

## 6. TECHNICAL ANNEX

This chapter provides a brief overview of the data collection and evaluation procedures used for the NZW:FEE. More detailed documentation is available in the “Technical and Methodological Report” by Marsault *et al.*, (1997).

The target population for the NZW:FEE survey was all women aged 20-59 years at the time of the interview. The main sample consisted of 2,507 women from across New Zealand. Respondents were selected using probability sampling based on a multi-stage stratified design. Each strata consisted of a geographical area (Dharmalingham, 1995). These were the 14 Regional Councils, followed by the Area Units, then by Mesh Blocks as defined by Statistics New Zealand. For each of the geographical areas, or strata, the number of respondents to be interviewed in each stratum was calculated using “sampling with probability proportional to [population] size” or PPS sampling. Clustering was also used.

### THE SAMPLE

Two population over-samples were also carried out: the Maori population and the population living within the Midland Regional Health Authority area<sup>1</sup>. Maori women represented 12 per cent of the New Zealand population at the time of the 1991 Census. It was anticipated that the number of Maori women selected for interview using a random sample would be too low to carry out detailed statistical analysis. A specific strategy was therefore developed to survey additional Maori women. The start points of clusters used for the Maori oversample were simply located at the end points of the 250 clusters used in the main sample. The Maori over-sample consisted of 181 respondents. For the Midland region oversample, a second set of clusters was randomly selected and 329 additional women were interviewed.

A combination of questions and variables from three main sources were used in the final version of the questionnaire used for the NZW:FEE:

### QUESTIONNAIRE DESIGN

- Those drawn from the core and module elements of the questionnaire *Fertility and Family Surveys in Countries of the ECE Region*. The original ECE core questionnaire contains ten major sections and four optional modules. Components from the ECE core questionnaire not included were full migration history, other views, values and beliefs and population policy acceptance.
- Those formulated using as a basis questions from the 1991 New Zealand Census of Population and Dwellings (ethnic identity, education, religion and employment).
- New questions formulated by the PSC to address particular themes which may be classified as: health, family/household structures, government benefits,

<sup>1</sup> The Regional Health Authorities (RHAs) were established in New Zealand to administer funding of the public health system. These were disestablished in 1998 when they were amalgamated into one national body, the Health Funding Authority. The Midland RHA was responsible for funding to the central North Island, an area comprising approximately 20 per cent of New Zealand’s land mass and 20 per cent of the population.

income sources, support networks, child care, maternity leave and savings (Hillcoat-Nalletamby, 1995).

## **DATA COLLECTION**

No data were collected on respondents' opinions, attitudes, values or beliefs towards children or family formation. Nor were data on migration histories collected for the NZW:FEE. Finally, as implied, the NZW:FEE did not interview men.

Data collection was contracted by the PSC to an external agency, Market Research Limited (MRL). The interviews of the NZW:FEE Survey were held face-to-face by experienced female interviewers from MRL's Survey New Zealand (a company owned by several data collection agencies). Within the group there was the capacity to interview in Maori or other languages. All interviewers and supervisors underwent training at which the objectives of the survey and potential problems were discussed. Interviewers also had the opportunity to become familiar with the questionnaire, in particular its logic flow and the respondent selection procedures.

Each interviewer was allocated a number of start points. From each start point, interviewers visited every alternate house and listed all eligible women (aged between 20 and 59 years) in order of birth date, starting with the woman whose birthday fell next. Where birthdays were not known, eligible respondents were listed in alphabetical order. Respondents were then randomly chosen for the final interview when their name fell against a line with an asterix on the 'Door to Door Call Sheet'. Up to three call-backs were made in order to complete the interview. For the Maori over-sample the same procedure was followed from a new set of start points.

## **DATA ENTRY AND DATA CHECKING**

A number of consistency checks were carried out at the data entry level (for example, that the number of children born was consistent with birth histories). Further, more complex validation checks (e.g. overlap of date-year variables) were carried out by the Population Studies Centre (Marsault, *et al*, 1997).

## **RESPONSE RATE AND SAMPLE REPRESENT- ATIVENESS**

One way in which the response rate for the NZW:FEE Survey was calculated was to use the ratio of the number of completed interviews to the number of people contacted. Using this definition, the response rate was 61 per cent. A more refined method is to include in the denominator all respondents listed as eligible within all households contacted but who could not be contacted personally. Using this technique the response rate for the main sample was 54 per cent. It was higher for the Maori sample at 63 per cent.

In order to provide a check on the representativeness of the survey the PSC compared some sample characteristics with the same characteristics from reliable independent sources. These showed that, overall, the NZW:FEE sample was representative of all New Zealand women aged 20-59 years, except in the 20-24 year age group. The survey population slightly under-represents this age group

(they comprised 11 per cent of the survey population and 15 per cent of all New Zealand women aged 20-59 years in the 1991 Census). More important is the significant under-representation of employed women aged 20-24 years. The 1995 New Zealand Household Labour Force Survey shows 64 per cent of women aged 20-24 years in employment (full or part-time), whereas the NZW:FEE population of the same age has only 48 per cent who are employed. This problem is not uncommon in survey research. Respondents in employment often have busy schedules, including work and social commitments, and are difficult to reach. Conversely, young women not in the labour force are over-represented, probably because they were more likely to be at home when the interviewer called and were thus easier to contact. This problem aside, a detailed analysis of NZW:FEE Survey indicates that sampling errors and design effects are minimal, but they differ by variable type and subgroup (Marsault *et al.*, 1997).

A detailed logic check and evaluation of the prevalence of missing information was carried out by the PSC (Marsault *et al.*, 1997). The overall amount of missing information in the entire survey is very small. For the large majority of variables, the proportion of missing data was less than one per cent.

The prevalence of refusals was also very low, with only six variables having refusal levels above one per cent (although still low at less than five per cent). These were:

- Whether or not the respondent had ever obtained government support
- Whether or not the respondent had ever had sexual intercourse
- Whether or not the respondent had had sexual intercourse in the last four weeks
- Whether or not the respondent's partner had had a vasectomy
- Dates when children left home
- Partner's occupation.

The numbers of "don't know" responses are small for the majority of questions, although they are higher than the levels recorded for refusals. Analysis of the "don't know" responses shows that most difficulties arose when respondents had to recall the exact months in which some events took place.

In the NZW:FEE Survey, weights were used only to adjust for the unequal sampling fractions. In the sample design, Maori and women from the Midland RHA area had a higher probability of selection. Weights were computed to adjust for the oversampling of these two groups. Two sets of weights have been calculated: one for the data set that includes the main sample and the Maori oversample, and one for the data set that includes all three samples. The data included in the appendix tables to this report come from all three weighted samples. Analysis of differences between the Maori and non-Maori populations uses the main sample and the Maori oversample. Weights are not needed for this analysis.

## NON-SAMPLING ISSUES

## WEIGHTING

The director of the Centre initiated the project and assumed overall leadership to the project. Two committees were formed to guide the development of the project: a Policy Committee and a Technical Committee.

**POLICY  
COMMITTEE**

The role of the Policy committee was to ensure input from various stakeholders, public agencies and women's organisations and to establish contacts for the dissemination of results (see membership list below). The PSC project team met with members of the policy committee approximately every three months. The Technical committee ensured that sound methodological methods were used in the design and implementation of the survey. Meetings with members of the technical committee took place whenever required, but were often informal and ad hoc.

Ms Jocelyn Fish in (Chairperson) Federation of	Past National President, National Council of Women New Zealand, President, Waikato Branch, University Women
Ms Patricia Davis	Maori Women's Welfare League
Ms Ria Earp	Ministry of Women's Affairs
Ms June Haultain Federated	National Vice-President, Women's Division of Farmers
Ms Anne Hayes	Ministry of Health
Lady Jocelyn Keith Centre	Health Sector, Scholar in Residence, Stout Research Victoria University of Wellington
Professor Peggy Waikato Koopman-Boyden	Dean, School of Social Sciences, University of
Ms Emily Maea	Hamilton Pacific Island Community
Professor Ian Pool Waikato	Director, Population Studies Centre, University of
Dr Helen Roberts	New Zealand Family Planning Association
Dr Janet Sceats	Midland Regional Health Authority

**PROJECT  
MANAGEMENT**

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Ms Anne Todd Professional	National President, Federation of Business and Women
Professor Ian Pool (Chairperson)	Population Studies Centre – Demographer with wide experience on family formation surveys
Dr Dharmalingham techniques	Population Studies Centre – Specialist in survey
Ms Lisa Davies	Te Puni Kokiri – Specialist on women’s labour force participation, education and on Maori women
Ms Sharon Evans	Statistics New Zealand – Specialist on labour force surveys and survey data collection
Dr Sarah Hillcoat- Nalletamby	Population Studies Centre – Specialist on survey techniques, adolescent fertility, family policy
Professor Peggy Koopman-Boyden	University of Waikato – School of Social Sciences – specialist on New Zealand family structures and dynamics
Mr Ross Mackay	Social Policy Agency – Specialist in reviewing, funding and managing social research, particularly with a focus on social policy
Ms Stephanie Milroy	School of Law, University of Waikato – expert ethicist
Dr Janet Sceats	Midland Regional Health Authority – Specialist in surveys on women’s reproductive health
Ms Pania Te Whaiti	Ministry of Women’s Affairs – Te Puni Kokiri; specialist on issues relating to Maori

**TECHNICAL  
COMMITTEE**