

An Examination of the Links between Parental Educational Qualifications, Family Structure and Family Wellbeing, 1981–2006

Family and Whānau Wellbeing Project

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Contents

Executive Summary.....	5
1 Introduction.....	6
1.1 Purpose of the report.....	6
1.2 The Family and Whānau Wellbeing Project (FWWP).....	6
1.3 Background.....	6
1.4 Report structure.....	7
1.5 Methods.....	7
1.5.1 Data source and data access.....	7
1.5.2 Using census data to measure wellbeing.....	7
1.6 Wellbeing indicators.....	9
1.7 Classifying educational qualifications.....	9
1.8 Family/household classifications.....	10
2 The impact of education on family wellbeing.....	13
2.1 Median equivalised income.....	13
2.1.1 Couples without children.....	14
2.1.2 Couples with dependent children.....	15
2.1.3 Couples with only independent children.....	16
2.1.4 One-parent families with dependent children.....	17
2.1.5 One-parent families with only independent children.....	18
2.1.6 Overall commentary.....	18
2.2 Low income.....	20
2.2.1 Couples without children.....	21
2.2.2 Couples with dependent children.....	22
2.2.3 Couples with only independent children.....	23
2.2.4 One-parent families with dependent children.....	24
2.2.5 One-parent families with only independent children.....	25
2.2.6 Overall commentary.....	25
2.3 Families without paid employment.....	26
2.3.1 Couples without children.....	27
2.3.2 Couples with dependent children.....	28
2.3.3 Couples with only independent children.....	29
2.3.4 One-parent families with dependent children.....	30
2.3.5 One-parent families with only independent children.....	31
2.3.6 Overall commentary.....	31
2.4 Long hours worked.....	32
2.4.1 Couples without children.....	33
2.4.2 Couples with dependent children.....	34
2.4.3 Couples with only independent children.....	35
2.4.4 One-parent families with dependent children.....	36
2.4.5 One-parent families with only independent children.....	37
2.4.6 Overall commentary.....	37
2.5 Home ownership.....	38
2.5.1 Couples without children.....	39
2.5.2 Couples with dependent children.....	40
2.5.3 Couples with only independent children.....	41
2.5.4 One-parent families with dependent children.....	42
2.5.5 One-parent families with only independent children.....	43
2.5.6 Overall commentary.....	43
3 Discussion.....	44
3.1 Education and income.....	44
3.2 Education and employment.....	45
3.3 Education and housing tenure.....	45
3.4 Education and wellbeing in general.....	45
3.5 Strengths and limitations of the study.....	46
3.6 Future research.....	46
Appendices.....	47
References.....	54

List of tables

Table 1.1 Family wellbeing indicators used in this report.....	9
Table 1.2 Distribution of family/household classifications	11
Table 1.3 Family/household classifications used in the report.....	12
Table 2.1 Median equivalised income, by family/household type, 1981–2006	13
Table 2.2 Median equivalised income: Couples without children.....	14
Table 2.3 Median equivalised income: Couples with dependent children.....	15
Table 2.4 Median equivalised income: Couples with only independent children	16
Table 2.5 Median equivalised income: One-parent families with dependent children	17
Table 2.6 Median equivalised income: One-parent families with only independent children..	18
Table 2.7 Low income, by family/household type, 1981–2006	20
Table 2.8 Low income: Couples without children	21
Table 2.9 Low income: Couples with dependent children	22
Table 2.10 Low income: Couples with only independent children	23
Table 2.11 Low income: One-parent families with dependent children.....	24
Table 2.12 Low income: One-parent families with only independent children	25
Table 2.13 Families without paid employment, by family/household type, 1981–2006	26
Table 2.14 Families without paid employment: Couples without children.....	27
Table 2.15 Families without paid employment: Couples with dependent children.....	28
Table 2.16 Families without paid employment: Couples with only independent children	29
Table 2.17 Families without paid employment: One-parent families with dependent children	30
Table 2.18 Families without paid employment: One-parent families with only independent children	31
Table 2.19 Long hours worked, by family/household type, 1981–2006	32
Table 2.20 Long hours worked: Couples without children.....	33
Table 2.21 Long hours worked: Couples with dependent children	34
Table 2.22 Long hours worked: Couples with only independent children	35
Table 2.23 Long hours worked: One-parent families with dependent children	36
Table 2.24 Long hours worked: One-parent families with only independent children.....	37
Table 2.25 Lack of home ownership, by family/household type, 1981–2006.....	38
Table 2.26 Lack of home ownership: Couples without children	39
Table 2.27 Lack of home ownership: Couples with dependent children	40
Table 2.28 Lack of home ownership: Couples with only independent children	41
Table 2.29 Lack of home ownership: One-parent families with dependent children.....	42
Table 2.30 Lack of home ownership: One-parent families with only independent children	43
Appendix Table B.1 Family type categories	49
Appendix Table B.2 Comparable household composition categories.....	50
Appendix Table C.1 Retirement status classification, by family/household type, age and receipt of NZ Superannuation	52

Executive Summary

The relationship between a person's level of education and the level of income this commands has been well explored in the literature. Less well examined are the links between family structure, the educational attainment of the parents in the family and levels of family wellbeing. This study addresses this gap using a series of family wellbeing indicators derived from data available in the five-yearly census as part of the Family and Whānau Wellbeing Project.

The associations between parents' educational attainment and wellbeing (as measured by median equivalised income, the incidence of low income, unemployment, hours worked and level of home ownership) are described for different family types using information derived from census data for the period 1981–2006. The use of census data allows the impacts of parents' educational attainment to be assessed across time and within family types by each of the wellbeing indicators.

The results confirm the findings of other studies, which show that attainment of secondary and post-secondary educational qualifications commands a 'premium' in the labour market. This study indicates how this 'educational premium' is distributed differently over different family types, and suggests that this premium has increased over the period 1981–2006 for most measures of family wellbeing.

1 Introduction

1.1 Purpose of the report

The primary purpose of this report is to examine and describe the relationship between family structure and family wellbeing and the educational qualifications of parents in New Zealand families over the period 1981–2006. The links between educational attainment and personal income are well documented, as is the rising level of educational participation in New Zealand. Less well understood are the associations between the levels of parental educational attainment in a family and levels of family wellbeing for different family structures. This report aims to explore these links using data from the five-yearly Census of Population and Dwellings conducted by Statistics New Zealand.

The report contains an example of the type of analysis that can be conducted with the data available from this project, and it is hoped that its publication will serve to inspire further analyses of these data by others with specialist knowledge and more detailed primary information in the appropriate areas.

1.2 The Family and Whānau Wellbeing Project (FWWP)

FWWP is a five-year research programme supported by the Social Science funding pool of the Foundation for Research, Science and Technology (FRST). The principal goal of this programme is to develop ways to examine and monitor the social and economic determinants of family and whānau wellbeing and how these have changed over the 1981–2006 period.

1.3 Background

The 25-year period between 1981 and 2006 covered by this study saw extensive reforms of the education sector in New Zealand, along with – of course – other economic and social reforms. These educational reforms began with a series of reviews in the late 1980s, the outcomes of which served to shape the present structure of education. The reviews included reports on polytechnics, universities, non-formal education and educational administration (Abbott 2006).

With specific regard to universities, the Hawke Report (1988) lay the groundwork for many of the future policies, recommending that universities become more commercial and that universities, rather than government, should set student fee prices (Olssen 2002, 66). Among the recommendations from this series of reports were increased competition between institutions in order to improve efficiencies in education provision, the devolution of control over schools to local communities, and a general intent to expand the number of participants in tertiary education.

Arguably the most influential of the reforms, in terms of its impact on participation rates in tertiary education, was the substantial rise in student fees, beginning with the introduction of a \$1,250 flat fee in 1990, followed by a Student Loans scheme in 1992 to enhance students' ability to borrow money for course fees (McTaggart 2006, 84). The year after the flat fee was introduced the Government legislated to allow institutions to begin setting their own fees.

The fees students paid to attend tertiary educational institutions then rose markedly throughout the 1990s, and the New Zealand Union of Students' Associations (2007) has estimated that the increases were on average 13 percent per annum over this period. The higher fees have resulted in the level of student debt increasing considerably over the last 10 years of this study, with the total level of debt held in 2004 being an estimated \$5.96 billion

(Ministry of Education 2005, 9). According to the Ministry of Education, in June 2004 more than 418,000 people in New Zealand, or 13 percent of those aged 15 years or over, had a student loan debt. This compares with 7.6 percent in 1998 and 1.6 percent in 1993. The median debt in 2004 was just under \$10,000 (Ministry of Education 2005, 9).

Overall, in recent decades New Zealand's tertiary education system has changed from one in which the cost of education was low and where allowances were offered to students, to a competitive, market-based system in which universities themselves set fees (McLaughlin 2003, 6).

In addition to these reforms, there has been an emphasis by government on the need to up-skill the population in order to better compete in a changing world economy. As a consequence of the increased emphasis on raising the skill level of the population, the total number of formally enrolled students in tertiary education grew from around 175,000 in 1991 to approximately 368,000 in 2004 (Abbott 2006, 372). Along with rising participation has come a growth in the number of people holding educational qualifications. Newell and Perry note that "From 1981 to 2001, the proportion of New Zealand residents aged 15 years or over with no educational qualification halved from 55.2 to 27.6 percent while the proportion with a university degree tripled from 3.8 to 11.8 percent" (Newell and Perry 2006, 6).

1.4 Report structure

The report is structured as follows. The remainder of section 1 provides information on the data used and how they were accessed, before explaining the strengths and limitations of using census data. Next it provides detailed information on the classification of families and educational qualifications used in the analysis, and finally it supplies details on the family wellbeing indicators used in the report.

In section 2 the relationship between parental educational qualifications, family structure and family wellbeing are described and commented on for the period 1981–2006, for each wellbeing indicator.

Section 3 first discusses the broader literature examining the relationship between educational status and family wellbeing, with a particular focus on the New Zealand experience. It then discusses the results described in section 2 and relates them, where possible, to the wider literature examining the relationship between families' wellbeing and educational status.

1.5 Methods

1.5.1 Data source and data access

All data used in this report were derived from the New Zealand Censuses of Population and Dwellings conducted between 1981 and 2006 by Statistics New Zealand. The research team obtained access to confidentialised unit record data through Statistics New Zealand's secure Data Laboratory facility in Auckland. Personal identification information supplied on the original census forms, such as name and address, is not carried over to the computer records held by Statistics New Zealand, and these details are therefore not available to Data Laboratory users.

1.5.2 Using census data to measure wellbeing

The census contains a wealth of information on a wide range of demographic, social and economic issues covering the entire population – or at least those who completed the population census forms. The primary advantages of using census data to assess wellbeing are as follows.

- It allows for an assessment of continuity and change in societal patterns over a long period of time.
- Information obtained from the census covers (almost) all members of the population. It therefore allows us to examine the wellbeing of all New Zealanders, and can provide information on small population groupings in a way that sample surveys rarely can.
- The census collects information on all family members in the household, enabling us to conduct family-level analysis. Such an analysis acknowledges the fundamental interdependence between family members and enables us to see how the impact of the reforms since the mid-1980s has varied according to family type.
- Although the census collects no information on the subjective elements of wellbeing, many of the core outcomes (good jobs, adequate income, education and health) identified by New Zealanders as promoting wellbeing are based on objective living conditions, which are captured (with the limitations outlined below) in the census.

The limitations associated with using census data to measure changes in family wellbeing are linked to the limited range and depth of information collected, the frequency of collection of some data, and the way in which family types are defined and measured.

- The selection of indicators is constrained by the information available through census data. Family and household wellbeing may be influenced by other factors (e.g., the perceived quality of family/household relationships) for which no census information is available. This lack of suitable information also necessitates some indicators being indirect proxy measures of a particular attribute. For example, from the fuller list of indicators examined in Cotterell et al. (2008), the health indicator describes changes in the number of people receiving health-related benefits, rather than being an actual measure of the physical health of a family.
- A lack of data availability may constrain time-series analysis. Some census questions that may be relevant to family/household wellbeing are no longer asked (e.g., on housing insulation), while other census questions (e.g., on smoking) are included only on an irregular basis. This means that the monitoring of changes in some domains (e.g., health, not specifically examined in this report) is less frequent than ideal.
- A lack of in-depth information may place limits on interpreting change in some indicators. For example, because income data are collected in bands rather than in discrete amounts, indicator construction requires some estimation.
- The census definition of ‘family’ only incorporates those family members who live within the same household. Wellbeing measures constructed from census data may thus be poor indicators for families whose members do not all reside within the one household. In particular, this relates to parents who usually share custody of their children, and children who live across two households. The ability to monitor the wellbeing of those in extended family situations is also constrained by this household-based definition of family.

With the above issues kept in mind, an extensive process of data investigation preceded the construction of wellbeing indicators. Data collected in each census between 1981 and 2006 were checked for consistency and comparability over time. Once this process was complete, a range of indicators, whose purpose was to capture aspects of family and household wellbeing, was constructed.

1.6 Wellbeing indicators

With the caveats identified in the above paragraphs in mind, and following the recommendation of Milligan et al. (2006), wellbeing indicators were constructed at both the family and household levels. However, preliminary analyses suggested modifications to the original indicators outlined by Milligan et al. would improve their utility. Principally, several indicators formerly defined only at the household level (i.e., tenure, rental affordability and crowding) were redefined at the family level. In addition, further modifications were designed to make the set of indicators easier to interpret and more consistent. For example, where feasible, indicator definitions were modified to ensure that increases in particular indicators indicated a worsening of levels of wellbeing.

For the purposes of this analysis, a subset of what were considered analytically relevant indicators was selected. These indicators were: median equivalised income, low income, families without paid work, long hours worked and home ownership (see Table 1.1). The remaining indicators that were used in the previous FWWP results report but are not examined here include low rental affordability, household crowding, and receipt of health-related benefits; the education domain indicators are instead used in this report to break up the population (Cotterell et al. 2008). Appendix C provides detailed information on how the wellbeing indicators presented in this report were constructed.

Table 1.1 Family wellbeing indicators

Wellbeing domain	Indicator name	Definition
Income	Median equivalised income	Median real, gross, equivalised family/household income. Equivalised income is gross income adjusted for family composition using the Revised Jensen Scale (Jensen 1988) and expressed in 1999 dollars using the March quarter Consumer Price Index (base 1999) for the relevant year (Statistics New Zealand 2005)
	Low income	The proportion of families/households whose median real, gross, equivalised income is less than 60 percent of the median, equivalised, gross family/household income
Work	Families without paid work	The proportion of families/households with no adult engaged in formal paid employment
	Long hours worked	The proportion of families/households where at least one adult works more than 48 hours per week
Housing	Home ownership	The proportion of families/households that do not live in owner-occupied dwellings

1.7 Classifying educational qualifications

This report presents wellbeing indicators at the family level and relates these to educational qualifications. As such, a method had to be adopted for attributing education – very much a personal trait – to families. Education information was collected to varying degrees of detail in the six censuses from 1981 to 2006: in each, secondary school and post-secondary qualifications were asked about separately; overseas qualifications were recorded separately from 1991 onwards; trade certificates and vocational qualifications were coded variously, and only from 1986 onwards; the New Zealand Certificate of Educational Achievement (NCEA)

levels were included in the 2001 and 2006 secondary qualification categories, alongside the 'old school' assessments, and so on.

For the purposes of these analyses, to provide the best compatibility across time (and to make them less overwhelming) it was decided to examine three levels of qualification: post-secondary qualification, secondary school qualification and no educational qualification. This three-way categorisation is not the only schema possible and different categorisations of qualifications could be used for future research. For example, a useful categorisation would include a degree/non-degree post-secondary qualification breakdown, in addition to the no educational and secondary school qualification categories.

To relate these to families, we used the education levels of the parent(s) to give: at least one parent with a post-secondary qualification; at least one parent with a secondary school qualification (no parent with post-secondary); and no parent with any educational qualification. This was based on the assumption that the income, educational and employment characteristics of parents were likely to have the most influence on the level of family wellbeing.

1.8 Family/household classifications

A family consists of a nucleus of parent(s) and child(ren) who reside in the same dwelling. Statistics New Zealand notes that:

'Family type' is a derived variable that classifies family nuclei according to the presence or absence of couples, parents and children. A 'family nucleus' is a couple, with or without child(ren), or one parent and their child(ren) usually resident in the same dwelling. The children do not have partners or children of their own living in the same household. People who usually live in a particular dwelling, and are members of a family nucleus in that dwelling, but who are absent on census night, are included, as long as they are reported as being absent by the reference person on the dwelling form.¹

In contrast, a household is defined as any group of families or individuals living in the same dwelling, regardless of their relationships to one another. Therefore, census families are wholly contained within households.

Family and household units in the census are further classified according to their structure, the dependency status of children, and retirement status. Child dependency is defined in terms of age and work and labour-force status. All children in family nuclei aged 14 years and under are classed as 'dependent children'. Those aged 15 to 17 years inclusive are also dependent unless they are in the full-time labour force. Children over the age of 17 years are classed as 'independent children' or 'adult children'.²

In this report the primary focus is the census family unit, and indicators were compiled for these units and cross-classified by family type and child dependency status. This classification consists of five categories: couple without children, couple with dependent children, couple with only independent children, one-parent family with dependent children, and one-parent family with only independent children.

Where particular family types were living in multiple-family households they were classified separately into their constituent family types. This action was taken because the focus in this report is on changes in the level of family wellbeing. Note, however, that multiple-family households – that is, two, three or more families living in a single dwelling – make up a very small proportion of the total household count.

¹ <http://www.stats.govt.nz/census/2006-census-information-about-data/information-by-variable/family-type.htm>, accessed 3 September 2008.

² See Statistics New Zealand, 2001b for definitions of 'child in a family nucleus' and 'labour force status'.

Table 1.2 shows the numbers of the various family/household types that existed in each of the censuses under study, and includes the numbers of those families and households in the categories that are not analysed in this report in the second half of the table.

Table 1.2 Distribution of family/household classifications

	1981	1986	1991	1996	2001	2006
Family and household types included in the analysis						
Couple without children (excl. retired)	140,907	167,520	193,515	248,181	276,765	318,987
Couple with dependent children	354,276	357,369	339,411	342,267	339,156	370,809
Couple with only independent children	57,555	76,392	77,430	77,616	66,984	75,090
One-parent family with dependent children	58,473	82,077	111,018	125,313	140,175	145,032
One-parent family with only independent children	25,350	34,989	38,856	40,764	41,886	47,421
Family and household types not included in the analysis						
Couple with children, dependency status unknown	36,801	8,046	6,963	6,681	1,650	1,995
One-parent family with children, dependency status unknown	4,887	1,680	1,872	2,178	855	1,182
Multi-person household	68,127	64,623	68,820	66,360	70,434	72,660
One-person household (excl. retired)	73,332	87,216	104,514	125,193	175,365	189,903
Retired couple or single person without children ³	191,793	218,316	244,989	237,789	232,410	245,382
Family/retirement type not classifiable	384	-	-	30,099	28,677	28,065
Total	1,011,885	1,098,228	1,187,388	1,302,441	1,374,357	1,496,526

³ See Appendix C.4 for a definition of retirement.

The family types used in this report are: couples without children; couples with dependent children; couples with only independent children; one-parent families with dependent children; and one-parent families with only independent children. These classifications and their associated definitions are detailed in Table 1.3 below.

Table 1.3 Family/household classifications used in the report

Family/household type	Family/household definition
Couple without children	Two people who reside within the same dwelling and who are in a relationship, whether married, de facto or partners, without any children
Couple with dependent children	Two people who reside within the same dwelling and who are in a relationship, whether married, de facto or partners, with one or more children who are under 15 years old or are 15–17 years of age but not in full-time employment
Couple with only independent children	Couple with one or more independent (or adult) children, who are aged 18 years or over or are 15–17 years of age and engaged in full-time employment, and no dependent children
One-parent family with dependent children	Single parent with one or more dependent children, who are under 15 years old or are 15–17 years of age but not in full-time employment
One-parent family with only independent children	Single parent with one or more independent (or adult) children, who are aged 18 years or over or are 15–17 years of age and engaged in full-time employment, and no dependent children

2 The impact of education on family wellbeing

This section provides a detailed breakdown of the results from the analysis of the relationship between family type, the educational attainment of parents in the family and the family wellbeing indicators, as described in the previous section. The analysis shows the effect of higher levels of educational qualifications being held by one or more parents in the family on a range of wellbeing indicators, including median equivalised income, the likelihood of a family having equivalised income below 60 percent of the median equivalised income, the likelihood of having no adult in paid employment, at least one adult working more than 48 hours per week, and not owning the home in which you live.

2.1 Median equivalised income

This indicator shows the median, real, gross equivalised family income. Equivalised income is gross income adjusted for family composition using the Revised Jensen Scale (Jensen 1988) and expressed in 1999 dollars using the March quarter Consumer Price Index (base 1999) for the relevant year (Statistics New Zealand 2005).

Table 2.1 shows the level of median, real, gross equivalised income for each family type without regard to the educational qualifications of one or more parents.

Table 2.1 Median equivalised income, by family/household type, 1981–2006

Family/ household type	1981	1986	1991	1996	2001	2006	Percentage change 1981–2006
Couple with dependent children	\$35,165	\$33,394	\$33,508	\$34,567	\$38,981	\$44,187	25.7
Couple with only independent children	\$56,649	\$52,965	\$49,362	\$51,448	\$54,657	\$60,225	6.3
One-parent family with dependent children	\$15,520	\$16,708	\$14,565	\$14,311	\$14,594	\$20,274	30.6
One-parent family with only independent children	\$41,145	\$39,195	\$33,537	\$36,253	\$35,182	\$38,208	-7.1
Couple without children	\$56,154	\$52,678	\$51,268	\$51,681	\$54,934	\$58,836	4.8

In each of the following tables in this section, the first three rows show the amount of median, real, gross equivalised income for each family type at each census, depending on the level of qualifications held by at least one of the parents. The last three rows show the difference in median equivalised income between family types where the parents hold different levels of educational attainment (as described in section 1.7).

2.1.1 Couples without children

Table 2.2 Median equivalised income: Couples without children

Educational qualifications	1981	1986	1991	1996	2001	2006	1981–2006 percentage change
No educational qualification	\$44,615	\$39,561	\$35,717	\$37,348	\$38,233	\$41,975	-5.9
Secondary school qualification	\$58,462	\$52,678	\$51,268	\$51,681	\$53,135	\$54,578	-6.6
Post-secondary qualification	\$67,692	\$59,387	\$56,977	\$58,947	\$66,927	\$64,815	-4.2
Difference between secondary qualification and no qualification	\$13,847	\$13,117	\$15,551	\$14,333	\$14,902	\$12,603	-9.0
Difference between post-secondary qualification and no qualification-	\$23,077	\$19,826	\$21,260	\$21,599	\$28,694	\$22,840	-1.0
Difference between post-secondary qualification and secondary qualification	\$9,230	\$6,709	\$5,709	\$7,266	\$13,792	\$10,237	10.9

Overall, the level of real median equivalised income fell for couples without children between 1981 and 2006, regardless of the level of educational qualification held by any of the parents. The smallest decline in median equivalised income was recorded by families where at least one parent held a post-secondary qualification.

Over the period 1981–2001 the ‘educational qualification premium’, in terms of additional income paid for holding either a secondary or post-secondary qualification rose, before declining slightly between 2001 and 2006. In 1981 the income gap between those families where one or more adults held a post-secondary qualification and those where there were no qualifications was \$23,077, but by 2006 this had fallen slightly to \$22,840, a decrease of one percent. The gap between those with no qualifications and those with secondary qualifications also decreased between 1981 and 2006.

2.1.2 Couples with dependent children

Table 2.3 Median equivalised income: Couples with dependent children

Educational qualifications	1981	1986	1991	1996	2001	2006	1981–2006 percentage change
No educational qualification	\$30,139	\$28,057	\$25,336	\$25,711	\$26,108	\$29,285	-2.8
Secondary school qualification	\$34,965	\$32,388	\$32,178	\$32,918	\$35,756	\$39,681	13.5
Post-secondary qualification	\$41,462	\$37,184	\$38,407	\$40,427	\$45,574	\$49,052	18.3
Difference between secondary qualification and no qualification.	\$4,826	\$4,331	\$6,842	\$7,207	\$9,648	\$10,396	115.4
Difference between post-secondary qualification and no qualification	\$11,323	\$9,127	\$13,071	\$14,716	\$19,466	\$19,767	74.6
Difference between post-secondary qualification and secondary qualification	\$6,497	\$4,796	\$6,229	\$7,509	\$9,818	\$9,371	44.2

Median equivalised income declined over the period 1981–2006 for couples with dependent children where no parent had any educational qualification. However, for those families with either a secondary or a post-secondary qualification, the level of median equivalised income rose over this period.

The gap between the level of median income for those with no educational qualifications and those with either a secondary school qualification or a post-secondary qualification increased over the 25 years between 1981 and 2006. In 1981 the gap between those with no educational qualifications and those with a secondary education qualification was \$4,826, and this had more than doubled to \$10,396 by 2006, a rise of around 115 percent. The gap between those with no educational qualifications and those with post-secondary qualifications also increased, by around 75 percent, over this period, from \$11,323 to \$19,767.

2.1.3 Couples with only independent children

Table 2.4 Median equivalised income: Couples with only independent children

Educational qualifications	1981	1986	1991	1996	2001	2006	1981–2006 percentage change
No educational qualifications	\$52,448	\$48,948	\$42,314	\$42,877	\$43,372	\$44,929	-14.3
Secondary school qualification	\$60,823	\$54,105	\$50,876	\$54,127	\$56,964	\$61,298	0.8
Post-secondary qualification	\$66,786	\$59,115	\$54,929	\$59,621	\$65,270	\$68,026	1.9
Difference between secondary qualification and no qualification	\$8,375	\$5,157	\$8,562	\$11,250	\$13,592	\$16,369	95.4
Difference between post-secondary qualification and no qualification	\$14,338	\$10,167	\$12,615	\$16,744	\$21,898	\$23,097	61.1
Difference between post-secondary qualification and secondary qualification	\$5,963	\$5,010	\$4,053	\$5,494	\$8,306	\$6,728	12.8

For couples with only independent children where no parent held any educational qualifications, the overall level of median equivalised income fell over the period 1981–2006. However, for families where at least one parent held a secondary school or post-secondary qualification, the level of median equivalised income rose very slightly over the same period.

Over the period 1981 to 2006 the income gap between those with no educational qualifications and those with any form of qualification widened. The difference in median income level between those with a secondary school qualification and those with no qualifications was \$8,375 in 1981 and widened to \$16,369 by 2006, a gain of around 95 percent. The gap between those with a post-secondary qualification and those with no secondary qualification was \$14,438 in 1981, and this increased to \$23,097 in 2006.

2.1.4 One-parent families with dependent children

Table 2.5 Median equivalised income: One-parent families with dependent children

Educational qualifications	1981	1986	1991	1996	2001	2006	1981–2006 percentage change
No educational qualifications	\$14,370	\$16,708	\$14,565	\$14,311	\$13,309	\$15,950	11.0
Secondary school qualification	\$16,648	\$17,351	\$14,565	\$14,311	\$17,479	\$20,274	21.8
Post-secondary qualification	\$24,291	\$21,737	\$19,973	\$19,740	\$18,943	\$23,112	-4.8
Difference between secondary qualification and no qualification	\$2,278	\$643	\$0	\$0	\$4,170	\$4324	89.8
Difference between post-secondary qualification and no qualification	\$9,921	\$5,029	\$5,408	\$5,429	\$5,634	\$7,162	-27.8
Difference between post-secondary qualification and secondary qualification	\$7,643	\$4,386	\$5,408	\$5,429	\$1,464	\$2,838	-62.9

Median equivalised income fell for one of the three categories of one-parent families with dependent children between 1981 and 2006: those where the parent held a post-secondary qualification. This was an unexpected result, which was not found for any of the other family types. Real, median, gross equivalised income rose for one-parent families where the parent had either no educational qualifications or only a secondary school qualification, between 1981 and 2006.

The income gap between those with no qualifications and those with a secondary qualification widened over the period, from \$2,278 in 1981 to \$4,324 in 2006. However, because median income for those with post-secondary qualifications declined over the period, the gap between those with no qualifications and those with post-secondary qualifications narrowed, from \$9,921 in 1981 to \$7,162 in 2006. This narrowing of the gap was not a positive outcome, however, and as noted above reflected a decline in income for single parents with post-secondary qualifications.

2.1.5 One-parent families with only independent children

Table 2.6 Median equivalised income: One-parent families with only independent children

Educational qualifications	1981	1986	1991	1996	2001	2006	1981–2006 percentage change
No educational qualifications	\$40,769	\$39,031	\$32,774	\$32,127	\$33,274	\$33,601	-17.6
Secondary school qualification	\$46,923	\$43,524	\$36,942	\$37,458	\$38,679	\$42,036	-10.4
Post-secondary qualification	\$52,475	\$48,545	\$42,314	\$44,614	\$45,549	\$46,151	-12.0
Difference between secondary qualification and no qualification	\$6,154	\$4,493	\$4,168	\$5,331	\$5,405	\$8,435	37.1
Difference between post-secondary qualification and no qualification	\$11,706	\$9,514	\$9,540	\$12,487	\$12,275	\$12,550	7.2
Difference between post-secondary qualification and secondary qualification	\$5,552	\$5,021	\$5,372	\$7,156	\$6,870	\$4,115	-25.9

The overall level of median equivalised income for one-parent families with only independent children fell over the period 1981–2006, regardless of the level of qualification held by the parent. The decline was least for those families where the parent held a secondary qualification and highest for those where the parent held no educational qualification.

The income gap between one-parent families with only independent children where the parent held a secondary or post secondary qualification and those where they held no qualifications widened over the 25 years between 1981 and 2006.

2.1.6 Overall commentary

Over the period 1981–2006 those families where no parent had any educational qualifications were more likely to experience a decline in median equivalised income than those where at least one parent had either a secondary or a post-secondary qualification. In the cases where at least one parent held a secondary school qualification, three of the five family types experienced a rise in median equivalised income. For the case where a parent held a post-secondary qualification, median equivalised income fell for three of the five family types.

As would be expected, for almost every family type at every data point over the 25 years between 1981 and 2006, there was a positive income gap between those families with at least

one parent with either a secondary school qualification or a post-secondary qualification and those families where no parent had any educational qualification. The only exceptions to this were for one-parent families with dependent children in 1991 and 1996, where the levels of income were the same for those where the parent held a secondary school qualification and those where they had no qualification. However, these two cases are likely due to the way the median income data were constructed (it is harder to find differences in median equivalised income for one-parent families due to the equivalisation process (see Appendix D) and the fact that they have only one income), although it is possible that given the relatively high rates of unemployment at those times, having a secondary qualification made little difference to employability and hence income levels.

For most family types the 'premium', in terms of additional income, attached to having either secondary or post-secondary qualifications grew over the period 1981–2006. For example, for couples with dependent children, the difference in median equivalised income between those with no educational qualifications and those with a post-secondary qualification rose from \$11,323 in 1981 to \$19,767 in 2006, an increase of nearly 75 percent. The only exceptions to this were for both categories of one-parent families, where the 'premium' attached to obtaining educational qualifications declined slightly.

2.2 Low income

The low income indicator shows the proportion of all families/households whose equivalised gross income is less than 60 percent of the real, median, gross equivalised family/household income. Table 2.7 shows the incidence of low income across family types prior to taking into account the levels of parental education.

Table 2.7 Low income, by family/household type, 1981–2006

Family/household type	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
Couple with dependent children	19.2	17.5	14.7	16.7	15.7	16.0	–16.7
Couple with only independent children	7.5	3.9	3.2	3.6	6.8	7.5	0.0
One-parent family with dependent children	68.0	61.8	69.2	67.4	68.5	65.4	–3.8
One-parent family with only independent children	20.1	10.2	11.8	14.6	21.4	21.3	6.0
Couple without children	10.3	7.8	8.0	9.7	10.9	11.0	6.8

In each table in this section, the top three rows show the proportion of each family type having an income level below 60 percent of the median for that family type, depending on the level of educational qualification held by at least one of the parents. The bottom three rows show the difference in the proportions of each family type likely to be below the median for different levels of parental educational qualification.

2.2.1 Couples without children

Table 2.8 Low income: Couples without children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	14.7	13.1	15.1	17.6	19.8	20.5	39.5
Secondary school qualification	8.8	7.0	7.6	8.8	9.9	10.9	23.9
Post-secondary qualification	5.9	4.9	5.1	5.9	6.3	7.1	20.3
Difference between secondary qualification and no qualification	5.9	6.1	7.5	8.8	9.9	9.6	62.7
Difference between post-secondary qualification and no qualification	8.8	8.2	10.0	11.7	13.5	13.4	52.3
Difference between post-secondary qualification and secondary qualification	2.9	2.1	2.5	2.9	3.6	3.8	31.0

Over the period 1981–2006 there was an overall rise in the proportion of couples without children whose income was below 60 percent of the median equivalised family income, regardless of the level of educational qualifications held. Couples without children where at least one person had no educational qualification experienced the biggest increase in the likelihood of being on low income.

As might be expected, the likelihood of being on low income was lower for those couples without children with at least one person holding a post-secondary qualification than for both those with a secondary qualification and those with no qualification. Furthermore, over the 25 years from 1981 to 2006, the likelihood of being below 60 percent of the median income figure rose at a higher rate for those with no educational qualifications than for those with either secondary or post-secondary qualifications.

2.2.2 Couples with dependent children

Table 2.9 Low income: Couples with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	26.7	26.7	28.2	31.4	35.1	37.4	40.1
Secondary school qualification	18.0	18.6	16.3	16.4	15.4	17.1	-5.0
Post-secondary qualification	11.1	11.8	9.3	10.5	9.5	10.9	-1.8
Difference between secondary qualification and no qualification	8.7	8.1	11.9	15.0	19.7	20.3	133.3
Difference between post-secondary qualification and no qualification	15.6	14.9	18.9	20.9	25.6	26.5	69.9
Difference between post-secondary qualification and secondary qualification	8.9	6.8	7.0	5.9	5.9	6.2	-10.1

For two of the three ‘couples with dependent children’ categories in this analysis, the likelihood of having a median income below 60 percent of the median level declined slightly between 1981 and 2006. As might be expected, couples with dependent children with no qualifications were the only subcategory for whom the proportion in the low income group increased.

The positive impacts of having a parent or parents with secondary or post-secondary qualifications on the likelihood of being below 60 percent of median equivalised income level increased considerably over the period between 1981 and 2006.

2.2.3 Couples with only independent children

Table 2.10 Low income: Couples with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	8.8	4.6	4.7	4.8	10.2	13.2	50.0
Secondary school qualification	5.5	3.8	3.0	3.2	3.9	4.3	-21.8
Post-secondary qualification	3.3	2.4	2.0	2.1	3.4	4.2	27.3
Difference between secondary qualification and no qualification	3.3	0.8	1.7	1.6	6.3	8.9	169.7
Difference between post-secondary qualification and no qualification	5.5	2.2	2.7	2.7	6.8	9.0	63.6
Difference between post-secondary qualification and secondary qualification	2.2	1.4	1.0	1.1	0.5	0.1	-95.4

Couples with only independent children with no parental educational qualifications had the highest likelihood of having less than 60 percent of the median equivalised family/household income, and their likelihood rose over the period 1981–2006.

2.2.4 One-parent families with dependent children

Table 2.11 Low income: One-parent families with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	73.1	69.1	77.9	76.5	81.1	79	8.1
Secondary school qualification	67.0	58.8	68.3	65.2	67.0	66.1	-1.3
Post-secondary qualification	45.1	41.8	48.1	47.7	53.6	53.3	18.2
Difference between secondary qualification and no qualification	6.1	10.3	9.6	11.3	14.1	12.9	111.5
Difference between post-secondary qualification and no qualification	28.0	27.3	29.8	28.8	27.5	25.7	-8.2
Difference between post-secondary qualification and secondary qualification	21.9	17.0	20.2	17.5	13.4	12.8	-41.6

As might be expected, the likelihood of having an income below 60 percent of the median was higher for those one-parent families with dependent children where the parent had no qualifications than for those with either a secondary or post-secondary qualification. This holds for each census time point over the 25 years between 1981 and 2006. For those where the parent either had no qualification or held a post-secondary qualification, the likelihood of having low income increased over the period, while for those with a secondary qualification the rate remained unchanged across 1981 and 2006, although it did vary between these time points.

2.2.5 One-parent families with only independent children

Table 2.12 Low income: One-parent families with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	20.9	10.4	13.7	17.1	24.7	26.4	26.3
Secondary school qualification	14.5	8.8	10.4	10.7	15.6	16.0	10.3
Post-secondary qualification	10.4	6.3	8.3	9.2	13.1	14.4	38.5
Difference between secondary qualification and no qualification	6.4	1.6	3.3	6.4	9.1	10.4	62.5
Difference between post-secondary qualification and no qualification	10.5	4.1	5.4	7.9	11.6	12.0	14.3
Difference between post-secondary qualification and secondary qualification	4.1	2.5	2.1	1.5	2.5	1.6	–61.0

Overall, the proportion of one-parent families with only independent children experiencing low income increased between 1981 and 2006, but in comparison to one-parent families with dependent children (see Table 2.11 above), the proportions on low income were much smaller. Those one-parent families with only independent children where the parent had either a secondary or post-secondary qualification were less likely than their counterparts with no qualifications to be in the low income grouping at each point between 1981 and 2006.

2.2.6 Overall commentary

For all family types and for all time periods, the higher the level of educational attainment, the less likely it was that the family had median equivalised income below 60 percent of the median equivalised family income. For all family types in which no parent had an educational qualification, the proportion experiencing low income rose between 1981 and 2006.

The ‘education premium’ attached to having at least one parent with higher educational qualifications grew for most family types over the period 1981–2006. For example, for couples with dependent children where no parent had any educational qualifications, 26.7 percent were experiencing low income in 1981, and this rose to 37.4 percent in 2006. For the same family type, where at least one parent had a post-secondary qualification, the low-income proportion was just over 11 percent in 1981, and declined slightly to 10.9 percent in 2006. The gap between these two groups widened from 15.6 percentage points in 1981 to 26.5 percentage points in 2001. This pattern was experienced by almost all family types over the period 1981–2006.

2.3 Families without paid employment

This employment indicator shows the proportion of all families where no parent is engaged in paid employment. Table 2.13 shows the results for this indicator, without taking into account the level of parental education.

Table 2.13 Families without paid employment, by family/household type, 1981–2006

Family/household type	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
Couple with dependent children	4.4	3.4	9.8	8.6	6.9	5.0	13.6
Couple with only independent children	18.7	17.8	20.8	18.0	17.0	14.8	-20.9
One-parent family with dependent children	58.7	62.6	69.1	61.3	50.6	45.9	-21.8
One-parent family with only independent children	64.8	61.0	62.3	56.9	52.4	48.1	-25.8
Couple without children	6.9	6.7	9.5	9.4	9.5	7.7	11.6

In this section the top three rows in each table show the proportions of families with no parent in paid employment for each level of educational qualifications held by at least one of the parents. The bottom three rows show the differences in the proportions with no parent in paid employment between each pair of levels of educational attainment for at least one of the parents.

2.3.1 Couples without children

Table 2.14 Families without paid employment: Couples without children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	11.5	10.8	17.6	18.0	17.1	14.8	28.7
Secondary school qualification	4.9	5.9	8.0	6.9	7.2	6.4	30.6
Post-secondary qualification	3.8	4.4	6.1	5.7	5.5	5.0	31.6
Difference between secondary qualification and no qualification	6.6	4.9	9.6	11.1	9.9	8.4	27.3
Difference between post-secondary qualification and no qualification	7.7	6.4	11.5	12.3	11.6	9.8	27.3
Difference between post-secondary qualification and secondary qualification	1.1	1.5	1.9	1.2	1.7	1.4	27.3

Overall, the likelihood of couples without children having no adult in paid employment increased over the period 1981–2001, before decreasing between 2001 and 2006. For each census data point over the 25-year period, couples without children with no qualifications were more likely than those with secondary qualifications to have no person in paid employment. In turn, those couples without children who only had a secondary qualification were more likely at each census point to have no person in paid employment than those couples where at least one person had a post-secondary qualification. Couples without children and without educational qualifications were more than twice as likely at each census point to have no adult in paid employment as those with a post-secondary qualification.

Between 1981 and 2006 the premium rose with regard to employment status for those couples without children where at least one person held either a secondary or post-secondary qualification.

2.3.2 Couples with dependent children

Table 2.15 Families without paid employment: Couples with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	7.8	6.9	21.8	20.0	19.1	16.3	109.0
Secondary school qualification	3.9	2.9	9.5	6.2	5.0	4.0	2.6
Post-secondary qualification	1.9	1.5	4.9	4.2	3.2	2.6	36.8
Difference between secondary qualification and no qualification	3.9	4.0	12.3	13.8	14.1	12.3	215.4
Difference between post-secondary qualification and no qualification	5.9	5.4	16.9	15.8	15.9	13.7	132.2
Difference between post-secondary qualification and secondary qualification	2.0	1.4	4.6	2.0	1.8	1.4	-30.0

Those couples with dependent children where no parent had any educational qualifications were much more likely to also have no parent in paid employment than those with secondary or post-secondary qualifications, for each of the census periods between 1981 and 2006. In addition, for those with no educational qualification, the proportion where no parent was in paid employment more than doubled between 1981 and 2006.

The premium attached to having educational qualifications increased with regard to reducing the likelihood of not having paid work, for those couples with dependent children where at least one parent held either a secondary or post-secondary qualification, between 1981 and 2006.

2.3.3 Couples with only independent children

Table 2.16 Families without paid employment: Couples with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	24.1	21.6	26.3	27.6	26.9	27.8	15.4
Secondary school qualification	13.8	18.0	17.4	12.3	10.5	9.1	-34.1
Post-secondary qualification	10.3	11.5	13.2	10.3	8.1	8.2	-20.4
Difference between secondary qualification and no qualification	10.3	3.6	8.9	15.3	16.4	18.7	81.6
Difference between post-secondary qualification and no qualification	13.8	10.1	13.1	17.3	18.8	19.6	42.0
Difference between post-secondary qualification and secondary qualification	3.5	6.5	4.2	2.0	2.4	0.9	-74.3

For couples with only independent children with no educational qualification, the chances of having no parent in paid employment rose between 1981 and 2006, whereas it decreased considerably for the other two educational categories over the same period.

The premium attached to holding an educational qualification increased over the period, in terms of reducing the likelihood of being without paid employment, for those couples with only independent children where at least one parent had either a secondary or post-secondary qualification.

2.3.4 One-parent families with dependent children

Table 2.17 Families without paid employment: One-parent families with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	66.6	72.9	79.4	71.5	64.5	61.5	–7.7
Secondary school qualification	53.9	58.8	65.6	56.9	45.9	42.1	–21.9
Post-secondary qualification	31.7	35.6	42.7	37.7	34.6	32.7	3.2
Difference between secondary qualification and no qualification	12.7	14.1	13.8	14.6	18.6	19.4	52.8
Difference between post-secondary qualification and no qualification	34.9	37.3	36.7	33.8	29.9	28.8	–17.5
Difference between post-secondary qualification and secondary qualification	22.2	23.2	22.9	19.2	11.3	9.4	–57.7

The likelihood of the parent in a one-parent family with dependent children not being in paid employment was greatest, as might be expected, where this parent had no educational qualifications. For single parents in this category with a secondary school qualification, the likelihood of being without paid employment rose between 1981 and 1991 before declining between 1991 and 2006. The same trend was observed where the parent held a post-secondary qualification, but the proportion without paid work was still slightly higher in 2006 than in 1981 for them.

2.3.5 One-parent families with only independent children

Table 2.18 Families without paid employment: One-parent families with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	70.4	67.9	69.0	67.0	63.1	62.2	-11.7
Secondary school qualification	46.8	51.1	50.6	40.2	37.1	35.3	-24.6
Post-secondary qualification	36.9	36.1	38.1	31.0	27.4	28.2	-23.6
Difference between secondary qualification and no qualification	23.6	16.8	18.4	26.8	26.0	26.9	14.0
Difference between post-secondary qualification and no qualification	33.5	31.8	30.9	36.0	35.7	34.0	1.5
Difference between post-secondary qualification and secondary qualification	9.9	15.0	12.5	9.2	9.7	7.1	-28.3

Between 1981 and 2006, the likelihood of single parents with only independent children not being in paid employment decreased for each level of educational qualification held by the parent, with the largest decrease being experienced by those with a secondary educational qualification (13.5 percent). Over this 25-year period, the gap grew between the likelihood of single parents in this category with no educational qualifications and the likelihood of those with secondary or post-secondary qualifications.

2.3.6 Overall commentary

Families where at least one parent had a post-secondary qualification were less likely to have no parent in paid employment than those with secondary school qualifications for all family types in each time period. In turn, this latter group was less likely to have no parent in paid employment than families with no educational qualifications.

There are differences in the extent of lack of paid employment between one-parent families with dependent children and one-parent families with only independent children, which is probably due to the fact that adults in the former family type are more likely to be occupied with child raising.

2.4 Long hours worked

The long hours worked indicator shows the proportion of all families/households where at least one parent works more than 48 hours per week.

Table 2.19 Long hours worked, by family/household type, 1981–2006

Family/household type	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
Couple with dependent children	34.2	40.7	39.6	45.0	44.3	41.6	21.6
Couple with only independent children	24.6	29.8	31.1	37.9	38.7	37.6	52.8
One-parent family with dependent children	4.6	5.3	5.1	5.9	7.1	7.5	63.0
One-parent family with only independent children	4.9	6.5	7.3	9.1	10.0	10.5	114.3
Couple without children	24.3	32.6	33.9	39.8	39.7	37.8	55.6

In this section the first three rows in each table indicate the proportions for each family type, according to the level of parental qualification, where at least one parent works more than 48 hours per week. The remaining three rows show the impact of the level of parental educational qualification on the likelihood of having at least one parent working long hours, as well as the difference between holding secondary and post-secondary qualifications.

2.4.1 Couples without children

Table 2.20 Long hours worked: Couples without children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	22.5	28.4	28.2	31.8	32.2	32.2	43.1
Secondary school qualification	25.1	33.0	34.2	40.1	40.6	39.0	55.4
Post-secondary qualification	25.7	34.6	37.1	44.4	44.2	40.3	56.8
Difference between secondary qualification and no qualification	2.6	4.6	6.0	8.3	8.4	6.8	161.5
Difference between post-secondary qualification and no qualification	3.2	6.2	8.9	12.6	12.0	8.1	153.1
Difference between post-secondary qualification and secondary qualification	0.6	1.6	2.9	4.3	3.6	1.3	116.7

Whatever the level of educational qualification, all categories of couples without children experienced an increase in the likelihood of having one person working more than 48 hours per week over the period 1981–2001, followed by small decreases for two of the three educational categories between 2001 and 2006. Despite these decreases, and the fact that the proportions for couples without children and without educational qualifications remained unchanged between 2001 and 2006, the proportions working long hours in 2006 for every category were considerably higher than those in 1981. The biggest growth was experienced by those with a post-secondary qualification, followed by those with secondary qualifications.

2.4.2 Couples with dependent children

Table 2.21 Long hours worked: Couples with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	31.4	35.6	29.3	31.7	32.0	32.9	4.8
Secondary school qualification	36.8	41.6	40.0	46.0	45.9	43.8	19.0
Post-secondary qualification	35.6	42.7	44.0	50.7	48.8	44.1	23.9
Difference between secondary qualification and no qualification	5.4	6.0	10.7	14.3	13.9	10.9	101.9
Difference between post-secondary qualification and no qualification	4.2	7.1	14.7	19.0	16.8	7.0	166.7
Difference between post-secondary qualification and secondary qualification	1.2	1.1	4.0	4.7	2.9	0.3	-125.0

Between 1981 and 2001, all categories of couples with dependent children, regardless of the level of educational qualification, experienced a growth in the proportion with at least one parent working more than 48 hours per week. The biggest increase was experienced by those with at least one parent holding a post-secondary qualification. However, between 2001 and 2006, couples with dependent children where one of the parents held a secondary or a post-secondary qualification experienced a slight decline in the proportion working long hours. Still, despite this decline, the proportions working long hours were considerably higher for all categories in 2006 than they had been in 1981, as was the case for couples without children.

2.4.3 Couples with only independent children

Table 2.22 Long hours worked: Couples with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	23.3	28.8	28.0	29.3	29.8	27.6	18.4
Secondary school qualification	27.0	30.1	34.8	42.5	44.3	42.7	58.2
Post-secondary qualification	26.3	31.5	35.1	45.1	47.2	43.2	64.3
Difference between secondary qualification and no qualification	3.7	1.3	6.8	13.2	14.5	15.1	308.1
Difference between post-secondary qualification and no qualification	3.0	2.7	7.1	15.8	17.4	15.6	420.0
Difference between post-secondary qualification and secondary qualification	0.7	1.4	0.3	2.6	2.9	0.5	-171.4

For any level of educational qualification held, the likelihood of having at least one parent working long hours rose for couples with only independent children over the period 1981–2001, before declining for all three educational categories between 2001 and 2006. Despite the decreases between 2001 and 2006, the overall levels were much higher in 2006 than in 1981, especially where at least one parent held a secondary or post-secondary qualification.

2.4.4 One-parent families with dependent children

Table 2.23 Long hours worked: One-parent families with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	3.8	3.4	3.0	3.4	4.3	4.9	29.0
Secondary school qualification	4.5	5.1	4.8	5.2	6.7	6.5	44.4
Post-secondary qualification	8.2	11.4	12.1	13.8	12.2	11.1	35.4
Difference between secondary qualification and no qualification	0.7	1.7	1.8	1.8	2.4	1.6	128.6
Difference between post-secondary qualification and no qualification	4.4	8.0	9.1	10.4	7.9	6.2	41.0
Difference between post-secondary qualification and secondary qualification	3.7	6.3	7.3	8.6	5.5	4.6	24.3

For each level of educational qualifications held for this family type, there was a rise in the proportion with the parent working more than 48 hours per week over the period. However, given that these are single parents with dependent children, the increases are marginal, and are very low in comparison with the experiences of other family and household types.

2.4.5 One-parent families with only independent children

Table 2.24 Long hours worked: One-parent families with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	4.1	4.9	5.4	5.9	6.6	6.6	61.0
Secondary school qualification	6.9	7.8	8.8	11.7	13.1	12.0	73.9
Post-secondary qualification	9.8	13.1	15.3	19.5	19.6	17.8	81.6
Difference between secondary qualification and no qualification	2.8	2.9	3.4	5.8	6.5	5.4	92.9
Difference between post-secondary qualification and no qualification	5.7	8.2	9.9	13.6	13.0	11.2	96.5
Difference between post-secondary qualification and secondary qualification	2.9	5.3	6.5	7.8	6.5	5.8	100.0

As with their counterparts with dependent children, one-parent families with only independent children, whatever the level of educational qualification held by the parent, saw a growth in the proportion working long hours over the period 1981–2006. The biggest rises, as with each of the family types in this section, occurred for those with a post-secondary qualification.

At the starting point in 1981, one-parent families with dependent children and one-parent families with only independent children had similar proportions with the parent working more than 48 hours per week for each level of educational qualification. However, by 2006 the experiences of these groups had diverged considerably, and one-parent families with only independent children had experienced a much bigger increase, at all levels of educational qualification, in the proportion working longer hours.

2.4.6 Overall commentary

All of the family types in this section of the analysis experienced a rise in the proportion working long hours over the period 1981 to 2006, irrespective of their level of parental educational qualification. In each case except for one-parent families with dependent children, those families with at least one parent with a post-secondary qualification experienced the greatest increase in the likelihood of working more than 48 hours per week over the period. The group experiencing the next biggest rise were those families where one or more parents had a secondary school qualification.

2.5 Home ownership

This indicator shows the proportion of families/households that do not live in owner-occupied dwellings. An increase in the figure indicates that fewer families are living in their own homes.

Table 2.25 Lack of home ownership, by family/household type, 1981–2006

Family/household type	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
Couple with dependent children	23.7	20.7	19.0	23.7	26.5	32.2	35.9
Couple with only independent children	10.7	8.8	7.2	10.2	14.0	17.5	63.6
One-parent family with dependent children	47.1	45.8	46.4	54.6	57.6	64.0	35.9
One-parent family with only independent children	22.1	22.1	22.9	24.9	29.3	36.8	66.5
Couple without children	30.4	26.5	24.2	25.5	25.9	31.4	3.3

In this section of the report the top three rows in each table show the proportions not living in owner-occupied dwellings for each family type by each level of parental education. The bottom three rows show the difference that the level of parental educational attainment makes to the likelihood of a family living in an owner-occupied dwelling, and the difference between holding secondary and post-secondary qualifications.

2.5.1 Couples without children

Table 2.26 Lack of home ownership: Couples without children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	26.1	23.9	21.3	22.5	20.9	27.5	5.4
Secondary school qualification	39.4	32.3	30.5	30.2	26.7	31.3	-20.6
Post-secondary qualification	30.7	25.7	22.8	25.0	27.0	30.7	0.0
Difference between secondary qualification and no qualification	13.3	8.4	9.2	7.7	5.8	3.8	-71.4
Difference between post-secondary qualification and no qualification	4.6	1.8	1.5	2.5	6.1	3.2	-30.4
Difference between post-secondary qualification and secondary qualification	8.7	6.6	7.7	5.2	0.3	0.6	-93.1

The proportion of couples without children not living in owner-occupied dwellings increased slightly over the period for those who had no educational qualifications; declined for those where at least one person held a secondary qualification; and remained unchanged where a post-secondary qualification was held.

At each data point between 1981 and 2006, couples without children and without educational qualifications were more likely to be living in owner-occupied dwellings than those couples with higher levels of educational qualifications.

Over the 25 years between 1981 and 2006, the premium attached to having an educational qualification and its impact on the likelihood of living in an owner-occupied dwelling decreased.

2.5.2 Couples with dependent children

Table 2.27 Lack of home ownership: Couples with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	30.8	29.6	28.2	36.9	42.2	52.4	70.1
Secondary school qualification	24.6	22.1	20.9	24.2	25.3	33.6	36.6
Post-secondary qualification	16.6	15.4	14.1	16.9	20.2	25.1	51.2
Difference between secondary qualification and no qualification	6.2	7.5	7.3	12.7	16.9	18.8	203.2
Difference between post-secondary qualification and no qualification	14.2	14.2	14.1	20.0	22.0	27.3	92.2
Difference between post-secondary qualification and secondary qualification	8.0	6.7	6.8	7.3	5.1	8.5	6.3

For couples with dependent children, the proportion living in dwellings they did not own rose over the period under examination, regardless of the level of educational qualifications held by the parents. The biggest increase in the likelihood of not living in an owner-occupied dwelling occurred for those couples with dependent children who did not have any educational qualifications.

2.5.3 Couples with only independent children

Table 2.28 Lack of home ownership: Couples with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	13.1	11.7	11.3	14.3	16.8	24.9	90.1
Secondary school qualification	9.2	8.2	7.7	9.0	11.9	15.1	64.1
Post-secondary qualification	6.7	6.3	5.9	6.7	10.7	12.1	80.6
Difference between secondary qualification and no qualification	3.9	3.5	3.6	5.3	4.9	9.8	151.3
Difference between post-secondary qualification and no qualification	6.4	5.4	5.4	7.6	6.1	12.8	100.0
Difference between post-secondary qualification and secondary qualification	2.5	1.9	1.8	2.3	1.2	3.0	20.0

Between 1981 and 2006 rates of home ownership declined for each educational grouping within the couples with only independent children category. The biggest decline in home ownership, most of which occurred between 2001 and 2006, was for those couples with only independent children who had no educational qualifications, followed by those with a post-secondary qualification.

2.5.4 One-parent families with dependent children

Table 2.29 Lack of home ownership: One-parent families with dependent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	51.7	52.9	53.8	62.2	68.4	74.6	44.3
Secondary school qualification	44.8	41.2	42.3	50.4	53.5	61.1	36.4
Post-secondary qualification	31.3	30.4	31.5	38.3	45.6	54.6	74.4
Difference between secondary qualification and no qualification	6.9	11.7	11.5	11.8	14.9	13.5	95.6
Difference between post-secondary qualification and no qualification	20.4	22.5	22.3	23.9	22.8	20.0	-2.0
Difference between post-secondary qualification and secondary qualification	13.5	10.8	10.8	12.1	7.9	6.5	-51.9

One-parent families with dependent children, regardless of the level of educational qualification held by the parent, experienced a rise in the proportion living in dwellings they did not own between 1981 and 2006, with the biggest increase experienced by those with a post-secondary qualification.

Over the 25 years between 1981 and 2006 the premium attached to having an educational qualification decreased, with regard to its impact on the likelihood of living in an owner-occupied dwelling, for single parents with dependent children holding either a secondary or post-secondary qualification.

2.5.5 One-parent families with only independent children

Table 2.30 Lack of home ownership: One-parent families with only independent children

Educational qualifications	1981 (%)	1986 (%)	1991 (%)	1996 (%)	2001 (%)	2006 (%)	Percentage change 1981–2006
No educational qualifications	23.6	24.8	26.7	28.0	32.5	41.4	75.4
Secondary school qualification	18.3	18.8	20.2	19.9	24.4	31.9	74.3
Post-secondary qualification	14.9	15.1	16.4	17.6	22.4	29.7	99.3
Difference between secondary qualification and no qualification	5.3	6.0	6.5	8.1	8.1	9.5	79.2
Difference between post-secondary qualification and no qualification	8.7	9.7	10.3	10.4	10.1	11.7	34.5
Difference between post-secondary qualification and secondary qualification	3.4	3.7	3.8	2.3	2.0	2.2	-35.3

Levels of home ownership declined between 1981 and 2006 for one-parent families with only independent children, whatever the level of educational qualification held by the parent. Those with post-secondary educational qualifications experienced the biggest decline. On average, one-parent families with dependent children (see Table 2.29 above) were twice as likely as those with only independent children to be living in a dwelling they did not own.

2.5.6 Overall commentary

With the exception of couples without children where at least one of the adults held a secondary qualification, all families, regardless of the level of education of one or more of the parents present, experienced an increase in the likelihood of not living in an owner-occupied dwelling over the period 1981–2006. Approximately 60 percent of the categories experienced a rise in the proportion not owning the dwelling they lived in of over 50 percent, with the largest growth generally occurring between 2001 and 2006.

The probable link between family wellbeing and the educational attainment of one of more of the parents is that higher educational attainment typically results in higher incomes, which make it easier to purchase housing. Of course, in recent years for many students the attainment of higher levels of educational qualification has come at the cost of higher levels of student debt, which may delay the purchase of housing until this debt is repaid.

3 Discussion

This section examines the results outlined in section 2 above, and relates these to wider bodies of literature where relevant. The section concludes with some thoughts on the limitations of the research and directions for future research.

3.1 Education and income

The data in sections 2.1 and 2.2 above indicate the clear link between the level of educational qualification held by at least one parent, and both the level of real, median, gross equivalised family income and the likelihood of having a family income that is less than 60 percent of the overall median equivalised family income. For almost every family type in the analysis, and for each census period, there was a positive income gap between those families with at least one adult with either a secondary school qualification or a post-secondary qualification and those where no parent had any educational qualification. The only exceptions to this were one-parent families with dependent children in 1991 and 1996. In addition, the income premium attached to having a higher level of education widened over the period under examination for almost all family types, with couples without children being the exception.

The link between income and the educational attainment of the parent is further reflected in the results for the low-income indicator, where the higher the level of educational attainment, the less likely it was that the family would have below 60 percent of the median equivalised family income.

The results obtained for this project are confirmed by other studies that have examined the association between income level and educational attainment in New Zealand (Maani 1997; Maani and Maloney 2004; Johnston 2004; Smart 2006) and elsewhere (Psacharopoulos 1994). For example, a 2006 study by the Ministry of Education using data from the Statistics New Zealand Income Survey found that people with tertiary qualifications earned much higher incomes than those without such qualifications. The report notes that:

Those with a highest qualification of a bachelors or higher degree received the highest weekly median income (\$756 in 2005), followed by 'other tertiary' (\$560). People with no qualifications received the lowest median weekly income (\$293) (Smart 2006, 53).

The report also notes that the gap between those with no qualifications and those with a bachelor's degree or higher "has decreased from a high point of 186 percent in 1999 to 158 percent in 2005" (ibid., 53).

Similar results are found in other studies. Maani (1999) used census data from 1981 to 1996 to examine the returns from secondary and tertiary education. Her results showed that "the returns to both secondary and tertiary education are significant and that compared to 1981, returns to all educational qualification levels were significantly higher in 1996" (Maani 1999, 31). In a later study using data from the Statistics New Zealand Household Labour Force Survey Income Supplement, Maani and Maloney (2004) reported similar results. In a more recent study, Nair found that:

The higher the level of study, the higher were people's earnings. The completion of a tertiary qualification at any level also increased earnings. The highest premium was earned by people who had completed a bachelors degree. Individuals with a bachelors degree earned 28 percent more than those who did not complete their bachelor-level studies (Nair 2007, 5).

3.2 Education and employment

The link between educational attainment of one or more parents and whether a family has no parent(s) in paid employment is clear in the data. The higher the level of educational attainment of the parent, the lower the likelihood that no parent in the family is employed.

The relationship between educational status and employment status has been investigated by other researchers in New Zealand, but this research typically tracks the relationships between individual income and individual educational status, and not between families and educational status. For example, Smart (2006) used data from the Household Labour Force Survey and the New Zealand Income Survey to examine the relationship between earnings, educational attainment and employment status. Smart found that:

In 2005, the median weekly income of a person with school qualifications (\$301) was 1.03 times higher than that of a person with no qualifications (\$293). However, the unemployment rate of a person with no qualifications (6.4 percent) was 1.5 times higher than that of a person with school qualifications (4.2 percent) (Smart 2006, 84).

All family types in the analysis experienced a rise in the proportion where one or more adults were working 48 hours or more, regardless of the level of qualifications held. In addition, for each family type at each census point, it was families where an adult had post-secondary qualifications that showed higher proportions with a parent working long hours than their equivalent family types with no qualifications. This appears to corroborate arguments that the demand for unskilled labour has decreased while the demand for skilled labour has increased. Given recent media coverage over the shortage of skilled workers, it suggests that many are working longer hours to compensate for this shortage.

3.3 Education and housing tenure

There is an obvious link between the holding of higher educational qualifications and home ownership, via the higher income typically obtained from the holding of such qualifications. However, the rising cost of education in the last 15 or so years, reflected in higher student fees and higher student loans, coupled with the recent increases in the cost of housing, serve to cast some doubts upon the strength of this relationship.

However, recent research by Scobie et al. (2005), which examined the statistical relationship between student loans and home ownership, found that the presence and size of a student loan does not appear to affect the probability of a couple having a mortgage (Scobie, Gibson, and Le 2005).

3.4 Education and wellbeing in general

Other research has found that the level of educational attainment is associated with a range of other aspects of wellbeing. For example, Nair et al. (2007) examined the relationship between education level and mortality rates and found that "people with a highest qualification at the tertiary level had lower mortality rates from all causes than people with a highest qualification at school level or those with no qualifications" (Nair, Smart, and Smyth 2007, 213).

In an earlier study of overall levels of wellbeing, Jensen et al. found that “People with no formal qualifications are the most likely to have living standard scores at the lower end of the ELSI distribution” (Jensen et al. 2006, 75); that is, they were more likely to be worse off than the general population.⁴

3.5 Strengths and limitations of the study

The primary strength of this study is the availability of census data, which theoretically covers the whole population. The inclusion of the entire population allows an analysis of changes in family wellbeing for a wide range of family types and for different ethnic groups. Changes in wellbeing for small sub-groups of the population, whose attributes are not captured in sample surveys, can therefore be examined using these data.

There are, however, a number of constraints on the ability to measure wellbeing using census data. The primary limitation of the analysis is that the range of indicators used is limited by the data that are collected in the five-yearly census. A second limitation occurs because the census only captures information about family members living in the same physical dwelling. This excludes extended families that live at more than one physical location and those where a child might live with each of their separated parents at different times.

Second, although this research uses cross-sectional information to create time-series data on different groups of people, it must be recognised that this is not a longitudinal study. The families and households studied do not contain exactly the same individuals from one census to the next. While associations and links can be made between different groups or circumstances and wellbeing, causal pathways cannot be shown.

3.6 Future research

A number of possible avenues for future research on the links between educational achievement, family type and wellbeing could be pursued. Firstly, an examination could be carried out which takes into account the ethnicity of the parents. Secondly, further examination could be undertaken of the differential impacts occurring in terms of whether the educational qualifications are held by a male or a female. Thirdly, the range of educational qualification categories used could be expanded by including extra categories to further the analysis (e.g., by making a distinction between degree and non-degree qualifications when analysing post-secondary qualifications).

⁴ The ELSI scale is a measure constructed by the Ministry of Social Development to measure the living standards of the general population. The scale is “based on what people are consuming, their various forms of recreation and social participation, their household facilities and so on, rather than being calculated from the resources (income, financial resources and assets) that enable them to do those things” (Jensen et al. 2006, 19).

Appendix A Working with census data

A.1 Confidentiality

Access to the data used in this study was provided by Statistics New Zealand in a secure environment, the Data Laboratory, designed to give effect to the confidentiality provisions of the Statistics Act 1975. Personal identification information supplied on the original census forms, such as name and address, is not carried over to the computer records held by Statistics New Zealand, and these details are therefore not available to Data Laboratory users. Further omissions eliminate the linking of individual-level records in the Data Laboratory data sets back to respondents.

In addition, all Data Laboratory output is subject to confidentiality rules set by Statistics New Zealand to further protect respondent confidentiality. The current rules are given in (Statistics New Zealand 2006). In particular, all frequencies in this report are randomly rounded to one of the nearest multiples of 3 (e.g., a count of 5 could become 3 or 6) to further guard confidentiality (Statistics New Zealand 2001). All percentages are calculated based on rounded counts. Derived statistics such as medians are not rounded. Given that the numbers presented are typically very large, rounding is expected to have no effect on the conclusions drawn.

Appendix B Family classification

A detailed overview of how families and households are enumerated by the census, and the data available for each, is given in an earlier report (Milligan et al. 2006). Further information can be found in Statistics New Zealand's classifications and standards for dwellings, families and households (Statistics New Zealand, 1999a, 1999b, 1999c) and the census (Statistics New Zealand 2001). Importantly, families and households, as identified in the census, have specific definitions that may differ from their intuitive meanings. In particular, the range of family structures that can be identified is limited by the fact that the census is a dwelling-based survey;⁵ that is, the highest level at which individuals are grouped is by common dwelling. As such, interpersonal relationships (familial or otherwise) among individuals living in the same dwelling are discernible, but those among individuals living in different dwellings are not.

The model for the census definition of family is the 'nuclear' unit, consisting solely of parents and children or partnered couples. These definitions are primarily based on social arrangements and 'parents' need not be the biological parents of their 'children', nor need couples be legally married. For example, two children who are parented by, and live only with, their grandmother in the same dwelling are classified as a family nucleus. Moreover, any group of children with a common parent or guardian ('person in a parent role') living in the same dwelling is considered part of the same family nucleus, provided they do not have any children of their own living in the same dwelling.⁶ In contrast, individuals living without children or partners in the same dwelling are not classified as belonging to a family nucleus, and neither are groups of siblings living together or groups of unrelated people living together.

Census households consist of all those people usually living in the same dwelling, regardless of their inter-relationships.

B.1 Family type classifications

Statistics New Zealand categorises family nuclei into three broad groups based on the presence or absence of children and the number of parents. These groups are further classified according to the dependency status of any children present (Statistics New Zealand 1999a, 1999b, 1999c). A dependent child is any child in a family nucleus aged 15 years or younger, or aged 16 or 17 years but not in full-time employment. An adult child is defined as a child in a family nucleus aged 18 years or over, or aged 16 or 17 years and engaged in full-time employment (Statistics New Zealand 2001). The categories are shown in Appendix Table B.1.

In all censuses prior to 2001, family type was re-derived to ensure comparability.

⁵ In the census, "a dwelling is any building or structure, or part thereof, that is used (or intended to be used) for the purpose of human habitation" (Statistics New Zealand 2001).

⁶ Same sex couples are not identifiable in census data prior to 1996.

Appendix Table B.1 Family type categories

Upper-level family type categories	Lower-level family type categories (family type by child dependency status)
Couple without children	Couple without children
Couple with children	Couple with dependent children only Couple with dependent and adult children Couple with adult children only Couple with children, dependency status not classifiable
One-parent family	One-parent family with dependent children only One-parent family with dependent and adult children One-parent family with adult children only One-parent family with children, dependency status not classifiable
Family type not classifiable	Family type not classifiable

B.2 Household composition classifications

Households have been categorised in each census based on the number and type(s) of family nuclei present, any other people present, and (in later censuses) the relationships between people outside family nuclei and those in them. The number of categories in this classification increased greatly from 1981 to 2001.

Although household composition is not used in the tables discussed in this report, it was found useful to investigate some relationships between families and households using this classification. To improve comparability, a concordance was used to amalgamate some categories in later years into a reduced scheme that could accommodate the earlier censuses. The comparable categories are shown in Appendix Table B.2. No variables were re-derived for household composition.

Note that where a household consists of a single family only, its composition category will coincide with the family's type.

Appendix Table B.2 Comparable household composition categories

Household composition categories

Couple only

Couple with children

One-parent family

Couple only plus others

Couple with children plus others

One-parent family plus others

One family household, not further defined

Two two-parent families with or without children

Two-parent plus a one-parent family

Two one-parent families

Two family household, not further defined

Three or more families

Multi-person household

One-person household

Visitor-only household

Household composition not classifiable

Appendix C Wellbeing indicators

C.1 Focusing on parents

The indicators used in this analysis are based on whether at least one of the parents (in a couple) or the parent (in a single-parent family) has a particular attribute. This was based on the assumption that the income, educational and employment characteristics of parents were likely to be of greater relevance to assessing family wellbeing than those of children.

C.2 Indicator rationalisation

The wellbeing indicators recommended by Milligan et al. were constructed (see (Milligan et al. 2006), Table 10.1), but preliminary analyses suggested that certain modifications should be made to aid overall understanding and to increase indicator relevance. These modifications are discussed in the subsections below. In particular, having two sets of indicators – one at the family level and one at the household level – provided many overlapping measures and made interpretation cumbersome. These were reduced to a single set by re-defining the household-level indicators to apply to family units. In order to provide extra contextual information and comparison groups, indicators for the one person and multi-person household composition categories were calculated separately and included in the analyses.

The original set of indicators (Milligan et al. 2006) contained some in which a high score indicated a negative impact on wellbeing (e.g., hours worked) and some in which the opposite was true (e.g., post-secondary educational attainment). This has now been rationalised to improve indicator interpretation: a ‘high’ score on all proportion-based indicators signifies a negative impact on wellbeing. The exceptions to this rule are the equivalised income and income inequality indicators, which are not measured by proportions.

C.3 Individual- to family-level variables

The proportion-based indicators recommended by (Milligan et al. 2006) were defined using a simple ‘one is sufficient’ principle, whereby a family/household was counted in the numerator if at least one member possessed the relevant characteristic. For example, in calculating the post-secondary educational attainment indicator, all families where at least one member possessed a post-secondary qualification were included in the numerator.

C.4 Retirement status

During initial investigations of indicator results, a clear distinction arose between couples and single people of retirement age and those who were younger. Therefore, retirement status was added to the family/household classification scheme. The retirement status classification is defined by age and receipt of New Zealand Superannuation. It is only defined for couple-only

families and one-person households. The correspondence between the retirement status categories and census variables is shown in Appendix Table C.1. A couple-only family was deemed ‘retired’ if both partners were aged 65 years or over and/or both partners received New Zealand Superannuation, or if one partner was aged 65 years or over and the other received New Zealand Superannuation. Similarly, one-person households were deemed ‘retired’ if the householder was aged 65 years or over, or received New Zealand Superannuation.

Compulsory retirement ages were made unlawful in New Zealand in 1999 (Statistics New Zealand, 2004a) and, to our knowledge, no official statistical definition of retirement exists. The definition used here was chosen as a simple and easily applied operational classification; it is not intended to be definitive. Indeed, overseas researchers have noted that a robust definition of retirement is difficult to specify (for example see Bowlby 2006). Statistics Canada has an official definition that sets 55 as the minimum retirement age and includes labour-force and income source characteristics to refine the classification (Bowlby 2007). In New Zealand, as in Canada, however, the age at which people cease work or change their working patterns varies among people and over time (Gower 1997; Statistics New Zealand 2004).

Appendix Table C.1 Retirement status classification, by family/household type, age and receipt of NZ Superannuation

Retirement status	Family/household type	Age and receipt of New Zealand Superannuation
Retired	Couple only (family)	Both partners are aged 65 years or over and/or receive New Zealand Superannuation
	One-person household	Aged 65 years or over or receives New Zealand Superannuation
Non-retired	Couple only (family)	Only one partner is aged 65 years or over and/or in receipt of New Zealand Superannuation, or neither is
	One-person household	Aged less than 65 years and does not receive New Zealand Superannuation

C.5 Added indicators

C.5.1 Families without paid work

The unemployment and income source indicators originally proposed by (Milligan et al. 2006) were based on the premise that unemployment and benefit receipt may be correlated with reduced wellbeing. However, changes in the benefit system between 1981 and 2001 made it difficult to construct a comparable time series for income sources, even after certain transfers such as the Family Benefit and New Zealand Superannuation were omitted. In response to this, the ‘families without paid work’ indicator was created. It replaces the unemployment and income source indicators.

Appendix D Revised Jensen Scale

Median gross household income is not a suitable indicator of the relative standard of living of a household compared with other households because it does not take into account how household composition affects demands on that income. For example, a one-adult household with a median annual household income of \$45,000 is likely to have access to a higher standard of living than a two-adult, three-child household with the same income. In order to compare household income across a range of household types, an equivalence scale is used to equalise household gross income.

The equivalence scale used for this study is the Revised Jensen Scale (RJS), which is a New Zealand scale derived by John Jensen of the Ministry of Social Development. Its reference point is a two-adult couple-only household, which is given a value of 1. All other household types have their expressed relative to that of the reference two-adult household, with adjustments made for the age and number of children. The scale contains adjustments which take into account the fact that children typically need less income than adults in order to maintain a comparable standard of living. Gross equivalised household income is calculated by dividing annual gross household income by the appropriate value for the household on the Revised Jensen Scale.

For example, a two-adult household with an annual income of \$40,000 would have an annual income equivalised with the Revised Jensen Scale of \$40,000, since its rating on the Jensen scale is 1. However, if an eight-year-old child were added to the household, its Jensen Scale rating would change to 1.19, and therefore its equivalised income would be $\$40,000/1.19 = \$33,613$.

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