

## WHICH AUSTRALIANS ARE HAVING THREE OR MORE CHILDREN?

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*Australia's total fertility rate is currently below replacement (at 1.74). Third and higher order births among those who do have children prevent it falling even lower. This article uses recent survey data to discover which Australians are having three or more children and to analyse whether they are likely to continue to do so.*

This paper discusses the importance of third and higher order births in the context of replacement level fertility, and then builds a model, one for males and one for females, which identifies a set of characteristics that predicts whether people with two children go on to have three or more.

Australian fertility trends and patterns is a topic that has been extensively researched. The explicit focus on people who have third and higher order births, in comparison with those who have two children, however, is an area of fertility research that has yet to be explored. Furthermore, the focus of the majority of Australian fertility studies has been on women, with relatively few studies on male fertility. Thus, this paper examines two aspects of Australian fertility patterns that have received little attention.

### **DATA SOURCE**

The main source of data for this paper is the first round of the Negotiating the Life Course Survey, a telephone survey conducted by the Research School of Social Sciences, Australian National University. The survey was conducted between December 1996 and March 1997, and was conducted on a national random sample of 1247 women and 984 men aged between 18 and 54. (These were the sample figures attained; the response rate was 65 per cent for females and 55 per

cent for males.) In addition, each respondent was from a different household.

The aim of the survey was to gather information on how Australians manage their work and family life. Thus, the survey collected standard demographic and economic information such as ethnicity, educational histories, occupational histories, income, children ever born, and relationship histories. In association with the demographic and economic information, the survey also asked a range of questions designed to obtain information about the respondent's values and attitudes towards work, families, household task sharing, and gender roles. This survey is unique in that it collected information on family size and desired fertility from males as well as from females. Thus, an examination of the characteristics of males who have larger families is feasible.

### **FERTILITY IN AUSTRALIA AND THE IMPORTANCE OF THE THIRD CHILD**

Australia currently has a fertility rate that is below the level required for the population to replace itself. In 1998, the total fertility rate (TFR) was 1.74,<sup>1</sup> meaning that women were having on average 1.74 children. The TFR required for population replacement in Australia is currently around 2.06.<sup>2</sup> Thus, if the current level of fertility is sustained into the future,

Australia's population will (in the absence of substantial immigration, or increase in fertility) begin to decline.

Third and higher order births make a significant contribution to maintaining fertility at around replacement level. McDonald<sup>3</sup> notes that if 20 per cent of women have no children, a situation that is predicted for the cohorts of women born in the 1960s,<sup>4</sup> and a further 20 per cent have only one child, then these women (40 per cent of the women in a society) contribute only 0.2 children to the TFR. In order for such a society to maintain a level of fertility that would ensure replacement, the remaining 60 per cent of women would each need to have, on average, 3.2 children. Thus, the proportion of people who have three or more children in a given society is crucial for the long-term maintenance of population numbers. However, whether population size stabilisation, growth, or decline is desirable is debated among demographers, environmentalists, economists, and politicians.

McDonald predicts, from an examination of the changes in fertility levels between 1986 and 1996, that a smaller proportion of Australian women currently aged 30 will have three or more children at the completion of their fertility careers than women who were aged 30 in 1986.<sup>5</sup> He expects that 22 per cent of these women will have no children, 16 per cent will have one child, 35 per cent two children, and only 27 per cent will have three or more children. Most of this latter group will have three children (20 per cent of all women). Such a distribution results in a TFR of 1.77, slightly below the 1995 level of 1.8 and slightly above the current (1998) TFR of 1.74. As McDonald states, the important point from this distribution is that more than 50 per cent of the total fertility is contributed

by the 27 per cent of women who have three or more children.<sup>6</sup> However, in 1986 38 per cent of women who were aged 30-34 had three or more children by the time they were 40-44. Thus, this predicted fertility distribution, with only 27 per cent of women having three or more children, represents a recent decrease of more than 10 percentage points in the proportion of women who have third or higher order births. If this trend continues then further decreases in the TFR will occur.

The decline in the proportion of women having three or more children in association with an increase in the proportion of women having zero or one child is the main cause of Australia's below replacement fertility. Further declines in the proportion of women having three or more children will result in additional reductions in Australia's TFR. Such a reduction would have serious implications for the future age composition and size of Australia's population, in the absence of substantial immigration. McDonald<sup>7</sup> notes that if the current very low TFR of Italy (1.2) continued for 100 years, after a stable population was reached, the population size would decline to only 14 per cent of the size it had been in 1995. (A 'stable population' is one with constant birth and death rates: it may be growing, stationary or declining. A stable *stationary* population has constant birth and death rates which are also in balance with each other.) A TFR of 1.7 (currently the level of fertility found in France), which is slightly lower than Australia's, would result in a halving of the population size in 100 years, again after a stable population of constant birth and death rates was reached.

Reductions in fertility levels also result in population ageing due to the

decreasing proportion of young people and the consequent increasing proportion of the elderly. Population ageing has numerous economic and social implications, including the provision of care and services for an increasing number of elderly citizens. Due to the problems associated with population ageing and the potential for population decline, and since third and higher order births are essential for the maintenance of the fertility rate at or slightly below replacement, it is important to document and understand the characteristics — demographic and social — of people who have three or more children.

### **THE MODELS**

Statistical analysis of the data from the Negotiating the Life Course Survey was done using logistic regression. The benefit of this type of analysis is that it shows the effects of each predictor variable after the effects of all the other predictor variables have been controlled, provided there are no interactions. Characteristics of men and women aged 35 and over who had two or more children in the Negotiating the Life Course Survey were analysed in order to find variables which tended to distinguish those who had two children from those who had three or more. There were 549 women and 387 who met these criteria. For the sake of simplicity continuous variables were dichotomised (they were split at their median with the 'high' classification including the median) and dummy variables were created for the categorical data. The initial models included the variables listed in Table 1. All of these variables, in a bivariate chi-square analysis, significantly differentiated people who had three or more children from those who had two. The category of the variable listed first in Table 1 was associ-

ated with a lower probability of having three or more children and the category listed second with a higher probability.

### **Results of the female model**

The significant variables from the female logistic regression model are illustrated below in Table 2. This table shows that among females there were five variables that significantly predict the likelihood of progressing from parity two to parity three (or higher). The types of variables that predict having a larger family can be divided into two broad groups — social factors and demographic factors. There are two demographic variables: age when second child was born and the number of years between first and second child. The remaining three are social factors.

The variable that has the strongest predicting effect is age when the second child was born. Women who were 27 or younger when their second child was born were 3.8 times more likely than other women to have three or more children. Women who had not been in an 'other de facto relationship', a social variable, were 2.6 times more likely than other women in the two-plus children group to have three or more children. This variable had the second strongest effect. The other demographic factor, number of years between the first and second child, is ranked third; women who had two or fewer years between their first and second births were twice as likely as other women to have a larger family. The final two significant variables are social factors. Women who stated that the timing of their first birth was unplanned and women who said that they were of the Catholic faith were both 1.6 times more likely than other women to have progressed from parity two to parity three or higher. In summary, these findings suggest that women with three

**Table 1: Variables differentiating people who had three or more children from those who had two**

Variable	Category	Male or Female
Employment status	Employed	Males
	Not in paid employment	
Importance of religion	Not important	Both
	Important	
Religion – Catholic versus rest	Rest	Both
	Catholic	
Religion – no religion versus rest	No religion	Both
	Rest	
Age when first child was born	27 or older (M) 24 or older (F)	Both
	Less than 27 (M) Less than 24 (F)	
Age when second child was born	30 or older (M) 27 or older (F)	Both
	Less than 30 (M) Less than 27 (F)	
Number of years between the first and second child	More than 2 years	Both
	2 years or less	
Sex of first two children	Opposite sex	Both
	Same sex	
Reason for the timing of the first birth – non planners versus rest	Rest	Both
	Non planners	
Reason for the timing of the first birth waiting till relationship with partner established versus rest	Relationship	Females
	Rest	
De facto with first spouse before marriage	Yes	Both
	No	
Other de facto relationship (de facto relationship that did not lead to marriage)	Yes	Females
	No	
Age when married for the first time	Older than 21	Females
	21 or younger	
Relationship status	Not in a relationship	Males
	In a relationship	
Annual net income	Less than \$33 000	Males
	\$33 000 or more	
Low (incomplete secondary school or less) level of education versus rest	Rest	Females
	Low	
High (completed secondary school with post school qualifications) level of education versus rest	High	Females
	Rest	

Source: *Negotiating the Life Course Survey*

**Table 2: Logistic regression model for having three or more children among females**

Variable	Category	Odds Ratio	Significance
Age when second child was born	Older than 27	3.8	<0.0001
	27 or younger		
Other de facto relationship (de facto relationship that did not lead to marriage)	Yes	2.6	0.0007
	No		
Number of years between first and second child	More than 2 years	2.1	0.0002
	2 or less years		
Reason for the timing of first birth – non planners versus rest	Rest	1.6	0.0220
	Non planners		
Religion – Catholics versus rest	Rest	1.6	0.0394
	Catholic		

Source: *Negotiating the Life Course Survey* (N = 549)  
 Model chi-square = 110.418, 5 degrees of freedom, p<0.0001  
 There were no significant interaction effects.

or more children are more likely to have traditional values, such as being Catholic and not having been in an 'other de facto relationship'.

There are a couple of interesting omissions from the female model – variables relating to education and occupation. A number of previous studies have found that female educational attainment and work-force participation are negatively associated with fertility.<sup>8</sup> A bivariate analysis found that women with low levels of educational attainment had greater odds of having three or more children. There was, however, no relationship between the progression from parity two to parity three and work force participation or occupation.

This analysis has found that it is social and demographic, and not economic (career orientation, education levels, and income), factors that are significant in predicting the likelihood of progressing from parity two to parity three or higher for Australian women. It is interesting to note that the sex of the first two children was not a significant variable in predict-

ing the progression from parity two to three or higher.

### Results of the male model

The model for males, shown in Table 3, is more complex with eight significant variables. These include economic, social, and demographic factors.

The variable with the greatest predicting effect is employment status, an economic factor. Men who were not in paid employment at the time of the survey were 3.1 times more likely than other men to have a larger family. The other economic variable, net income, was ranked eighth. This result, that the probability of having a larger family increases with a net income of \$33 000 or more, initially appears to be contrary to the finding that men who were not in paid employment had a greater likelihood of having three or more children. However, this is a multivariate analysis, which has controlled simultaneously for employment status and income. Thus for a given level of income men who are not employed are more likely to progress from

**Table 3: Logistic regression model for having three or more children among males**

Variable	Category	Odds Ratio	Significance
Employment status	Employed	3.1	0.0116
	Not in paid employment		
Importance of religion	Not important	3.0	0.0001
	Important		
Age when second child was born	30 or older	2.6	0.0002
	Less than 30		
Relationship status	Not in a relationship	2.4	0.0231
	In a relationship		
Reason for the timing of the first birth – non planners versus rest	Rest	1.9	0.0146
	Non planners		
Number of years between the first and second child	More than 2 years	1.9	0.0058
	2 years or less		
Sex of first two children	Opposite sex	1.7	0.0337
	Same sex		
Annual net income	Less than \$33 000	1.6	0.044
	\$33 000 or more		

Source: *Negotiating the Life Course Survey* (N = 387)  
 Model chi-square = 65.016, 8 degrees of freedom p<0.0001  
 There were no significant interaction effects.

parity two to parity three than men who are employed.

The perceived importance of religion, a social factor, is the variable that has the second greatest effect. Men who stated that religion was important in their lives were three times more likely than other men to have a larger family. The other social factor, not planning the timing of their first birth, was ranked fifth. Men who stated that the reason for the timing of their first birth was that it 'just happened, it was unplanned' had odds of having three or more children that were almost twice as great as other men.

Demographic variables form the largest category of variables which are significant in predicting the odds of progressing from parity two to parity three or higher. There are four demographic factors. The one with the greatest effect — it is ranked third overall — is age when the second child was born. Men who were less than 30 when their second child was born were 2.6 times more likely to have three or more children than other men. The second demographic variable is relationship status, ranked fourth overall. Men who were in a relationship have greater odds (2.4) of having a larger family. Next is the child spacing variable which is ranked sixth. The final significant demographic factor is the sex of the first two children. Men who had two children of the same sex were 1.7 times more likely to progress to parity three or more.

In summary, the variables that were significant in predicting the probability of progressing from parity two to three or more for males form a range of social, demographic, and economic features.

### **Comparison of the female and male models**

The two models show that there are many differences between males and females.

For females being a Catholic is associated with an increased probability of having three or more children, but it is not so for men. It would thus be informative to pair respondents' religion with their partners' religion. Another interesting difference between men and women is that, for women, being in a de facto relationship that did not lead to marriage is correlated with a decreased probability of having three or more children while there is no such relationship for men. This, in association with the significance of being of the Catholic faith, indicates that having more traditional values is correlated with having a larger family for females but not for males.

As mentioned above, employment status and income are significant variables in predicting the likelihood of having three or more children for males. The fact that these are not significant for females indicates that male earnings continue to provide the bulk of family income, thus female income is not a good predictor of the probability of progressing from parity two to parity three. This is because it is the mothers who are still more likely to stay at home to look after children. Often when women return to work, it is to supplement their partner's/children's father's income.

There are two other interesting variables that are significant for men but not for women. The first is that men who state that religion is important in their lives are 3.0 times more likely to have three or more children than other men. Again, this suggests that having a larger family is associated with subscribing to more traditional values and ideals, which perhaps leads to a reluctance to plan their family or to terminate an unwanted pregnancy; rather the philosophy is to accept children when they come. This notion is further supported by the fact that not

planning the timing of the first birth is a risk factor for having three or more children for both men and women. Second, men who have two children of the same sex are 1.7 times more likely to have three or more children than men who had two children of opposite sex, whereas this is not a significant risk factor for females.

An examination of the similarities and differences between the characteristics that distinguish men and women who have three or more children from men and women who have two children enhances the understanding of why some Australians have larger families while others stop at two.

#### **Avenues for further research**

The analysis in this paper of people with larger families and the factors that distinguish them from people who have only two children is by no means exhaustive. Due to the nature of the survey it was not possible to determine what proportion of third and higher order births were unplanned. Such research would add to the understanding of the types of people who have three or more children. Also, there were a number of variables that related to the respondent's partner. However, a number of respondents did not have a partner at the time of the survey, so these variables were not included in the analysis. An investigation that paired respondents and their partners would produce valuable insights into the nature of fertility in Australia.

Furthermore, respondents were asked a number of questions relating to their values, the sharing of housework, the sharing of child-care. An examination of these was not possible due to limitations on the scope of this paper, but such an investigation would yield interesting insights into potential differences in the level of 'gender equity'<sup>9</sup> that exist within

the different family size groups, thus expanding the understanding of fertility patterns in Australia. Another angle of inquiry into fertility trends in Australia is the exploration of the level of individualistic values and goals by family size. Measuring the relationship between individualistic values and fertility would be difficult and establishing a causal order would also be problematic. This is because it would be necessary to establish the level of individualistic values that people had prior to the birth of their children so that it could be determined if people with two children were more likely to have individualistic values than people with larger families. Longitudinal surveys, of which Negotiation the Life Course is one, provide a vehicle for this type of analysis.

#### **The future of fertility and fertility theory**

A number of the findings of this thesis have implications for fertility theories. The first is the finding that female educational attainment and labour force participation (measured by employment and occupational status) are not significant in predicting the progression from parity two to parity three or more. The second is the insights into fertility patterns that are gained from an examination of male fertility. Fertility research in Australia, and elsewhere, needs to be extended to incorporate males as well as females so as to broaden our understanding of fertility trends.

Several of the characteristics that distinguish people with three or more children from people with two, identified in the logistic regression models, have implications for understanding the future of fertility in Australia. Women who were in a de facto relationship that did not lead to marriage were much less likely to have

three or more children. The incidence of de facto relationships in Australia is increasing.<sup>10</sup>

Men who were Catholics as well as men who stated that religion was important in their lives were more likely to have a larger family. The numbers of younger Australians attending church has not been increasing over the last decade.

Finally, both men and women who were at a younger age when their second child was born had a greater probability of having three or more children. The average age of first birth in Australia, for both men and women, has been increasing<sup>11</sup> and as a result the mean age when the second child is born has also increased. Thus, the results of the logistic regression models suggest that there is a potential for further reductions in the proportion of the population that have three or more children, which would in turn lead to a decrease in Australia's TFR.

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THE END

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