969). These two assumptions cannot be met, given the regression results indicating strong reciprocity between parity and expected family size. Therefore,

the path analysis is not carried out, as it is likely to result in a model that is erroneous and misleading.

Section 3: Discussion

Although multiple regression has its advantages, there are two drawbacks as far as the present study is concerned. First is the difficulty involved in interpreting the results, due to the instability of the regression coefficients which change with different samples and with the addition or subtraction of the predictors to the analysis. Second is the possible confounding effect on the results if the predictors are highly inter-correlated (Kerlinger, 1973: 622-625). Another problem peculiar to this study is the interpretation of the total effects of a set of dummy variables. The answer has yet to be found regarding the ways and means to compare the total relative influence of a set of dummy variables with other interval predictors. The legitimacy in so doing has still to be established, as each dummy variable, at present, is treated as if it has no relationship with the other dummy variables of the same parent variable.

The interpretation difficulties of dummy variables resulted in little discussion about the total relative influence of the respondent's education, income and occupation as well as the husband's income and occupation. However, as the results, concerning these factors, correspond to those derived from cross-tabulations, it can be stated with some confidence that in the present study, socio-economic variables do not appear to play a major role in explaining the differential desire and expectation to have another child, regardless of whether or not other independent variables are controlled. Two possible explanations could be given. It may be that the categorization of the variables is not realiable; it could have been inaccurate if the groupings are too large and/or indistinct. In other words, the expected relationship between socio-economic factors and subsequent fertility intentions might exist but cannot be detected because the categorization of variables is unrealistic. Another possibility is that the expected relationship does not exist in this sample, which means that the findings are valid. If this is the case, it might, in turn, be due to the fact that socio-economic factors

really have no bearing on subsequent fertility intentions. Alternatively, it may be a consequence of the homogeneity of the sample, in terms of socio-economic status. This latter proposition was not supported by the finding that respondents' socio-economic indexes were quite heterogeneously distributed (see page 49). Therefore, the other proposition might be correct, i.e. socio-economic factors do not influence subsequent fertility intentions.

The fact that respondents' age and sex composition of children did not account much for the variance in the dependent variable could be quite readily explained. The association that age had with the desire and expectation in the cross-tabulations must have incorporated the effect of parity. The association between sex composition of children and the desire and expectation could have been spurious for the same reason. This ex-post-facto explanation would account for why the two factors were found unimportant when parity was held constant.

Recall that expected family size and parity accounted for most of explained variance in the desire and expectation to have another child. The two factors were in turn contingent upon each other, age, and ideal family size. This last factor was found dependent upon expected family size and parity. In short, the variables were highly inter-corelated. This is not unexpected, considering that variables in most social research usually are highly correlated and that the data derived from the statements of respondents which could have been rationalizations. The regression results for the two-parity group also confirmed that the expected family size was the best predictor of the desire and expectation to have another child, to be followed by age.

All the findings in this and the previous chapter provide little support to the hypotheses concerning the influence of socio-economic status on the desire and expectation to have another child. They also lead to the conclusion that expected family size, parity, present ideal family size and age are the more important factors affecting the desire and expectation.

CHAPTER VI

SUMMARY, DISCUSSION AND CONCLUSION

Section 1: Summary of the Present Study

This study has examined the relationship between sex composition of children, sex preference for the next child and subsequent fertility intentions, employing the data from the survey for the Family Growth Study (Reinken and Blakey, 1976). The original data were collected in 1975, using a cluster sampling technique, from relatively urban places in the Hutt Valley, namely: Petone, Lower Hutt, Upper Hutt and Wainuiomata. The respondents, who are ever-married women aged 20 to 45, were interviewed according to the schedule which was based on the World Fertility Survey core questionnaire (1975). From this original data were derived all of those respondents who are of European origin or descent, had between one and four children, and had been contracepting for at least six months prior to the survey. Those 354 respondents make up the total sample for the present study.

From the sample, 53 respondents wanted and expected another child at some time, and were consequently asked what their sex preference for the next child would be. The cross-tabulations of sex composition of their existing children with their stated sex preference supported the hypotheses that there exists a preference for gender balance, and also a preference for sons. Those with all sons or all daughters tended to prefer another child of the sex opposite to that of their existing children, whereas those respondents who have had more sons than daughters, or vice versa, would preferably have another child that will make the sex composition of their children more balanced. There was no instance where those with one girl or one boy stated that they wanted to have another child of the same sex as they already had. The hypothesis of boy preference was partly supported by the finding that those with a daughter were more definite in their preference for the next child than their counterparts with a son. In addition, those with a son and a daughter were more likely to prefer another son than another daughter. Although there were only four respondents in the three-parity and four-parity groups who wanted and expected another child,

the cross-tabulation results still gave strong support to the hypothesis of gender balance. Thus, among the respondents who wanted and expected another child, the hypotheses of a preference for gender balance and of son preference were supported.

In the next part of the analysis, all of the 354 respondents were examined in terms of the relationship between their existing children's sex composition and their subsequent fertility desire and expectation (as separate variables and as a combined variable). It was expected that those who have had children of both sexes would be less likely than their counterparts with children all of the same sex to want and/or expect another child. Furthermore, the respondents with all sons should be less likely than those with all daughters to want and/or expect any more children. The findings for the one-parity and two-parity groups did not support the contention that there is a preference for gender balance. However, the expected relationship between sex composition and the desire and expectation was found, in a small magnitude, among those with three or four children. The explanation given was that to have children of the same sex might no incur as much sense of dissatisfaction at lower parity as at higher parity where the imbalanced sex composition of children is more noticeable. In this part of the analysis, it was also observed, not unexpectedly, that the proportion of those who want and/or expect another child decreased as parity went up, and secondly, that at the same parities, present ideal family size was another factor affecting the subsequent fertility intentions.

Cross-tabulation and regression with dummy variables were employed to further explore the factors best accounting for the desire and expectation to have another child. The cross-tabulations indicated that respondent's age and parity level were associated most highly with the dependent variable, while respondent's employment status, her weekly take home pay, her present ideal and expected family size had a moderate association. The direction of the associations were all as expected. Older respondents and respondents who have already had more children were less likely than their counterparts to want and expect anymore children. Working respondents were also less likely than housewives to do so.

Working respondents with higher weekly take home pay had a higher tendency than the others who earned less, to want and expect another child. Besides, those with larger ideal and expected family size were more likely than others to want and expect any more children. The socio-economic factors, contrary to expectation, had relatively negligible statistical association with subsequent fertility intentions. It was postulated to be due to the fact that other independent factors were not controlled for.

The multiple regressions showed that when all other independent variables were held constant, expected family size and parity were the two factors accounting for most of the explained variance in the dependent variable. The variance in expected family size, in turn, was best explained by parity and present ideal family size. As for the variance in parity, it was found best accounted for by expected family size, respondent's age and her present ideal family size. Most of the relationships were in the expected direction except those between age and expected family size, and between sex composition of children and parity. This may be due to methodological reasons, involving problems of multicollinearity(6) and the interpretation of dummy variable results. The socio-economic variables were again found to be relatively unimportant in accounting for the variance in the desire and expectation to have another child, even though all other independent variables were controlled.

Section 2: Discussion

We are now in the position to offer some answer to the questions put forward in Chapter I. To reiterate, they are: Do married women

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(6) A study of Table 21 reveals that there are two instances where the zero-order correlation coefficients are very high, namely, that between parity and expected family size, and that between two dummy variables with the same parent variable (respondent's occupation). These might have confounded our regression results (for a discussion of multicollinearity, see Nie et al., 1975: 340-341).

in New Zealand have any sex preference? If they do, what kind would it be? Would it be strong enough to affect subsequent fertility intentions and lastly, how important is it in comparison to other independent variables?

According to findings from the present study, those married European women, who wanted and expected another child, displayed a very slight preference for sons. The preference for gender balance is apparent in their sex preference for the second child; they preferred to have another child of the opposite sex to the first-born. The son preference is illustrated by the fact that, among those with a son and a daughter, 41.7 percent preferred to have another son. As these preferences could not be statistically detected among the total sample of respondents, it leads to the belief that they are not strong enough to affect subsequent intentions. The findings seem to indicate that, at lower parity, the question of sex preference might arise after the decision to have another child. At higher parity, the situation is harder to interpret. Assuming that there is no process of rationalization operating, the decision to have another child among higher-parity respondents, can be the result either of imbalanced sex composition of children, or of the desire to fulfil their expected family size. Even if sex composition of children affected subsequent fertility intentions, it was found to be unimportant, compared to such factors as expected family size and parity.

There are three reasons to suspect that son preference in the New Zealand culture might be more prevalent than that reported in this study. Our sample, which consists only of European respondents, might have weaker son preference than their Maori and Pacific Island counterparts. This is a likelihood, given the fact that people from different cultural backgrounds display different degree of son preference (Arnold et al., 1975: 65) and secondly, that son preference was found to be stronger and more definite in many non-European cultures (Largey, 1972: 385). The second reason arises from the fact that son preference was found to be stronger in the rural than in the urban area, probably because of the greater importance of the male in the agricultural situation (Williamson, 1976b). As the respondents in this study reside in relatively

urban places, son preference in the New Zealand culture as a whole might be understated. Lastly, husbands were found to be more extreme than their wives in favouring sons (Coombs and Fernandez, 1978; Williamson, 1978). Therefore, interviewing only the wives can also understate the degree of son preference in the culture. Further studies in the area of sex preference are needed, that include both European and non-European husbands and wives, from rural as well as urban areas.

The preference for a balanced sex composition of children means that, even if sex-control methods were available and effective, the future sex ratios would not be out of balance. Given the son preference, there might be more males than females but the discrepancy would not be large enough to result in such significant social and political changes as those speculated by Nimboff (1951) and Etzioni (1968). Since the preference for gender balance was not strong, it is doubtful that sex-preselection techniques would be adopted in the first place.

The finding that respondents with children of both sexes had higher parity than those with children all of the same sexes contradicts that finding reported by Cutright, Belt and Scanzoni (1974). They found that those with same-sexed children were more likely than their counterparts with mixed-sex children, to intend to have more than two children. Considering that both of the studies used basically the same method of analysis (multiple regression with dummy variables), these contradictory findings need to be clarified by further research, using the same analytical method.

The study found that there is almost always a discrepancy between the desire and the expectation to have another child. To know what factors account for the discrepancy would help implement population policy objectives. Douglas (1975) considered that many of the New Zealand official policies are essentially pronatalist. Besides, current fertility levels are falling rapidly, to the extent of arousing some concern that fertility might fall to a level below that necessary for a long-term replacement of the population (O'Neill, 1975). Given the validity of these assertions and the knowledge of the reasons why people want, but do not expect another child, the expectation could be raised to the same level of the desire to have

another child. To gain more knowledge and understanding of the mechanisms operating, research is necessary in the area of conjugal role relationships, in the context of fertility decisions and spousal communication.

Section 3: Conclusion

The study has reported the preliminary findings from an analysis of the relationships between sex composition of living children, sex preference for the next child and subsequent fertility intentions. The findings lead to the conclusion that preference for gender balance and son preference are not strong among the European women who comprise our sample. In addition, socio-economic variables are found to be comparatively unimportant in accounting for differential subsequent fertility intentions. The more important variables are expected family size and parity of respondents. A discrepancy between desire and expectation to have another child has a strong policy implication, regardless of whether it is pro or anti-natalist population policy.

There are a number of questions that need to be answered: a) why are socio-economic factors relatively unimportant in influencing expected family size and subsequent fertility intentions; b) why does this study yield a result that contradicts that reported by Belt, Cutright and Scanzoni (1974), despite the similarity of other findings and of the analytical method (see page 17); c) what are the factors that account for the discrepancy between the desire and the expectation to have another child?

Further research is needed, for a more complete understanding of the mechanisms involved in the relationship between sex preference and fertility or fertility intentions in New Zealand. The research should include respondents of both sexes, from European as well as non-European stock and also include both rural and urban respondents. Two interesting areas of further research are conjugal communication and spousal role relationships, that are related to sex preference, fertility and fertility decisions.

APPENDIX

TABLE 1

Variables and Their Categorization

	Variables	Categories
1)	her age	-
2)	her education	(1) none, (10) primary (21) one year in secondary (22) two years' secondary (23) three years' secondary (24) four years' secondary (25) five years' secondary (26) six years' secondary (30) secondary with S.C. (40) secondary with U.E. (50) tertiary without exam (60) tertiary with S.C. (70) tertiary with U.E. (80) tertiary graduates
3)	per parity	-
4)x	sex of the first living child	(1) boy (2) girl
5)x	sex of the second living child	(1) boy (2) girl
6)x	sex of the third living child	(1) boy (2) girl
7)x	sex of the fourth living child	(1) boy (2) girl
8)x	sex composition of the children	for the one-parity group (1) one boy (2) one girl for the two-parity group (1) two boys (2) two girls (3) one of each for the three-parity group (1) three boys (2) two boys (3) one boy (4) three girls for the four-parity group (1) four boys (2) three boys (3) two boys (4) one boy (5) four girls for all parities together (1) all of the same sex (2) both boy(s) and girl(s)
9)	her ideal family size at marriage	-
10)	her present ideal size	-
11)	her expected family size	-
12)	her desire to have another child	(1) yes (2) no (3) don't know
13)	her expectation to have another child	(1) yes (2) no (3) don't know
14)x	her desire and expectation	(1) yes (2) no

TABLE 1 (Continued)

Variables	Categories
15) her sex preference for the next child	(1) boy (2) girl (3) no preference
16) whether she was working	(1) yes (2) no
17)x her occupation	(1) unskilled or semi-skilled (2) skilled crafts or clerical (3) professional or administrative
18) her weekly take-home pay	(1) under $20 (2) $20-29 (3) $30-39 (4) $40-49 (5) $50-59 (6) $60-69 (7) $70-79 (8) $80-89 (9) $90-99 (10) $100-119 (11) $120-139 (12) $140-159 (13) $160-179 (14) $180-199 (15) $200 or more
19) his occupation	as in 17)
20) his weekly take-home pay	as in 18)

x variables created in this study

\- interval variables

x occupations of those who worked at some point in time as well as those of working respondents

TABLE 2

Variables and Their Dummy Variables

	Variables	Categories	Dummy Variables
1)	her education	(10) primary	R.C.
		(21) one yr. sec.	
		(22) two yr. sec.	
		(23) three yrs. sec.	EDUC1
		(24) four yrs. sec.	
		(25) five yrs. sec.	
		(26) six yrs. sec.	-
		(30) sec. with S.C.	EDUC2
		(40) sec. with U.E.	
		(50) tert. without exam	
		(60) tert. with S.C.	EDUC3
		(70) tert. with U.E.	
		(80) tert. with degree	
2)	sex composition of the living child(ren)	(1) all of the same sex	GENDER1
		(2) both boy(s) & girl(s)	R.C.
3)	her desire and expectation to have another	(1) yes	DESIREX1
		(2) no	R.C.
4)	whether she was working	(1) yes	WORK1
		(2) no	R.C.
5)	her occupation	(1) unskilled or semi-skilled	FOCCUP1
		(2) skilled crafts or clerical	FOCCUP2
		(3) professional or administrative	R.C.
6)	her weekly take-home pay	(0) not working	FINCUM1
		(1) under $20	FINCUM2
		(2) $20-29	FINCUM3
		(3) $30-39	
		(4) $40-49	FINCUM4
		(5) $50-59	
		(6) $60-69	FINCUM5
		(7) $70-79	
		(8) $80-89	FINCUM6
		(9) $90-99	
		(10) $100-119	
		(11) $120-139	
		(12) $140-159	R.C.
		(13) $160-179	
		(14) $180-199	
		(15) $200 and over	-
7)	his occupation	as in 5)	

TABLE 2 (Continued)

	Variables	Categories	Dummy Variables
8)x	his weekly take-home pay	(0) not working	MINCUM1
		(1) under $20	-
		(2) $20-29	-
		(3) $30-39	
		(4) $40-49	MINCUM2
		(5) $50-59	
		(6) $60-69	
		(7) $70-79	MINCUM3
		(8) $80-89	
		(9) $90-99	MINCUM4
		(10) $100-119	
		(11) $120-139	MINCUM5
		(12) $140-159	
		(13) $160-179	MINCUM6
		(14) $180-199	
		(15) $200 and over	R.C.

- No respondents under the category

R.C. Reference category

x Categories were combined at different intervals for the wife's weekly take-home pay categories due to different frequency distributions

TABLE 4.1

Parity Distribution and the Desire to Have Another Child

Desire	Parities One	Two	Three	Four	
yes	70.0 (35)	21.3 (34)	11.4 (12)	7.7 (3)	23.7 (84)
no	26.0 (13)	67.5 (108)	83.8 (88)	87.2 (34)	68.6 (243)
don't know	4.0 (2)	11.3 (18)	4.8 (5)	5.1 (2)	7.6 (27)
	14.1 (50)	45.2 (160)	29.7 (105)	11.0 (39)	100.0% (N=354)

Cramer's V	0.3367
lambda	0.1982
uncertainty coefficient	0.1270

TABLE 4.2

Parity Distribution and the Expectation to Have Another Child

Expectation	Parities One	Two	Three	Four	
yes	58.0 (29)	13.1 (21)	5.7 (6)	2.6 (1)	16.1 (57)
no	34.0 (17)	74.4 (119)	87.6 (92)	87.2 (34)	74.0 (262)
don't know	8.0 (4)	12.5 (20)	6.7 (7)	10.3 (4)	9.9 (35)
	41.1 (50)	45.2 (160)	29.7(105)	11.0 (39)	100.0% (N=354)

Cramer's V	0.3437
lambda	0.1304
uncertainty coefficient	0.1307

TABLE 7

Ideal Family Size of the One-Parity Respondents

Ideal Family Size	Frequencies	Percentage
0	2	4.0
1	2	4.0
2	29	58.0
3	7	14.0
4	8	16.0
5	0	0.0
6	1	2.0
7	1	2.0
	50	100.0

TABLE 10.3

Ideal Family Size and the Desire to Have Another Child Among the Two-parity Respondents

Desire	Ideal Family Size 0	1	2	3	4	5	6 or more	
yes	33.3 (1)	0.0 (0)	3.3 (3)	48.3 (14)	45.2 (14)	0.0 (0)	50.0 (2)	21.3 (34)
no	66.7 (2)	100.0 (1)	87.5 (78)	34.5 (10)	45.2 (14)	100.0 (1)	50.0 (2)	67.5 (108)
don't know	0.0 (0)	0.0 (0)	11.0 (10)	17.2 (5)	9.7 (3)	0.0 (0)	0.0 (0)	11.3 (18)
	1.9 (3)	0.6 (1)	56.9 (91)	18.1 (29)	19.4 (31)	0.6 (1)	2.5 (4)	100% (N=160)

Cramer's V 0.4006
lambda 0.0962
uncertainty coefficient 0.20753

TABLE 10.4

Ideal Family Size and the Expectation to Have Another Child Among the Two-Parity Respondents

Expectation	Ideal Family Size 0	1	2	3	4	5	6 or more	
yes	0.0 (0)	0.0 (0)	0.0 (0)	37.9 (11)	25.8 (8)	0.0 (0)	50.0 (2)	31.1 (21)
no	66.7 (2)	100.0 (1)	91.2 (83)	37.9 (11)	61.3 (19)	100.0 (1)	50.0 (2)	74.4 (119)
don't know	33.3 (1)	0.0 (0)	8.8 (8)	24.1 (7)	12.9 (4)	0.0 (0)	0.0 (0)	12.5 (20)
	1.9 (3)	0.6 (1)	56.9 (91)	18.1 (29)	19.4 (31)	0.6 (1)	2.5 (4)	100% (N=160)

Cramer's V 0.4125
lambda 0.0244
uncertainty coefficient 0.2467

TABLE 12.1

Sex Composition of Children and the Desire to Have Another Child Among the Four-parity Respondents

Desire	Sex Composition: All boys	3 boys	2 boys	1 boy	All girls	
yes	50.0 (1)	0.0 (0)	15.4 (2)	0.0 (0)	0.0 (0)	7.7 (3)
no	50.0 (1)	100.0 (10)	84.6 (11)	91.7 (11)	50.0 (1)	87.2 (34)
don't know	0.0 (0)	0.0 (0)	0.0 (0)	8.3 (1)	50.0 (1)	5.1 (2)
	5.1 (2)	25.6 (10)	33.3 (13)	30.8 (12)	5.1 (2)	100.0%(N=39)

Cramer's V	0.4768
lambda	0.0000
uncertainty coefficient	0.3554

TABLE 12.2

Sex Composition of Children and the Expectation to Have Another Child Among the Four-parity Respondents

Expectation	Sex Composition: All boys	3 boys	2 boys	1 boy	All girls	
yes	50.0 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	2.6 (1)
no	50.0 (1)	100.0 (10)	92.3 (12)	75.0 (9)	100.0 (2)	87.2 (34)
don't know	0.0 (0)	0.0 (0)	7.7 (1)	25.0 (3)	0.0 (0)	10.3 (4)
	5.1 (2)	25.6 (10)	33.3 (13)	30.8 (12)	5.1 (2)	100.0% (N=39)

Cramer's V	0.5471
lambda	0.0000
uncertainty coefficient	0.3313

TABLE 13

Parity and Ideal Family Size of All Respondents

Ideal Family Size	Parity 1	2	3	4	
0	4.0 (2)	1.9 (3)	0.9 (1)	0.0 (0)	1.7 (6)
1	4.0 (2)	0.6 (1)	0.0 (0)	0.0 (0)	0.8 (3)
2	58.0 (29)	56.9 (91)	26.7 (28)	28.2 (11)	44.9(159)
3	14.0 (7)	18.1 (29)	35.2 (37)	5.1 (2)	21.2 (75)
4	16.0 (8)	19.4 (31)	32.4 (34)	53.9 (21)	26.6 (94)
5	0.0 (0)	0.6 (1)	0.9 (1)	5.1 (2)	1.1 (4)
6 or more	4.0 (2)	2.5 (4)	3.8 (4)	7.7 (3)	3.7 (13)
	14.1 (50)	45.2(160)	29.7(105)	11.0 (39)	100.0% (N=354)

TABLE 14.1

Sex of the Only Child and the Desire and Expectation to have Another Child among the One-parity Respondents

Desire and Expectation	Sex of the First-borns: Male	Female	
yes	68.4 (13)	71.4 (15)	70.0 (28)
no	31.6 (6)	28.6 (6)	30.0 (12)
	47.5 (19)	52.5 (21)	100.0% (N=40)
Cramer's V			0.0328
lambda			0.0000
uncertainty coefficient			0.0009

TABLE 14.2

Sex Composition and the Desire and Expectation to Have Another Child Among the Two-parity Respondents

Desire and Expectation	Sex Composition: Two boys	One boy	Two girls	
yes	14.8 (4)	17.1 (12)	17.4 (4)	16.7 (20)
no	85.2 (23)	82.9 (58)	82.6 (19)	83.3 (100)
	22.5 (27)	58.3 (70)	19.2 (23)	100.0% (N=120)
Cramer's V				0.0269
lambda				0.0000
uncertainty coefficient				0.0008

TABLE 14.3

Sex Composition and the Desire and Expectation to Have Another Child Among the Three-parity Respondents

Desire and Expectation	Sex Composition: 3 boys	2 boys	1 boy	3 girls	
yes	21.4 (3)	2.6 (1)	0.0 (0)	0.0 (0)	4.4 (4)
no	78.6 (11)	97.4 (37)	100.0 (30)	100.0 (8)	95.6 (86)
	15.6 (14)	42.2 (38)	33.3 (30)	8.9 (8)	100.0%N=90)

Cramer's V	0.35856
lambda	0.00000
uncertainty coefficient	0.27288

TABLE 14.4

Sex Composition and the Desire and Expectation to Have Another Child Among the Four-parity Respondents

Desire and Expectation	Sex Composition: 4 boys	3 boys	2 boys	1 boy	4 girls	
yes	50.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	3.0 (1)
no	50.0 (2)	100.0 (10)	100.0 (11)	100.0 (9)	100.0 (1)	97.0 (32)
	6.1 (2)	30.3 (10)	33.3 (11)	27.3 (9)	3.0 (1)	100.0% (N=33)

Cramer's V	0.69597
lambda	0.00000
uncertainty coefficient	0.69064

TABLE 16.1

Respondent's Education Attainment[x]

	Categories	Frequencies	
10)	primary	14	
21)	one-year secondary	1	
23)	three-year secondary	15	
24)	four-year secondary	61	← First decile
25)	five-year secondary	96	
30)	secondary with S.C.	18	
40)	secondary with U.E.	61	
50)	tertiary without exam	23	← Ninth decile
70)	tertiary with U.E.	1	
80)	tertiary with degree	14	
	TOTAL	304	
	median	25.135	
	First decile	30.4	
	Ninth decile	273.6	

x Excluded those whose wife did not know whether they want or expect another child.

TABLE 16.2

Respondent's Occupation[x]

	Categories	Frequencies	
1)	unskilled or semi-skilled	126	← First decile
2)	skilled crafts or clerical	186	
3)	professional or administrative	42	← Ninth decile
	TOTAL	354	
	median	1.774	
	First decile	35.4	
	Ninth decile	318.6	

x Occupation of those who used to work and those who were working in 1975.

TABLE 16.3

Husband's Weekly Take-home Pay[x]

	Categories	Frequencies	
0)	no income	50	← First decile
3)	$30-39	1	
4)	$40-49	2	
5)	$50-59	2	
6)	$60-69	9	
7)	$70-79	14	
8)	$80-89	16	
9)	$90-99	35	
10)	$100-119	58	
11)	$120-139	36	
12)	$140-159	26	
13)	$160-179	13	
14)	$180-199	13	
15)	$200 or more	29	← Ninth decile
	TOTAL	304	
	median	9.897	
	First decile	30.4	
	Ninth decile	273.6	

x Excluded those whose wife did not know whether they want or expect another child.

TABLE 16.4

Husband's Occupation[x]

	Categories	Frequencies
1)	unskilled or semi-skilled	49 ← First decile
2)	skilled crafts or clerical	151
3)	professional or administrative	104 ← Ninth decile
	TOTAL	304
	median	2.182
	First decile	30.4
	Ninth decile	273.6

x Occupation of those who used to work and those who were working in 1975.

x Excluded those whose wife did not know whether they want or expect another child.

TABLE 18

Standardized Partial Regression Coefficients (betas), with the Desire and Expectation to Have Another Child as the Dependent Variable

Predictors		betas
KIDSHAVE	(Parity)	-1.2773
SIZEXPEC	(Expected family size)	1.3898
	multiple R	0.8895
	R^2	0.7912

TABLE 19

Standardized Partial Regression Coefficients (betas), with Expected Family Size as the Dependent Variable.

Predictors[x]		betas
EDUC2	(2-5 years' secondary)	0.0729
EDUC3	(secondary with S.C. or U.E.)	0.0649
EDUC4	(tertiary)	0.1055
FOCCUP1	(unskilled, semi-skilled)	0.1199
FOCCUP2	(skilled crafts or clerical)	0.1505
FINCUM1	(no weekly take home pay)	-0.0850
FINCUM2	(under $20)	-0.0006
FINCUM3	($20-39)	-0.0348
FINCUM4	($40-59)	-0.1125
FINCUM5	($60-79)	0.0002
FINCUM6	($80-99)	-0.0544
MOCCUP1	(unskilled, semi-skilled)	-0.0194
MOCCUP2	(skilled crafts or clerical)	-0.0513
MINCUM1	(no weekly take home pay)	0.0044
MINCUM2	($30-59)	-0.0254
MINCUM3	($60-89)	-0.0268
MINCUM4	($90-119)	0.0155
MINCUM5	($120-159)	-0.0185
MINCUM6	($160-199)	-0.0695
HERAGE	(age of respondents)	-0.2028
KIDSHAVE	(parity)	0.7847
GENDER1	(sex composition of children)	0.0829
IDEALNOW	(present ideal family size)	0.2946
	multiple R	0.8723
	R^2	0.7610

x See Table 2 for reference categories

TABLE 20

Standardized Partial Regression Coefficients (betas), with Parity as the Dependent Variable

Predictors[x]		betas
EDUC2	(2-5 years' secondary)	-0.0043
EDUC3	(secondary with S.C. or U.E.)	-0.1654
EDUC4	(tertiary)	-0.0847
FOCCUP1	(unskilled, semi-skilled)	-0.0948
FOCCUP2	(skilled crafts or clerical)	-0.1018
FINCUM1	(no weekly take home pay)	0.1090
FINCUM2	(under $20)	0.0275
FINCUM3	($20-39)	0.0911
FINCUM4	($40-59)	0.1233
FINCUM5	($60-79)	0.0045
FINCUM6	($80-99)	0.0541
MOCCUP1	(unskilled, semi-skilled)	-0.0249
MOCCUP2	(skilled crafts or clerical)	0.0193
MINCUM1	(no weekly take home pay)	-0.0466
MINCUM2	($30-59)	-0.0210
MINCUM3	($60-89)	-0.0205
MINCUM4	($90-119)	-0.0958
MINCUM5	($120-159)	-0.0090
MINCUM6	($160-199)	0.0142
HERAGE	(age of respondents)	0.2683
GENDER1	(sex composition of children)	-0.1510
IDEALNOW	(present ideal family size)	-0.1678
SIZEXPEC	(expected family size)	0.8325
	multiple R	0.8640
	R^2	0.7641

x See Table 2 for reference categories.

TABLE 21

Zero-order Correlation Coefficients among All the Variables in a Multiple Regression with Dummy Variables

Variables	KIDSHAVE	GENDER1	FINCUM1	FINCUM2	FINCUM3	FINCUM4	FINCUM5	FINCUM6	IDEALNOW	EDUC2	EDUC3	EDUC4
HERAGE	0.29	0.01	-0.31	-0.06	0.09	0.15	0.11	0.13	0.01	-0.14	0.08	0.07
KIDSHAVE		-0.25	-0.07	-0.04	0.14	-0.00	0.00	0.00	0.25	-0.29	0.06	-0.01
GENDER1			-0.05	-0.03	0.03	0.09	-0.04	0.01	-0.09	-0.03	0.02	0.08
FINCUM1				-0.29	-0.31	-0.48	-0.24	-0.17	-0.00	0.07	0.13	-0.05
FINCUM2					-0.11	-0.17	-0.09	-0.06	-0.01	0.01	-0.08	0.05
FINCUM3						-0.19	-0.09	-0.07	0.05	0.04	-0.10	0.12
FINCUM4							-0.14	-0.11	0.00	0.11	-0.07	-0.14
FINCUM5								-0.05	-0.06	0.03	-0.00	0.00
FINCUM6									0.04	-0.06	0.04	0.06
IDEALNOW										-0.16	0.13	0.04
EDUC2											-0.68	-0.44
EDUC3												-0.21
EDUC4												
MINCUM1												
MINCUM2												
MINCUM3												
MINCUM4												
MINCUM5												
MINCUM6												
FOCCUP1												
FOCCUP2												
MOCCUP1												
MOCCUP2												
SIZEXPEC												

TABLE 21 (Continued)

Variables	MINCUM1	MINCUM2	MINCUM3	MINCUM4	MINCUM5	MINCUM6	FOCCUP1	FOCCUP2	MOCCUP1	MOCCUP2	SIZEXPEC
HERAGE	0.03	0.06	-0.14	-0.01	-0.03	0.09	-0.10	0.00	-0.20	0.03	0.01
KIDSHAVE	0.08	-0.07	-0.03	-0.18	-0.06	0.01	0.00	-0.01	-0.12	-0.03	0.78
GENDER1	-0.19	-0.02	-0.10	0.19	-0.01	0.08	-0.19	0.12	-0.07	0.00	-0.15
FINCUM1	-0.06	-0.05	0.05	-0.05	0.06	-0.04	-0.07	0.11	0.07	-0.12	0.00
FINCUM2	0.00	0.18	-0.04	-0.11	0.04	0.00	0.09	-0.14	-0.02	0.02	0.01
FINCUM3	0.01	-0.04	-0.06	-0.01	-0.08	0.18	0.10	-0.09	0.00	-0.02	0.12
FINCUM4	0.00	0.00	-0.07	0.08	0.02	-0.26	0.13	-0.05	-0.04	0.14	-0.09
FINCUM5	0.04	-0.04	0.04	-0.02	-0.02	-0.08	-0.15	0.16	-0.03	0.09	0.01
FINCUM6	0.02	-0.03	0.12	0.03	-0.10	0.02	-0.11	0.07	0.04	-0.06	-0.03
IDEALNOW	0.00	0.00	0.09	-0.05	-0.03	-0.05	0.10	-0.11	0.00	0.04	0.47
EDUC2	0.03	-0.09	0.05	0.14	-0.03	-0.01	0.24	0.03	0.15	0.19	-0.04
EDUC3	0.04	0.00	0.04	-0.13	0.03	0.00	-0.19	0.10	-0.08	-0.09	0.06
EDUC4	-0.10	0.05	-0.11	-0.11	0.06	0.07	-0.24	-0.08	-0.12	-0.21	0.03
MINCUM1		-0.06	-0.18	-0.29	-0.24	-0.14	-0.02	0.05	-0.08	-0.02	0.07
MINCUM2			-0.05	-0.79	-0.07	-0.40	0.03	0.00	-0.06	0.13	-0.09
MINCUM3				-0.24	-0.20	-0.12	-0.01	0.01	0.17	0.06	0.00
MINCUM4					-0.31	-0.19	0.13	-0.02	0.01	0.17	-0.11
MINCUM5						-0.16	0.09	-0.12	0.01	0.05	0.03
MINCUM6							-0.19	0.17	-0.01	-0.18	-0.07
FOCCUP1								-0.77	0.10	0.21	0.01
FOCCUP2									0.02	-0.07	-0.02
MOCCUP1										-0.42	-0.06
MOCCUP2											-0.05
SIZEXPEC											

TABLE 22.1

Standardized Partial Regression Coefficients (betas), with the Desire and Expectation to Have Another Child as the Dependent Variable

Predictors[x]		betas
SIZEXPEC	(expected family size)	1.3868
KIDSHAVE	(parity)	-1.2549
HERAGE	(age of respondents)	-0.0599
FINCUM1	(no income)	0.0333
MINCUM6	($160-199)	0.0420
EDUC2	(2-5 years secondary)	0.0350
FINCUM3	($20-39)	0.0166
MINCUM1	(no income)	-0.0290
FINCUM5	($60-79)	-0.-392
IDEALNOW	(present ideal family size)	-0.0216
FINCUM2	(under $20)	-0.0376
MINCUM5	($120-159)	0.0260
FOCCUP1	(unskilled, semi-skilled)	-0.0365
MOCCUP1	(unskilled, semi-skilled)	-0.0292
MOCCUP2	(skilled crafts or clerical)	-0.0275
FOCCUP2	(skilled crafts or clerical)	-0.0227
EDUC4	(tertiary education)	-0.0305
EDUC3	(secondary with S.C. or U.E.)	-0.-265
FINCUM4	($40-59)	-0.-165
MINCUM2	($30-59)	0.0086
	multiple R	0.8998
	R^2	0.8097

x Four predictors were omitted due to their insufficient F ratios.

x c.f. Table 2 for reference categories.

TABLE 22.2

Standardized Partial Regression Coefficients
of the Five Best Predictors of Expected Family Size

Predictors[x]		betas
KIDSHAVE	(parity)	0.7916
IDEALNOW	(present ideal family size)	0.2855
HERAGE	(age of respondents)	-0.2082
GENDER1	(sex composition of children)	0.0879
FINCUM4	($40-59)	-0.0638
	multiple R	0.8620
	R^2	0.7430

x c.f. Table 2 for reference categories

TABLE 22.3

Relative Influence of the Five Best Predictors of Parity, from a Stepwise Regression

Predictors*		betas
SIZEXPEC	(expected family size)	0.8251
HERAGE	(respondent's age)	0.2782
IDEALNOW	(present ideal family size)	-0.1605
GENDER1	(sex composition of children)	-0.1375
MINCUM4	($90-119)	-0.0684
	multiple R	0.8551
	R^2	0.7312

* C.f. Table 2 for reference categories

TABLE 22.4

Relative Influence of the Five Best Predictors of Ideal Family Size, from a Stepwise Regression

Predictors*		betas
SIZEXPEC	(expected family size)	0.6976
KIDSHAVE	(parity)	-0.3001
EDUC2	(2-5 years secondary)	-0.1737
FOCCUP1	(unskilled, or semi-skilled)	0.1320
MINCUM3	($60-89)	0.0939
	multiple R	0.5503
	R^2	0.3028

* c.f. Table 2 for reference categories

TABLE 23.1

Standardized Partial Regression Coefficients (betas), with the Desire and Expectation to Have Another Child as the Dependent Variable (for all Two-parity) Respondents

Predictors		betas
IDLATMAR	(Ideal family size at marriage)	0.0183
HERAGE	(age of respondents)	-0.1186
IDEALNOW	(present ideal family size)	-0.0502
SIZEXPEC	(expected family size)	0.8491
	multiple R	0.8799
	R^2	0.7743

TABLE 23.2

Standardized Partial Regression Coefficients (betas), Showing Relative Influence of Socio-economic Variables on the Desire and Expectation to Have Another Child (for all Two-parity Respondents)

Predictors[x]		betas
EDUC1	(1-5 years secondary)	0.1864
EDUC2	(secondary with S.C. or U.E.)	0.1881
EDUC3	(tertiary with U.E. or degree)	0.2022
FOCCUP1	(skilled crafts or clerical)	-0.0296
FOCCUP2	(professional or administrative)	-0.1770
FINCUM1	($1-39)	0.0903
FINCUM2	($40-69)	-0.1918
FINCUM3	($70-119)	-0.0647
FINCUM4	($180-199)	-0.0395
MOCCUP1	(skilled crafts or clerical)	-0.1132
MOCCUP2	(professional or administrative)	-0.0254
MINCUM1	($-39)	-0.0745
MINCUM2	($40-69)	-0.0258
MINCUM3	($70-99)	-0.0552
MINCUM4	($100-159)	-0.1161
MINCUM5	($160-199)	-0.1689
GENDER1	(sex composition of children)	-0.0395
	multiple R	0.3485
	R^2	0.1214

x Dummy variables were categorized differently from those in Table 2, due to differed frequency distribution.

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