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Expenditure patterns of New Zealand retiree households

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Disclaimer

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The opinions, findings, recommendations, and conclusions expressed in this study are those of the authors, not Statistics NZ, Te Ara Ahunga Ora Retirement Commission or Motu Economic & Public Policy Research. All opinions and errors should be attributed only to the authors.

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Abstract

This paper uses household-level data from the New Zealand Household Economic Survey from 2006/07 to 2018/19 to examine expenditure patterns of retiree households. We find that in 2018/19 retiree households spend on average \$55,700 per annum, of which 13% is on groceries, 19% on housing, 14% on other necessities (household utilities, communications, and insurance), and the remaining 54% on discretionary expenses. Household expenditure patterns differ significantly across demographic groups and income levels. On average, singles living alone spend \$30,700 per annum whereas couple-only households spend \$65,100 per annum. As retiree households age, they spend less, especially on discretionary categories such as clothing, transport, and recreation and culture. We find that subjective wellbeing is higher for retiree households who have higher qualifications, own their home, have higher incomes, live with their partner and have no dependent children, and is the lowest for rent-paying renters, single retirees living with others and Māori households. Retiree households are more likely to report having adequate income for every-day needs and being satisfied with life and less likely to report financial strain than pre-retirement households.

JEL codes

J14 Economics of the elderly

J26 Retirement

D12 Consumer economics: empirical analysis

Keywords

Retiree households, expenditures, retirement

Summary haiku

couples spend more per capita

but have higher wellbeing

than singles in retirement

retirees spend less

especially on non-necessities

as they get older

Table of Contents

1	Introduction	7
2	Literature review	8
2.2	Retirement consumption puzzle	8
2.3	International evidence on retirement expenditures	11
2.4	New Zealand evidence on retirement expenditures	12
2.5	Summary	13
3	Data	14
3.1	Data source	14
3.2	Descriptive statistics	15
4	Expenditure patterns	20
4.1	Overall pattern	20
4.2	Inequalities in expenditures	24
4.3	Expenditure patterns across population groups	26
4.4	Regression analysis	34
5	Subjective wellbeing	37
6	Conclusion	41
	References	42
	Appendix	44

List of Tables

Table 1: Sample sizes by survey year	15
Table 2: Characteristics of retiree households by survey year	18
Table 3: Characteristics of pre-retirement households by survey year	19
Table 4: Mean expenditure for retiree households by survey year	21
Table 5: Expenditures for retiree households – 2018/19	22
Table 6: Mean budget shares of major expenditure categories by income quintile – 2018/19	22
Table 7: Gini coefficients of expenditure and income for retiree households	25
Table 8: Average household expenditures by age group – 2018/19	26
Table 9: Average household expenditures by household composition – 2018/19	28
Table 10: Average household expenditures by housing tenure – 2018/19	30
Table 11: Average household expenditures by region – 2018/19	32
Table 12: Regression estimates of the correlates of household expenditure	36

Table 13: Wellbeing of retiree households – 2018/19	40
Appendix Table 1: HES expenditure categories	44
Appendix Table 2: Mean expenditures for retiree households – 2006/07	46
Appendix Table 3: Mean expenditures for pre-retirement households – 2018/19	46
Appendix Table 4: Average household expenditures for single retirees, by sex – 2018/19	47
Appendix Table 5: Average household expenditures by urbanisation – 2018/19	47
Appendix Table 6: Average household expenditures by broad ethnicity group – 2018/19	48
Appendix Table 7: Average household expenditures by migrant status – 2018/19	48
Appendix Table 8: Average household expenditures by employment status – 2018/19	49
Appendix Table 9: Average household expenditures by education level – 2018/19	50
Appendix Table 10: Average household expenditures by income quintile – 2018/19	51
Appendix Table 11: Average household expenditures by quintile of equivalised income – 2018/19	52
Appendix Table 12: Wellbeing of retiree households – 2012/13	53
Appendix Table 13: Wellbeing of retiree households – 2015/16	54
Appendix Table 14: Wellbeing of pre-retirement households – 2018/19	55

List of Figures

Figure 1: Lorenz curves of expenditure and income for retiree households	25
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1 Introduction

Central to the debate about retirement income policy is the question of retirement income adequacy – what level of income is required to sustain an acceptable standard of living in retirement? An analysis of the consumption needs of retirees will help inform this debate. This paper seeks to understand the consumption needs of retirees by examining the expenditure patterns of current retiree households in New Zealand. The findings will help inform the public about the level and type of expenditures they need to financially prepare for throughout different stages of their retirement. They will also provide policymakers and financial product providers with insights into the income needs of different types of retiree households.

The rest of the paper proceeds as follows. Section 2 reviews the related literature. Data sources and descriptive statistics are presented in Section 3. Sections 4 and 5 respectively present the results on expenditure patterns and subjective wellbeing of retiree households. Section 6 concludes.

2 Literature review

There are several definitions of what constitutes a retiree household in the literature. A retiree household is commonly defined as one that contains at least one person who has retired from working due to old age or a household where someone has reached the traditional retirement age of the country. The literature on retirement consumption consists of two main themes: explaining the retirement consumption puzzle, and reporting evidence on expenditure patterns during retirement. This section first summarises the literature on the retirement consumption puzzle, and potential explanations (Section 2.1). Section 2.2 presents evidence on expenditure patterns from international retiree households, followed by New Zealand evidence (Section 2.3).

2.2 Retirement consumption puzzle

The retirement consumption puzzle is the phenomenon where consumption falls as an individual enters retirement – this fall in consumption is not anticipated by either the permanent income hypothesis or the life-cycle hypothesis. Both theories postulate that people seek to maintain a steady level of consumption across their lifetime, which suggests that there should be no change in spending around the time of retirement. By contrast, ample empirical evidence from various countries shows that expenditure falls when people retire. Many studies have sought to document the retirement consumption gap – the dip in consumption around retirement age – and to explain potential causes of that gap.

Analysing monthly panel data from the Japanese Family Income and Expenditure Survey (JFIES) over 1986-2005 for 8,000 Japanese households,¹ Stephens & Unayama (2012) find that consumption decreases at retirement for below-median-income households, although this reduction is limited to food and work-related expenses. They do, however, observe that on average, Japanese households do not exhibit significantly decreased consumption at retirement. This is likely due to differences in retirement bonuses across sectors. These retirement bonuses are unique to Japan, and can consist of sizeable amounts of money (up to four years salary) for some.

An intuitive explanation for the fall in consumption at retirement is the cessation of work-related expenses. Work-related expenses may include costs such as food, transportation, and clothing required for work. Several studies including (Aguiar & Hurst, 2008; Battistin et al., 2007; Hurst, 2007) have found that the absence of these expenses may explain a large part of the fall in consumption at retirement.

¹ Households in the JFIES are interviewed for six consecutive months. The panel is rotating such that in any given month approximately one-sixth of households are being interviewed for the first time, one-sixth for the second time, and so on.

Another explanation for the consumption gap is due to unanticipated health shocks. Some households may suffer an unanticipated health shock which forces them to retire involuntarily, resulting in households entering retirement without sufficient resources to sustain their desired level of consumption. Barrett & Brzozowski (2010) provide Australian evidence for the role of unanticipated health shocks and the resulting retirement consumption gap. Similar evidence for the US is documented by Hurd & Rohwedder (2003, 2008). In their 2008 paper, Hurd and Rohwedder observe that retiree households who report that health was an important reason for retiring experience a decline in spending of 9-17%. For retiree households where health as not an important factor for retiring, no decline in expenditures is observed. In his review of the literature, Hurst (2007) finds that unanticipated health shocks can account for much of the heterogeneity in retiree household expenditures.

Banks et al. (2016) compare consumption paths for retiree households in the UK and US. They find that in the US, spending decreases marginally at older ages, while in the UK, spending falls sharply. Removing medical expenditures accounts for roughly three quarters of the difference between the two countries. This is likely due to the increased medical expenses arising from aging being covered by the government in the UK, while retirees in the US must bear these costs. They attribute the remaining differences in expenditures as arising from differences across the two countries in terms of housing and family sizes among other factors. Their findings suggest that previous literature where a fall in spending is not found may be due to increasing health costs for older Americans.

There is also the possibility of a gap between household expectations around retirement, and actual occurrences in retirement – particularly the amount of retirement income received from the government. Analysing income and expenditure patterns around the point of retirement in the UK, Banks et al. (1998) find a fall in consumption as household heads retire. Controlling for labour market participation explains part, but not all, of the dip in consumption. They suggest that the remainder of the dip in consumption may be due to retirement income being less than households expect. Hori & Murata (2014) examine a sample of approximately 4,000 Japanese households from 1995 to 2003 engaged in the agricultural sector. They find that household expenditures decrease after retirement of the household head, and this decline is larger for households with less financial assets. They attribute the possibility of myopic consumers or a lack of saving discipline as being part of the reason for the consumption gap at retirement.

There is evidence that changes in household composition around the time of retirement may provide an explanation for the retirement consumption gap. In their analysis of Italian expenditure data from 1993 to 2004, Battistin et al. (2007) find that non-durable consumption

falls by 9.8% because of male retirement. This fall can be partly explained by expenditure reductions on goods that are work-related or leisure substitutes. However, at retirement, there is also a significant shift in household composition. The number of grown children living with their parents decreases significantly, and if expenditures are adjusted for the reduced household size, the fall in consumption is no longer significant. As a result of changing household composition, housing downsizing is common in retirement. Banks et al. (2007) show that over a ten-year window, almost one in three US homeowners aged 50 or older moved out of their original home, for renters, this number is even larger. They observe that downsizing takes multiple forms, including moving to a home with fewer rooms or a lower-valued home, or refinancing. Nguyen et al. (2021) find that in Australia retirement causes people to downsize both physically and financially.

It should be noted that expenditures do not necessarily equate to consumption. Becker's (1965) theory of home production suggests that people substitute away from market consumption as the opportunity cost of time falls. Due to increased leisure time, retirees are more likely to home produce many items which they tend to purchase from the market during their working lives, such as meal preparation, cleaning, gardening, and so on. Several studies have found that increased time spent on home production and/or decreased expenditure on food can account for the retirement expenditure gap (see for example, Aguiar & Hurst, 2004; Hurd & Rohwedder, 2003; Lührmann, 2010). In this case, even though expenditure decreases, actual consumption might not necessarily decrease.

Retirees might also be able to enjoy consumption at a lower cost by moving away from high-cost locations (i.e., cities). For example, Maddock & Auster (2016) find average expenditure for retiree households in Sydney is twice that of those in regional South Australia. Such differences in expenditures are unlikely to reflect the difference in living standards alone; at least part of it is due to the high living costs of Sydney. Indeed, Phillips (2013) shows that Sydney has the highest cost of living of any capital city in Australia. Studies such as Kurre (2003) find that the cost of living in an urban area is between 2.4% and 6% greater than in rural areas, the largest difference in costs exist for housing, health care, and transportation expenses. Nguyen et al. (2021) observe that in Australia, retirement increases the probability of moving, and these moves are more likely to be across local government or state/territory borders. By moving away from high-cost locations, retiree households might be able to lower their expenditures without experiencing a fall in consumption.

Lastly, the retirement consumption gap may be at least partly driven by price discrimination. Many providers of goods and services offer discounts to pensioners, such as reduced public

transport fares and cheaper movie tickets. Even when providers do not offer age-based discounts, retirees are more easily able to shift their consumption to periods when these goods and services are cheaper. For example, it may be easier for retirees to travel during off-peak seasons such as time outside of school holidays, or during the week. Price discrimination and consumption shifting to cheaper times are instances where a fall in expenditure may not necessarily mean a fall in consumption.

2.3 International evidence on retirement expenditures

Central to understanding the wellbeing of retiree households is understanding their expenditure patterns, and how these may differ across demographic characteristics. In general, it is found that housing, transportation, health care, and food are the most significant spending categories for retiree households. Housing is often the leading expenditure category, with the order of the remaining expenses varying across studies.

Using US Data, Bahizi (2003) finds that housing, transportation, and food expenditures account for approximately two-thirds of retiree households expenditures. They note that White retirees are more likely to own a home without a mortgage and are less likely to be renting than African American and Hispanic retirees. White retirees are also more likely to be in a husband-and-wife household (40%) than African American households (18%), and Hispanic households (29%).

Banerjee (2012) observes that, using age 65 as a benchmark, household expenditures fall 52% by age 95. He also finds that transportation and entertainment expenses decrease with age. Another notable finding is that couples are more likely to have sufficient income to support their expenses as well as greater levels of wealth than single or widowed individuals. Among singles and widows, men are more likely to have adequate income and have higher wealth than women. Education also matters; people who attended college, and high-school graduates have incomes that meet or exceed their expenditures, and both groups have significant amounts of total net wealth. Those who attended college also have larger total net wealth than high-school graduates. High-school dropouts, however, do not have sufficient income to meet their expenses, or sufficient wealth to sustain a comfortable retirement. In a later and related study, Banerjee (2014) finds that health expenditures increase with age, and that health expenditures make up the second-largest share of total expenditures for those over age 75.

Butrica et al. (2005) observe that housing and health care are the two largest expenditure categories for retirees. They note that at older ages, retirees continue to spend more on housing than health care, even though total spending falls with age. This is due to older retirees partly

offsetting the increased health care costs by decreasing the budget share of clothing and transport. Allocation of expenditures also differ substantially between married and non-married retirees, with non-married retirees spending larger shares of their budget on housing (39% vs. 29% among married retirees), food (15% vs. 13%), and clothing (3% vs. 2%).

Leicester et al. (2009) report similar findings in the UK. They find that retirees spend less than non-retirees, even after adjusting for household composition. Total spending peaks as households reach their late fifties, and then falls rapidly. Older retirees spend more of their budget on food, fuel, household services, and health care costs than younger retirees. Those aged 80+ spend roughly a quarter of their budget on food, compared to 17% for those aged 60-64. Additionally, the richest retirees spend a significant amount of their budget share on leisure (15.1%), while the poorest spend relatively little (6.4%) on this category.

Using data from the Households, Income and Labour Dynamics in Australia Survey between 2002 and 2014, Maddock & Auster (2016) find that total expenditures decline with age, beginning at age 45. However, these expenditures are not adjusted for household size, so this difference may be due to people older than 45 being less likely to have children living at home with them. These expenditure levels do not decrease throughout retirement.² For retiree households, on average, the largest expenditure items are food and meals, utilities, healthcare, and transport. Younger retirees spend significant amounts of their budget on mortgage repayments on their primary residence and home repairs, which are much lower for older households. Older households are less likely to be making mortgage repayments on their primary residence, and households who do not own their own home spend an average of 40% of their total expenditure on housing costs. Spending on groceries and meals, and expenditure on healthcare remain constant through retirement. They also find that household expenditures vary more by location than income decile – suggesting that the location of households is a key predictor of expenditures.

2.4 New Zealand evidence on retirement expenditures

There is limited information on retiree household expenditures in New Zealand. Most closely related to our current paper is Matthews (2022). They define retiree households as those where at least one of the sources of income is New Zealand Superannuation, a war pension or other government pension, and focus on the average expenditures of retiree households across two different income quintiles (the second and fourth quintiles), living in either a metro or provincial area, and who are either one person or two person households.

² The authors do not report expenditures on leisure activities. These expenditures may be expected to decrease through retirement as retirees become less mobile, and thus less able and/or willing to engage in leisure activities.

Using data from the Household Economics Survey (HES) for the year ended 30 June 2019, Matthews (2022) find that retiree households spend between 11% and 35% of their total expenditures on transport for one-person households, and 12% to 17% for two-person households. She also finds that retiree households spend between 17% and 30% of their total expenditures on housing and household utilities. Other significant expenditure categories for these households are food (11-22% of total expenditure) and recreation and culture (9-17%). Average expenditures for retirees in provincial areas are found to be less than in metropolitan areas in most cases.

The New Zealand retiree expenditure evidence appears to fit well with evidence observed in other countries. In particular, it is in line with the Australian findings by Maddock & Auster (2016) discussed in section 2.2.

2.5 Summary

From previous research on retiree household expenditures, several patterns emerge. Total expenditures tend to fall at the time of, and throughout retirement. A retirement consumption puzzle is often observed in the international literature. Suggested explanations for the consumption gap include cessation of work-related expenses, unanticipated health shocks, changes in household composition, increased home production and relocation to lower-cost areas.

Evidence suggests that housing, food, transportation, and health care are significant expenditure categories for retiree households. Expenditure levels vary significantly by relationship status, ethnicity group, education level, location, and so on. Our paper will extend on that of Matthews (2022) by examining in greater detail how expenditure patterns differ by a range of demographic characteristics such as ethnicity, age, relationship status, education level, housing tenure, income level, location, and over time for retiree households in New Zealand.

3 Data

3.1 Data source

This study draws on data from the HES, a major survey conducted by Statistics New Zealand to collect information on household income, savings, and expenditure, as well as demographic information on individuals and households. Since its inception in 1973, the HES has undergone several redevelopments, most importantly in 2006/07 and 2018/19. Currently the HES has three components: HES Income, HES Expenditure, and HES Net worth. Each survey is usually run from July to June. The HES Expenditure collects itemised household expenditures for calculating the expenditure weights of items in the Consumer Price Index (CPI). There have been six HES Expenditure surveys since the 2006/07 redevelopment: 2006/07, 2009/10, 2012/13, 2015/16, 2018/19 and 2021/22. We use all but the last HES Expenditure survey.³ However, we concentrate on the 2018/19 survey for most of our analyses as it contains the latest expenditure data available.

HES Expenditure asks respondents about their household expenditures using both recall and diary methods. When the household is interviewed, they are asked about expenditures using a 3-month recall for large or irregular expenditure types (e.g., health, travel); using 12-month recall for housing-related expenditures; and using the latest payment for regular expenditures (e.g., utilities, rates, rent, insurance). All household members aged 15 years and older are also asked to keep a diary record of all their expenditures for a specified period.⁴

In HES, each expenditure item is denoted by a New Zealand Household Expenditure Classification (NZHEC) code. NZHEC is loosely based on the United Nations Classification of Individual Consumption According to Purpose. In the available HES data, NZHEC codes are 9-digit and denote six levels: group, subgroup, class, section, subsection, and item. There are approximately 2,000 unique NZHEC codes in each HES survey. We classify expenditure items into 23 categories based mainly on their group and subgroup codes, as described in Appendix Table 1. We exclude NZHEC group 14 which are for sales, trade-ins and refunds, and other negative expenditures (e.g., rental bond refunds recorded in the housing group).

³ Data on HES 2021/22 are expected to be available from March 2024.

⁴ Respondents kept a 14-day diary of expenditures until the 2018/19 survey when the diary was changed to a 7-day diary to reduce respondent burden. More information can be found on the Statistics New Zealand website: <https://www.stats.govt.nz/methods/changes-to-the-household-economic-survey-201819>.

Table 1 contains information on our analytical sample sizes.⁵ Our sample consists of between 2,900 and 3,900 households from each year,⁶ with a total of approximately 16,500 households for approximately 42,000 individuals from 2006 to 2019. We define retiree households as those where at least one member has reached age 65, the age at which the vast majority of New Zealand residents are eligible for New Zealand Superannuation. This is different from Matthews (2022) who defines retiree households as those where at least one of the sources of income is New Zealand Superannuation, a war pension or other government pension. Our retiree sample contains 8,421 individuals from 4,686 households, whereas the 2018/19 sample consists of 1,152 households and 2,115 individuals. Our sample of retiree households is therefore similar in size to many studies in the retirement expenditures literature cited in section 2.2. (For example, Banerjee (2012, 2014) and Hori & Murata (2014) have a sample size of between 4,000 and 5,000 households.)

Table 1: Sample sizes by survey year

Number of	2006/07	2009/10	2012/13	2015/16	2018/19
All households	2,901	3,126	3,003	3,498	3,933
All individuals	7,494	8,121	7,440	8,862	10,038
Retiree households	702	789	918	1,125	1,152
Individuals in retiree households	1,263	1,428	1,614	2,001	2,115

Source: Household Economic Survey

Note: Not all individuals who live in a retiree household are retirees.

3.2 Descriptive statistics

Table 2 contains descriptive statistics of our retiree sample. These statistics have been weighted using the survey weights to be representative of the underlying population.⁷ In 2018/19, 7.8% of retiree households have at least one Māori individual aged 65 or over, compared with 8.6% in 2006/07. Meanwhile, the share of retiree households with a Māori individual of any age increases from 9.2% to 10%. According to Census 2018, Māori accounted for 16.5% of the New Zealand population.⁸ Table 3 shows that about 18% of households aged 55-64 have a Māori individual, which is roughly in line with their share in the population. The low share of Māori households among retiree households could be due to a number of factors, such as lower life expectancy for

⁵ As required by Statistics New Zealand's microdata confidentiality protocols, all unweighted counts of individuals and households in the HES reported in this paper have been randomly rounded to base 3, while weighted counts have been rounded to the nearest 1000. Proportions have been calculated based on rounded counts.

⁶ Since the 2018/19 redevelopment, the sample size for the core HES survey was boosted (to over 21,000 households, from 3,500 in 2016/17) in order to get better representation of households with low income or high material deprivation. For HES 2018/19, our analytical sample is restricted to households that were interviewed in the Expenditure component.

⁷ Unless otherwise stated, descriptive statistics presented in this paper have been weighted using the survey weights to be representative of the underlying population.

⁸ See <https://www.stats.govt.nz/tools/2018-census-ethnic-group-summaries/m%C4%81ori>

Māori,⁹ retiree Māori living in larger households, or under-representation of Māori retiree households in the HES.

The share of retiree households with a migrant aged 65 or older remains relatively stable between 25% and 27%, whereas the share with a migrant of any age is around 30%. The share of retiree households with at least one member still in employment increases over the sample period from 31% to 40%. The share of retiree households living with a child (aged 14 or less) decreases from 6.8% in 2006/07 to 5.2% in 2018/19. Over half (56%) of retiree households have the oldest member in the age range 65-74, 35% in the age range 75-84, and 9% in the age range 85+.

For retiree households we define household education based on the highest qualification of any retiree in the household. For pre-retirement households, household education is defined based on the highest qualification of anyone in the household.¹⁰ Among retiree households, 31% have no qualification, 19% have some school qualification (Level 1-3 certificate, or equivalent), 34% have a post-school qualification (Level 4-6 certificate/diploma), 7.6% have a bachelor's degree or a Level 7 certificate, and 8.4% have a postgraduate degree.

Almost half (47%) of retiree households are couples only and a third are singles living alone, with the remainder being made up of single retirees living with others (15%) and couples living with children (5.8%). 'Singles living with others' include sole parents living with their dependent children or single adult children and singles living with relatives or non-relatives, as long as there are no couples in the household. 'Couples living with children' are mainly retiree couples living with adult children (aged 15+); only a small number are those living with dependent children (aged 0-14). Almost two thirds of retiree households (66%) own their home outright, 14% own with a mortgage, 14% are rent-paying renters while the remaining 5.0% are rent-free renters.

In 2018/19, 27% live in Auckland, 12% live in Wellington, 12% live in Canterbury, 36% and 13% live in the rest of the North and South Islands respectively. Across urban/rural sectors, 40% of retiree households live in major urban areas, 44% live in other urban areas, and 16% live in rural areas. The geographic distribution is similar in other HES years.

In 2018/19, both the mean and median retiree household size is 2. These are comparable with previous years, although the mean is slightly lower in those years (1.82-1.93 persons per household). This suggests that retirees live in smaller households than working-aged people.¹¹ Mean total annual household income after adjusting for inflation increases by 39%, from \$53,400

⁹ In 2017–2019 life expectancies for Māori males and females were 7.5 and 7.3 years lower than for their non-Māori counterparts, see <https://www.stats.govt.nz/information-releases/national-and-subnational-period-life-tables-2017-2019>.

¹⁰ Table 2 presents descriptive statistics when education for retiree households is defined in both ways. Household education is lower when defined based on the retiree's education, which reflects the fact that educational attainment has increased over time. Nevertheless, the patterns across years and across education levels are similar.

¹¹ Hyslop et al. (2019, tbl. 1) find that the mean household size for people aged 18-64 is around 3 during 1986-2013.

to \$74,200 (June 2019 prices)¹² between 2006/07 and 2018/19, and median total income increases from \$36,800 to \$44,000. Mean total annual expenditure increases by 38%, from \$40,300 to \$55,700 over the same period, and median total expenditure increases from \$30,000 to \$40,200.

For comparison, Table 3 presents descriptive statistics of pre-retirement households, defined as those whose oldest member is aged 55-64. In 2018/19, pre-retirement households are more likely to report having a dependent child (15% vs. 5%), a person of Māori descent (18% vs. 7.8%) or a migrant (40% vs. 27%). They are also more likely to have at least one adult member working (84% vs. 40%).

On average, pre-retirement households have higher qualifications, with 35% of pre-retirement households having a bachelors or postgraduate degree (compared to 16% of retiree households). In terms of household composition, pre-retirement households are much more likely to be couples living with children (26% vs. 5.8%) or single living with others (24% vs. 15%). They are less likely to be singles living alone (23% vs. 33%) or couples only (28% vs. 47%). Pre-retirement households are almost half as likely to own their home outright (36% vs. 66%) and almost twice as likely to be paying rent (27% vs. 14%).

Pre-retirement households are more likely to live in major urban areas (47% vs. 40%) and less likely to live in other urban areas (35% vs. 44%) than retiree households. Much of this appears to be due to pre-retirement households being more likely to live in Auckland (31% vs. 27%), and less likely to live in the rest of the North Island (33% vs. 36%) than retiree households.

Pre-retirement households are also large on average, with a mean (median) household size of 2.6 (2) individuals. Mean household income increases by 22%, from \$95,800 to \$116,700 between 2006/07 and 2018/19, while mean total expenditure increases by 14%, from \$67,700 to \$77,200 over the same period.

¹² Unless otherwise stated, income and expenditure figures from the HES presented in this paper have been deflated to June 2019 prices using the CPI.

Table 2: Characteristics of retiree households by survey year

	2006/07	2009/10	2012/13	2015/16	2018/19
Māori aged 65+ [#]	0.086	0.066	0.079	0.092	0.078
Any Māori [#]	0.092	0.079	0.100	0.111	0.100
Migrant aged 65+ [#]	0.273	0.276	0.258	0.251	0.265
Any migrant [#]	0.292	0.291	0.284	0.301	0.301
In employment [#]	0.311	0.352	0.416	0.381	0.401
Has children	0.068	0.039	0.042	0.038	0.052
<i>Age group (of oldest person)</i>					
65-74	0.522	0.533	0.560	0.567	0.557
75-84	0.405	0.360	0.360	0.328	0.353
85+	0.073	0.105	0.081	0.103	0.090
<i>Education (highest of aged 65+)</i>					
No qualification	0.346	0.352	0.328	0.358	0.313
Some school	0.241	0.218	0.200	0.165	0.190
Post-school	0.338	0.339	0.358	0.333	0.335
Bachelor's degree	0.051	0.047	0.049	0.065	0.076
Postgraduate degree	0.030	0.045	0.063	0.077	0.084
<i>Education (highest of anyone)</i>					
No qualification	0.278	0.283	0.253	0.280	0.234
Some school	0.243	0.213	0.219	0.180	0.190
Post-school	0.370	0.381	0.372	0.358	0.351
Bachelor's degree	0.065	0.063	0.067	0.082	0.100
Postgraduate degree	0.043	0.060	0.091	0.100	0.124
<i>Composition</i>					
Single living alone	0.405	0.407	0.379	0.387	0.325
Couple only	0.405	0.428	0.433	0.421	0.467
Single living with others	0.157	0.129	0.128	0.140	0.148
Couple living with children	0.032	0.037	0.060	0.052	0.058
<i>Housing tenure</i>					
Owned outright	0.732	0.724	0.707	0.726	0.659
Owned with a mortgage	0.105	0.113	0.149	0.113	0.144
Paying rent	0.151	0.152	0.133	0.132	0.144
Rent free	0.011	0.010	0.012	0.027	0.050
<i>Region</i>					
Auckland	0.254	0.220	0.258	0.243	0.271
Wellington	0.103	0.118	0.093	0.111	0.122
Rest of North Island	0.386	0.373	0.386	0.385	0.359
Canterbury	0.141	0.157	0.126	0.128	0.116
Rest of South Island	0.119	0.131	0.137	0.132	0.134
<i>Urbanisation</i>					
Major urban	0.403	0.409	0.395	0.395	0.403
Other urban	0.427	0.444	0.423	0.452	0.435
Rural	0.127	0.118	0.137	0.146	0.162
Mean household size	1.89	1.82	1.93	1.87	2.00
Mean total income	\$53,360	\$63,786	\$68,317	\$70,418	\$74,155
Mean total expenditure	\$40,259	\$41,686	\$48,305	\$50,107	\$55,746
Median household size	2	2	2	2	2
Median total income	\$36,772	\$40,417	\$44,677	\$46,600	\$44,018
Median total expenditure	\$30,042	\$32,425	\$36,656	\$38,129	\$40,245
Number of households	702	789	918	1,125	1,152
Number of individuals	1,263	1,428	1,614	2,001	2,115

Source: Household Economic Survey

Note: All dollar values are in June 2019 prices. [#]Category = 1 if anyone in the household has the characteristic.

Table 3: Characteristics of pre-retirement households by survey year

	2006/07	2009/10	2012/13	2015/16	2018/19
Māori	0.124	0.132	0.166	0.194	0.183
Migrant	0.332	0.351	0.309	0.369	0.398
In employment	0.873	0.834	0.893	0.889	0.836
Has children	0.097	0.088	0.121	0.129	0.145
<i>Education (highest of anyone)</i>					
No qualification	0.124	0.115	0.094	0.105	0.132
Some school	0.220	0.223	0.212	0.175	0.183
Post-school	0.367	0.429	0.397	0.348	0.336
Bachelor's degree	0.127	0.125	0.147	0.188	0.183
Postgraduate degree	0.158	0.111	0.147	0.182	0.164
<i>Composition</i>					
Single living alone	0.263	0.199	0.257	0.203	0.226
Couple only	0.394	0.412	0.345	0.292	0.280
Single living with others	0.139	0.149	0.166	0.197	0.237
Couple living with children	0.208	0.240	0.235	0.311	0.255
<i>Housing tenure</i>					
Owned outright	0.444	0.453	0.423	0.400	0.363
Owned with a mortgage	0.398	0.341	0.336	0.357	0.349
Paying rent	0.147	0.196	0.225	0.215	0.272
Rent free	0.012	0.010	0.016	0.028	0.016
<i>Region</i>					
Auckland	0.290	0.277	0.309	0.326	0.309
Wellington	0.120	0.115	0.114	0.095	0.121
Rest of North Island	0.293	0.372	0.339	0.317	0.333
Canterbury	0.143	0.125	0.137	0.138	0.121
Rest of South Island	0.154	0.108	0.101	0.120	0.118
<i>Urbanisation</i>					
Major urban	0.486	0.416	0.485	0.468	0.468
Other urban	0.305	0.389	0.329	0.338	0.352
Rural	0.174	0.176	0.169	0.182	0.183
Mean household size	2.31	2.38	2.41	2.65	2.56
Mean total income	\$95,787	\$105,897	\$102,835	\$119,531	\$116,687
Mean total expenditure	\$67,689	\$68,770	\$64,063	\$79,462	\$77,227
Median household size	2	2	2	2	2
Median total income	\$81,389	\$91,462	\$83,222	\$95,327	\$94,142
Median total expenditure	\$55,375	\$60,354	\$55,541	\$65,086	\$64,039
Number of households	438	579	543	690	780
Number of individuals	957	1,290	1,188	1,623	1,785

Source: Household Economic Survey

Note: All dollar values are in June 2019 prices.

4 Expenditure patterns

This section analyses retiree household expenditures. Section 4.1 describes overall patterns in expenditures of retiree and pre-retirement households while section 4.2 documents inequalities. Section 4.3 analyses how expenditures vary across a range of demographic characteristics, and in section 4.4 we conduct a descriptive regression analysis to gain further understanding as to how expenditures differ across demographic groups whilst holding other characteristics constant.

4.1 Overall pattern

Table 4 contains mean total expenditure and mean budget share of each group for retiree households. As noted above, mean total expenditure increases by 38%, from \$40,300 to \$55,700 between 2006/07 and 2018/19. Four main expenditure categories emerge for retiree households: groceries, other housing (i.e., excluding rent and mortgage payments), other transport (i.e. excluding fuel and air transport), and recreation and culture, which together account for 45% of total expenditure in 2018/19. These findings are in line with the literature, as noted in section 2.2. While health care is a major expenditure for US retirees, New Zealand retiree households only spend 4-5% of their budget share in this category. This reflects the fact that New Zealand retirees rely on publicly-funded services for health care.

Mean budget shares of all categories remain relatively stable over the study period. In 2018/19 retiree households spend 13% of their budget on groceries, 19% on the three housing categories combined (rent, mortgage repayments on the primary residence, and other housing), 14% on household utilities, communications, and insurance, and the remaining 54% on other categories. In 2006/07 the corresponding figures were respectively 14%, 17%, 14% and 55%.

Categories of low mean expenditures for retiree households include mortgage repayments on other properties, education, personal care and personal effects, credit services, miscellaneous services, other non-mortgage repayments, and gifts and other expenses. Together these seven categories account for 6.4% of mean retiree household budget share. Given their low budget shares, we henceforth combine all seven categories into 'miscellaneous'. Given the relatively stable expenditure shares for most categories across years, we concentrate on 2018/19, unless otherwise stated.

Table 5 shows how expenditures vary across quartiles. Less than half of households report any spending on tobacco and alcohol, and clothing. The mean expenditures on these categories are \$1,100 and \$1,800, and the top 25% of spenders in these categories spend at least \$1,400 and \$1,600 respectively. Households in the bottom quartile of health-related expenditures report zero

spending on health. Whilst the mean expenditure on health is \$2,500 per year, the median is \$600 per year, and the upper quartile is \$2,600.

Table 4: Mean expenditure for retiree households by survey year

	2006/07	2009/10	2012/13	2015/16	2018/19
	(1)	(2)	(3)	(4)	(5)
Mean total expenditure	\$40,259	\$41,686	\$48,305	\$50,107	\$55,746
<i>Mean budget share</i>					
Groceries	0.144	0.152	0.136	0.127	0.130
Food eaten away from home	0.029	0.037	0.035	0.041	0.039
Tobacco and alcohol	0.026	0.027	0.028	0.023	0.020
Clothing	0.032	0.032	0.024	0.027	0.033
Rent	0.036	0.039	0.034	0.037	0.036
Mortg. repayments on prim. residence	0.028	0.028	0.027	0.030	0.043
Mortg. repayments on other properties	0.002	0.011	0.015	0.008	0.004
Other housing	0.103	0.097	0.127	0.114	0.110
Household utilities	0.051	0.054	0.051	0.046	0.039
Household contents	0.058	0.054	0.047	0.046	0.045
Health	0.043	0.041	0.043	0.057	0.044
Fuel	0.039	0.042	0.045	0.035	0.041
Air transport	0.016	0.016	0.015	0.036	0.045
Other transport	0.093	0.062	0.089	0.087	0.086
Communications	0.035	0.040	0.035	0.034	0.034
Recreation and culture	0.130	0.126	0.114	0.111	0.126
Education	0.003	0.003	0.004	0.003	0.006
Personal care and personal effects	0.038	0.035	0.028	0.030	0.028
Insurance	0.056	0.060	0.063	0.066	0.064
Credit services	0.005	0.005	0.003	0.002	0.002
Miscellaneous services	0.008	0.009	0.014	0.012	0.005
Other non-mortgage repayments	0.011	0.015	0.009	0.014	0.003
Gifts and other expenses	0.010	0.015	0.016	0.016	0.017

Source: Household Economic Survey

Note: All dollar values are in June 2019 prices. Large expenditure categories are in bold. See Appendix Table 1 for definitions of expenditure categories.

At least three quarters of retiree households report paying no rent and mean rent across all retiree households is \$2,000. Given that the median weekly rent in 2018 was \$340,¹³ this suggests that only a small proportion of retiree households are paying rent. Very few retiree households are paying off debt, as indicated by the zero value of upper-quartile expenditures on 'mortgage repayments on primary residence'.

The spread in expenditures is relatively narrow in some categories and very wide on others. In particular, the interquartile ratio (the ratio of the upper quartile value to the lower quartile value) is low for groceries (3.3), total housing (2.3), household utilities (2.2), communications (2.2) and insurance (3.5). The narrow spread indicates that these expenditures are relatively evenly distributed across the population and suggests these categories are necessities for retiree households. By contrast, the interquartile ratio is very high for other categories such as household contents (28), total transport (17), recreation and culture (8.3) and miscellaneous (17), suggesting

¹³ See <https://www.stats.govt.nz/tools/2018-census-place-summaries/new-zealand>

that these are discretionary expenditure categories. We henceforth consider groceries, total housing, household utilities, communications, and insurance to be necessities. The remaining ten categories are considered discretionary.¹⁴

Table 5: Expenditures for retiree households – 2018/19

	Mean	Lower quartile	Median	Upper quartile
Total expenditure	55,746	25,221	40,245	69,945
Groceries	7,262	3,128	6,142	10,186
Food eaten away from home	2,199	0	958	2,762
Tobacco and alcohol	1,123	0	0	1,378
Clothing	1,840	0	0	1,590
Rent	1,995	0	0	0
Mortg. repayments on primary residence	2,422	0	0	0
Other housing	6,106	2,185	3,358	6,535
Household utilities	2,186	1,305	1,952	2,807
Household contents	2,521	104	829	2,860
Health	2,460	0	550	2,598
Fuel	2,265	0	515	3,711
Air transport	2,485	0	0	568
Other transport	4,776	144	619	2,664
Communications	1,900	956	1,422	2,094
Recreation and culture	7,044	777	2,576	6,448
Insurance	3,573	1,266	2,404	4,383
Miscellaneous [#]	3,588	220	1,059	3,792
Total housing [*]	10,523	2,964	5,642	11,286
Total transport [^]	9,526	614	3,841	10,524
Total necessities	25,444	13,555	20,583	30,766
Total discretionary	30,302	8,151	18,253	38,524

Source: Household Economic Survey

Notes: In June 2019 prices. Large expenditure categories are in bold. [#]Includes: mortgage repayments on other properties, education, personal care and personal effects, credit services, miscellaneous services, other non-mortgage repayments, and gifts and other expenses. ^{*}Includes: rent, mortgage repayments on primary residence, and other housing. [^]Includes: fuel, air transport, and other transport. See Appendix Table 1 for definitions of expenditure categories.

Table 6: Mean budget shares of major expenditure categories by income quintile – 2018/19

	First quintile		Third quintile		Fifth quintile	
	Mean	Budget share	Mean	Budget share	Mean	Budget share
Total expenditure	31,297	1.000	51,909	1.000	98,765	1.000
Groceries	4,737	0.151	6,783	0.131	11,642	0.118
Total housing	6,459	0.206	9,019	0.174	19,177	0.194
Other necessities	5,651	0.181	7,096	0.137	11,549	0.117
Total necessities	16,849	0.538	22,898	0.441	42,370	0.429
Total discretionary	14,449	0.462	29,011	0.559	56,395	0.571

Source: Household Economic Survey

Note: See notes to Table 5.

¹⁴ We use these terms as roughly in line with the definitions of 'necessity goods' and 'luxury goods' in economics. As income rises, the proportion of income spent on necessities falls even if absolute expenditure on them rises. By contrast, spending on luxuries rises proportionally faster than income. Whether a good is a necessity or a luxury is an empirical question which can be addressed by estimating income elasticity of demand for the good. Using HES data from 2000/01 to 2015/16, Thomas (2019) finds Food, Transport fuels, and Household utilities, communication and education to be necessities, and Alcohol & tobacco, Clothing & footwear, Health care, Transport excluding fuels, Recreation & culture, and Personal miscellaneous to be luxuries. Thomas's (2019) analysis is based on all households and excludes housing and durables.

Table 6 shows mean budget shares of major expenditure categories by income quintile. On average households in the middle quintile (the third quintile) spend \$51,900 per annum in 2018/19, which is just below the mean of \$55,700 for all retiree households (Table 4, column 5). Middle-quintile households spend 13% on groceries, 17% on total housing, 14% on other necessities and 56% on discretionary expenses, which are similar to the overall mean budget shares reported in Table 4. Households in the lowest income quintile spend 40% less while those in the top income quintile spend 90% more than middle-income households. Poorer households spend greater budget shares on groceries, housing and other necessities, and lower budget shares on discretionary categories. For example, the poorest quintile spend 15% of their budget share on groceries and 46% on discretionary, compared with 12% and 57% respectively by the richest quintile. This is consistent with Engel's law, which posits that the proportion of income spent on food decreases as a household's income rises.

Appendix Table 2 replicates Table 5 for 2006/07. Again, we find the same patterns, low expenditures in the bottom half of the expenditure distribution, substantial expenditures in the top quarter of the distribution, and relatively narrow spreads in expenditures on groceries, other housing, household utilities, communications, and insurance.

Appendix Table 3 again replicates Table 5 for pre-retirement households. We find similar patterns with respect to the distribution of expenditures. Pre-retirement households have higher mean expenditures across all categories except for health and recreation and culture. The largest differences between the two groups are in categories such as groceries, rent, mortgage repayments on primary residence, air transport, and other transport. This is unsurprising as a greater proportion of pre-retirement households are renting or still paying off their mortgage. Pre-retirement households may also be making improvements to their primary residence to accommodate growing children. Additionally, pre-retirement households are more likely to be working and have children living at home which may explain a significant portion of the differences in expenditures, particularly on groceries and transport categories. The differences in expenditures between retiree and pre-retirement households can at least be partially explained by differences in housing tenure and household composition.

Our findings for retiree households in this section suggest a heavily right-skewed distribution for some categories of expenditures. This pattern is most evident for housing-related expenditures such as rent and mortgage repayments on primary residence. For these categories, we observe that at least three quarters of retiree households report zero expenditures, which is not surprising given that almost two-thirds of retiree households own their primary residence outright. While the strongest skew of the distribution is apparent for housing related expenses,

similar patterns are observed for some discretionary expenditure categories such as tobacco and alcohol, clothing, health, fuel, and air transport. These results suggest considerable inequalities in expenditures among retiree households.

4.2 Inequalities in expenditures

This section examines inequalities in the expenditures of retiree households. We analyse necessary expenditures and discretionary expenditures, as well as total income. Our reason for analysing necessary and discretionary expenditures rather than individual categories is due to the way that expenditure data are collected in the HES. For example, for groceries, households are asked to keep a diary of their expenditures for 7 days in the 2018/19 survey. Some households might not have any grocery purchases during those 7 days while others might have large purchases which might include irregularly purchased items, resulting in high annualised expenditures. Such lumpiness in expenditure data is likely to result in higher measured inequality than actually is the case. By aggregating over a number of categories, we expect to provide a more accurate measure of inequality, as households are likely to report expenditures on at least some of the categories in the aggregate group.

Figure 1 plots Lorenz curves for the three measures of expenditure and income. Expenditures on necessities are noticeably more equally distributed than total income and expenditures on discretionary goods (the Lorenz curve for necessary expenditures is closer to the line of perfect equality than the other two Lorenz curves). Inequality in income is greater than in expenditure because households tend to smooth consumption over time: lower-income households tend to borrow, draw down savings, or receive transfers, while higher-income households tend to save or give transfers. Furthermore, our income measure is gross (i.e., before taxes and compulsory payroll deductions are taken); the progressivity of the New Zealand tax system means that there is always greater inequality in gross income than in net income. There is greater inequality in necessary expenditures than in discretionary expenditures because by definition necessities are goods that people consume at all income levels and spending on them is less sensitive to income change.

An alternative method for assessing inequality is the Gini coefficient. The Gini coefficient can be calculated as the ratio of the area between the line of perfect equality and the Lorenz curve divided by the total area under the line of perfect equality. A higher Gini coefficient (the further is the Lorenz curve from the line of perfect equality) represents a greater level of inequality.

Table 7 shows the Gini coefficient for expenditure and income among retiree households. Inequality appears to trend up over time, with all measures displaying the greatest level of

inequality in 2018/19. In particular, the Gini coefficient for necessary expenditures and discretionary expenditures increases from 0.34 and 0.5 respectively in 2006/07 to 0.36 and 0.54 respectively in 2018/19. Meanwhile, the Gini coefficient for income increases from 0.4 in 2006/07 to 0.46 in 2018/19.

These increases in inequality may be partly due to changes in the survey methods. Specifically, from 2018/19 the expenditure diary period has been shortened to 7 days (from 14 days previously), and respondents are no longer asked to provide amounts for some income variables (wages and salaries; benefits; and other payments received from the New Zealand Government) as Statistics New Zealand is able to obtain these from administrative data sources. Nevertheless, rising inequalities are still apparent when 2018/19 is excluded.

In summary, this section finds that there is greater inequality in income than in necessary expenditure, but the greatest inequality is in discretionary expenditure. Moreover, it is apparent that inequality in expenditure and income among retiree households has tended to increase over the study period.

Figure 1: Lorenz curves of expenditure and income for retiree households

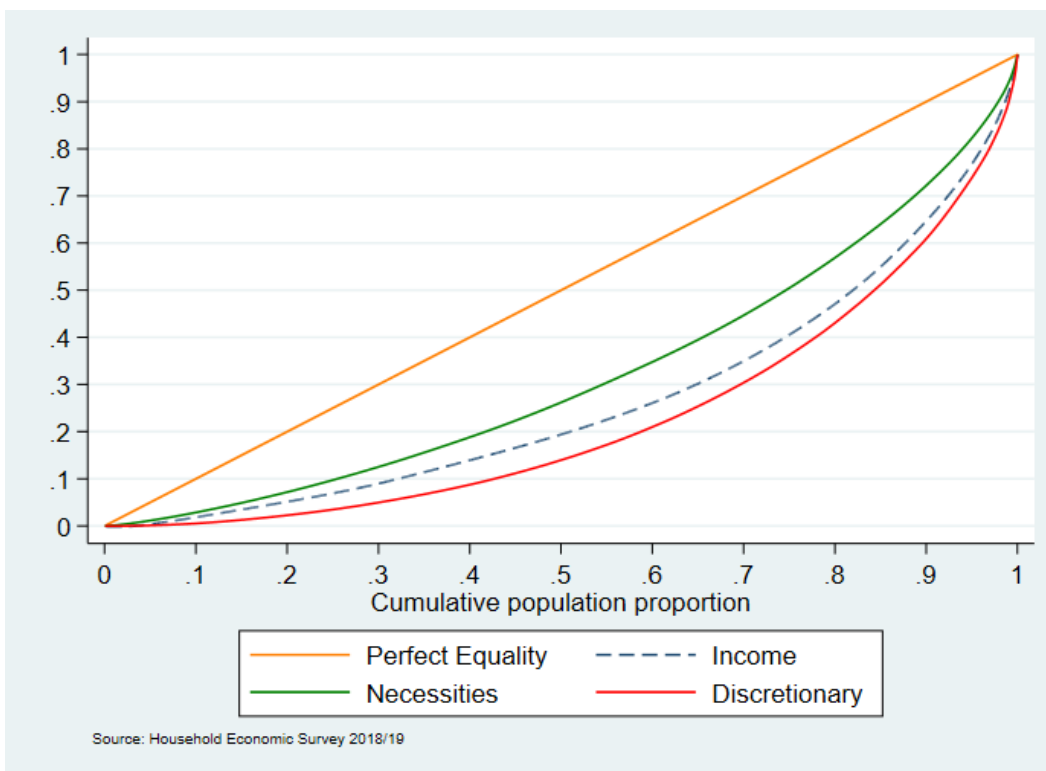


Table 7: Gini coefficients of expenditure and income for retiree households

	2006/07	2009/10	2012/13	2015/16	2018/19
Expenditure on necessities	0.344	0.309	0.364	0.339	0.356
Discretionary expenditure	0.502	0.465	0.483	0.506	0.538
Total income	0.401	0.437	0.416	0.415	0.457

Source: Household Economic Survey

4.3 Expenditure patterns across population groups

This section examines the extent to which expenditures for retiree households vary by key household characteristics such as ethnicity, age group, education, household composition, housing tenure, and location.

By age group

Table 8 reports mean and median expenditures by age group, defined based on the age of the oldest member in each retiree household. We examine three age groups: 65-74 (who make up 56% of retiree households), 75-84 (35%), and 85+ (9%). This enables us to infer how expenditures change as households transition through different phases in retirement, as they age and their health changes. The mean total expenditure is \$64,700 for households aged 65-74 and the mean for households aged 75-84 and aged 85+ are respectively 28% and 44% lower.

Table 8: Average household expenditures by age group – 2018/19

	65-74 (56%)		75-84 (35%)		85+ (9%)	
	Mean	Median	Mean	Median	Mean	Median
Total expenditure	64,676	48,413	46,614	34,757	36,432	27,594
Groceries	7,630	6,491	6,771	5,640	6,918	6,311
Food eaten away from home	2,404	1,140	1,982	639	1,781	452
Tobacco and alcohol	1,324	0	905	0	737	0
Clothing	2,237	0	1,507	0	702	0
Rent	2,114	0	1,740	0	2,252	0
Mortg. repayments on prim. res.	3,006	0	1,949	0	675	0
Other housing	6,837	3,466	5,420	3,162	4,290	3,446
Household utilities	2,255	2,017	2,164	1,957	1,844	1,680
Household contents	2,540	932	2,613	723	2,046	694
Health	2,597	477	2,421	773	1,775	258
Fuel	2,591	1,929	2,014	0	1,240	0
Air transport	3,359	0	1,540	0	801	0
Other transport	5,980	801	3,415	566	2,680	269
Communications	2,254	1,524	1,479	1,286	1,363	1,281
Recreation and culture	8,960	3,100	5,165	2,517	2,585	1,177
Insurance	4,124	2,843	2,943	2,231	2,636	1,622
Miscellaneous	4,465	1,597	2,586	690	2,107	574
Total housing	11,957	6,362	9,109	4,473	7,217	5,103
Total transport	11,929	4,794	6,969	2,786	4,721	557
Total necessities	28,220	22,771	22,465	18,040	19,978	16,122
Total discretionary	36,456	24,012	24,148	15,344	16,454	9,748

Source: Household Economic Survey

Note: See notes to Table 5.

Mean expenditures on almost all categories decrease with age, except for rent payments (highest mean is the 85+ age group) and household contents (highest mean is for the 75-84 age group). In relative terms, categories that have the largest differences in mean expenditure between the 65-74 age group and the older groups are mortgage repayments on primary residence (mean expenditure for the 75-84 age group and 85+ age group are respectively 35% and 78% lower than for the 65-74 age group), air transport (54% and 76% lower), other transport (43%

and 55% lower), and recreation and culture (42% and 71% lower). In absolute terms, categories with the largest differences in mean expenditure across age groups are other housing (means for the 75-84 and 85+ age groups are respectively \$1,400 and \$2,500 lower than for the 65-74 age group), air transport (\$1,800 and \$2,600 lower), recreation and culture (\$3,800 and \$6,400 lower) and miscellaneous (\$1,900 and \$2,400 lower).

With the exception of housing, categories with the largest differences in mean expenditure across age groups are discretionary. Compared with the 65-74 age group, mean necessary expenditure is 20% lower for the 75-84 age group and 29% lower for the 85+ age group. The corresponding differences are 34% and 55% respectively for mean discretionary expenditure.

Similar patterns are observed with median expenditures: median expenditures for the older age group are lower than for the 65-74 age group in all categories, except for health where median spending for the 75-84 age group is slightly higher than for the 65-74 age group. The median expenditure is zero for tobacco and alcohol, clothing, rent, and mortgage repayments on primary residence in all age groups, as less than half of households in each group report spending on these categories.

Compared with the 75-84 age group, households aged 85+ spend less across almost all categories, the largest differences being observed in discretionary categories. Mean expenditure on recreation and culture for the 85+ age group is \$2,600 lower than the 75-84 group, whereas the corresponding gap for the three transport categories combined (fuel, air transport, and other transport) is \$2,200 lower. Meanwhile, the differences between these two age groups in mean expenditures on necessities such as groceries, household utilities, communications, and insurance are modest.

Overall, on average, older retiree households have lower expenditures than younger retiree households, and the differences are much larger for discretionary categories than for necessary expenditures. While these data are cross-sectional rather than longitudinal, we can infer from these patterns that as retirees age, they spend less, especially on discretionary categories such as clothing, transport, and recreation and culture. As people age, their health tends to deteriorate, and they become less mobile. They are also more likely to experience widowhood (Blanner et al., 2021) and move to less-independent living such as care services (Broad et al., 2015). The costs associated with this shift are not captured by the HES, however the data show that people in older age groups generally have different needs than others.

By household composition

Table 9 shows mean and median expenditures by household composition. We distinguish four composition groups: singles living alone (who make up 33% of retiree households), couples only

(47%), singles living with others (15%), and couples living with dependent or adult children (6%). The mean total expenditure is \$30,700 for singles living alone, \$65,100 for couples only, \$69,400 for singles living with others, and \$85,000 for couples living with children.

Table 9: Average household expenditures by household composition – 2018/19

	Single living alone (33%)		Couple only (47%)		Single living with others (15%)		Couple living with children (6%)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total expenditure	30,698	24,953	65,051	48,056	69,403	60,866	85,018	69,541
Groceries	3,751	3,266	8,089	7,582	10,886	9,735	10,828	9,684
Food eaten away from home	1,048	313	2,369	1,242	3,146	1,325	4,780	2,455
Tobacco and alcohol	653	0	1,266	0	1,389	0	1,897	585
Clothing	858	0	2,123	0	2,313	0	3,800	1,031
Rent	2,262	0	1,161	0	3,915	0	2,286	0
Mortgage repayments on primary residence	493	0	1,819	0	7,508	0	4,937	0
Other housing	4,135	2,777	7,577	3,830	5,553	3,286	6,671	3,358
Household utilities	1,531	1,318	2,357	2,083	2,706	2,589	3,115	2,806
Household contents	1,215	262	3,270	1,108	2,571	1,191	3,632	1,977
Health	1,708	98	2,964	1,007	2,134	139	3,425	1,444
Fuel	1,104	0	2,521	1,552	3,517	2,160	3,446	3,013
Air transport	1,361	0	3,296	0	1,404	0	4,970	0
Other transport	2,295	203	6,572	931	3,384	712	7,692	1,684
Communications	1,230	1,132	1,895	1,464	3,314	1,636	2,041	1,645
Recreation and culture	3,391	1,334	9,866	3,223	4,568	2,814	10,997	5,051
Insurance	2,182	1,657	4,407	3,040	3,558	2,410	4,632	3,059
Miscellaneous	1,482	359	3,501	1,242	7,536	3,489	5,871	4,013
Total housing	6,890	4,853	10,556	6,009	16,976	8,794	13,893	7,549
Total transport	4,760	1,186	12,389	5,160	8,305	5,585	16,108	11,057
Total necessities	15,583	13,610	27,305	22,361	37,440	31,266	34,509	30,779
Total discretionary	15,115	8,523	37,747	24,461	31,962	25,103	50,509	39,745

Source: Household Economic Survey

Note: See notes to Table 5.

Couples living with children have the highest mean expenditure on most groups, except for rent, mortgage repayments on primary residence, communications, other loan repayments (where the highest mean is for singles living with others) and other housing (where the highest mean is for couples only). By contrast, singles living alone have the lowest mean expenditure in all groups except for rent, where on average they spend \$1,100 more than couples only, reflecting that singles are more likely to rent while couples are more likely to own their primary residence.

Even though mean total expenditure is similar between couples only and singles living with others, the latter tend to spend more on necessities and less on discretionary categories than the former. Singles living with others also spend less than couples living with children on all categories except groceries, rent, mortgage repayments on primary residence, communications, and other loan repayments. This suggests that singles living with others are more likely to rent or own their primary residence with a mortgage, while couples living with children are more likely to own outright. The largest differences in expenditures between single-based households and couple-

based households are in transport and recreation and culture, both of which are discretionary categories.

At the median level, couples with children spend the most in all categories, except for other housing (where the highest median is for singles living with others) while singles living alone spend the least. The median expenditure is zero for tobacco and alcohol, clothing, rent, mortgage repayments on primary residence, and other loan repayments for singles living alone, couples only, and singles living with others. Although their median expenditure is zero for the last three categories, couples living with children report positive median expenditures on tobacco and alcohol and clothing.

Since 'single living with others' and 'couple living with children' households are likely to contain non-retirees we will concentrate on 'single living alone' and 'couple only' households. In per capita terms, couple-only household spend \$32,500 per annum, compared with \$30,700 for singles living alone. On average, per capita expenditure for couples is about 23% less than for singles on total housing, household utilities, and communications, all of which are necessities and are areas where economies of scale in shared living are expected. By contrast, mean per capita expenditure for couples is higher for recreation and culture (45%), household contents (35%), total transport (30%) and clothing (24%), all of which are discretionary categories. This suggests that couple-only households spend more in per capita terms because they seek higher standards of living rather than due to diseconomies of scale in shared living. Section 5 will revisit this issue.

Appendix Table 4 presents mean and median expenditures for singles living alone, disaggregated by sex. On average male retirees living alone spend \$32,300 per annum, compared with \$30,100 for female retirees living alone. Single female retirees spend substantially less than their male counterparts on food eaten away from home, tobacco and alcohol, transport, and recreation and culture while spending more on clothing, household utilities, health, and miscellaneous expenditures. These differences are consistent with gender norms, but might also suggest that male retirees tend to be younger, reflecting higher life expectancies for women. The two groups spend similar amounts on groceries, household contents, communications, insurance, and total housing. Not surprisingly, large gender differences in expenditures tend to be for discretionary categories, whereas no significant differences exist for necessary expenditures.

By housing tenure

Given that on average retiree households spend 19% of their budget on housing (section 4.1), we expect expenditures to differ depending on whether a household owns or rents their primary residence. We distinguish four groups based on housing tenure: 66% own their primary residence outright, 14% of households own their primary residence with a mortgage, 14% pay rent and 5%

rent for free. As reported in Table 10, on average households who own their primary residence spend more in total than those who rent. The mean total expenditure is \$55,800 for outright home owners, \$72,500 for mortgaged home owners, \$41,400 for rent-paying renters and \$48,800 for rent-free renters.

Table 10: Average household expenditures by housing tenure – 2018/19

	Owned outright (66%)		Owned with a mortgage (14%)		Paying rent (14%)		Rent free (5%)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total expenditure	55,785	39,677	72,472	64,827	41,382	31,673	48,752	33,867
Groceries	7,187	6,395	8,871	6,653	6,280	4,635	6,477	5,965
Food eaten away from home	2,215	958	2,623	1,269	1,440	347	2,956	1,620
Tobacco and alcohol	1,157	0	1,040	0	1,120	0	921	0
Clothing	2,007	0	2,146	0	840	0	1,666	0
Rent	27	0	484	0	13,124	10,358	30	0
Mortg. repayments on primary residence	63	0	16,255	10,216	179	0	175	0
Other housing	7,094	3,814	5,688	3,554	1,796	0	6,782	6,406
Household utilities	2,237	1,999	2,572	2,440	1,676	1,354	1,882	1,685
Household contents	2,768	903	2,359	1,115	1,384	372	3,022	1,490
Health	2,635	732	3,229	795	1,046	0	2,050	1,031
Fuel	2,319	0	2,933	2,062	1,521	0	1,791	0
Air transport	2,941	0	2,579	0	486	0	2,007	0
Other transport	5,349	677	4,231	758	2,039	327	6,721	556
Communications	1,982	1,413	1,900	1,549	1,623	1,098	1,623	1,470
Recreation and culture	8,485	2,702	4,876	3,110	2,751	1,329	6,753	5,407
Insurance	3,927	2,682	4,845	3,133	1,166	488	2,231	1,348
Miscellaneous	3,392	1,048	5,841	2,586	2,910	613	1,666	572
Total housing	7,184	3,858	22,426	15,418	15,099	11,049	6,987	6,406
Total transport	10,609	4,310	9,743	4,836	4,046	1,590	10,519	3,810
Total necessities	22,517	18,571	40,615	35,912	25,845	21,759	19,199	15,179
Total discretionary	33,268	18,693	31,856	25,001	15,537	9,350	29,553	20,334

Source: Household Economic Survey

Note: See notes to Table 5.

In general, households who do not make mortgage or rent payments spend substantially more on other categories than those who do. Compared with mortgaged home owners, outright homeowners tend to spend more on housing excluding rent and mortgage repayments (25% more), household contents (17%), and recreation and culture (74%), which indicates that households put off home improvements and discretionary expenses while they pay down their mortgage. On average, rent-free renters tend to spend more than those who pay rent on most categories other than rent. Indeed, on average rent-free renters spend about twice as much as rent payers on food eaten away from home, clothing, other housing, household contents, health, total transport, and recreation and culture. These results suggest that reduced housing costs enable households to spend more on discretionary categories.

Comparing outright home owners with rent-free renters and mortgaged home owners with rent payers, we find that on average home owners spend more than renters in most categories,

especially on recreation and culture and miscellaneous, suggesting that home owners tend to have higher standards of living than renters.

Most housing tenure groups report zero median expenditures on tobacco and alcohol, clothing, rent, mortgage repayments on primary residence, fuel, and air transport. At the median level, rent-free renters tend to spend more than rent payers and mortgaged home owners spend more than rent payers on most categories other than rent. Even though outright home owners spend more than rent-free renters at the mean level on most categories, the same cannot be said at the median level. This suggests that the higher spending among outright home owners at the mean level is driven by a few high spenders in that group.

By location

Table 11 contains mean and median expenditures by region. We classify households into five broad regions: Auckland (where 27% of retiree households live), Wellington (12%), rest of North Island (36%), Canterbury (12%), and rest of South Island (13%).¹⁵ The mean total expenditure is \$64,500 for Auckland, \$66,100 for Wellington, \$49,800 for the rest of the North Island, \$45,900 for Canterbury, and \$53,100 for the rest of the South Island.

Compared with retiree households in Auckland, those in Wellington spend substantially more on clothing (54%) and total transport (17%), substantially less on total housing (9%), and similar on other categories. On average, retiree households in the rest of the North Island and in both regions of the South Island spend less than those in Auckland in most categories, especially on food eaten away from home, transport, recreation and culture, and miscellaneous.

At the median level, Wellington retiree households spend more than their Auckland counterparts in all but two categories (household contents and health) whereas retiree households in other regions spend less in most categories. The median expenditure is zero for tobacco and alcohol, clothing, rent, mortgage repayments on primary residence, and air transport in all regions, as less than half of households in each region report spending on these categories.

Appendix Table 5 also examines geographic differences in expenditures, but by level of urbanisation. Two fifths of retiree households live in a major urban area, 44% in an other-urban area and 16% in a rural area. On average retiree households in major urban areas spend \$63,500, compared with \$47,200 in other urban areas and \$59,500 in rural areas. At both the mean level and median level, retiree households in other urban areas spend less while those in rural areas spend more than their major-urban counterparts in most categories.

¹⁵ Statistics New Zealand uses this breakdown for its regional CPI indices.

Table 11: Average household expenditures by region – 2018/19

	Auckland (27%)		Wellington (12%)		Rest of North Island (36%)		Canterbury (12%)		Rest of South Island (13%)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total expenditure	64,481	47,350	66,115	47,657	49,796	38,037	45,867	35,009	53,140	38,034
Groceries	7,874	6,387	7,852	6,628	6,834	5,894	6,452	6,000	7,338	6,255
Food eaten away from home	2,832	1,041	2,558	1,356	1,679	719	2,453	1,155	1,764	979
Tobacco and alcohol	1,253	0	1,029	0	1,078	0	997	0	1,177	0
Clothing	1,975	0	3,036	0	1,354	0	2,037	0	1,608	0
Rent	2,882	0	1,963	0	1,949	0	1,238	0	1,013	0
Mortg. repayments on prim. residence	4,026	0	1,994	0	1,958	0	1,862	0	1,303	0
Other housing	6,886	3,490	8,570	4,421	5,241	3,282	4,557	2,924	5,942	3,278
Household utilities	2,090	1,830	2,216	1,948	2,184	2,033	2,368	2,062	2,198	1,951
Household contents	2,746	824	3,007	607	2,605	935	2,170	903	1,703	761
Health	2,685	773	2,233	325	2,243	431	1,760	139	3,403	1,002
Fuel	2,401	0	2,527	0	2,299	1,849	1,382	0	2,423	0
Air transport	3,438	0	3,634	0	1,631	0	1,937	0	2,279	0
Other transport	4,866	593	6,412	756	4,435	623	2,826	582	5,704	566
Communications	2,262	1,423	2,268	1,673	1,658	1,420	1,658	1,342	1,692	1,298
Recreation and culture	7,704	2,680	8,455	3,523	6,443	2,333	5,692	2,521	7,203	2,412
Insurance	3,676	2,179	3,692	2,508	3,525	2,384	3,855	3,026	3,139	2,234
Miscellaneous	4,883	1,457	4,670	1,588	2,681	892	2,625	1,169	3,252	634
Total housing	13,794	6,535	12,526	7,216	9,147	5,405	7,657	3,763	8,259	4,378
Total transport	10,705	4,169	12,573	4,753	8,364	3,400	6,145	2,822	10,406	5,141
Total necessities	29,697	23,035	28,553	21,859	23,348	19,969	21,990	18,244	22,624	19,493
Total discretionary	34,783	21,170	37,561	24,542	26,448	16,489	23,878	14,088	30,516	15,902

Source: Household Economic Survey

Note: See notes to Table 5.

By other characteristics

Appendix Tables 6-11 respectively present mean and median expenditures by ethnicity, migrant status, employment status, education level, income quintile and equivalised income quintile. Our key findings are:

- On average Māori retiree households spend 27% less than non-Māori retiree households (Appendix Table 6). Māori households spend less in all but three categories (groceries, tobacco and alcohol, and rent). This suggests that Māori retirees live in larger households and are more likely to rent than their non-Māori counterparts. At the median, Māori households spend less than non-Māori households in all categories other than fuel.¹⁶
- Mean total expenditure is very similar between migrant and non-migrant retiree households (Appendix Table 7). On average migrant households spend substantially more on total housing and household contents, and substantially less on recreation and culture and other transport.
- At the mean and median, across all categories, retiree households where at least one member is still in employment spend substantially more than retiree households where no one is in employment (Appendix Table 8). On average 'working' retiree households spend 75% more. The largest absolute differences are on total housing (\$6,900, with a difference of \$4,300 in mortgage repayments alone), total transport (\$5,700), miscellaneous (\$4,100), and groceries (\$3,700). Thus, households who are working in retirement appear to be those that are large (high groceries expenditure) or are still paying off their home mortgage.
- On average retiree households with the highest education level (postgraduate) spend more than twice those with no qualification (Appendix Table 9). Most expenditures increase as education level increases, the exceptions to this are household utilities which remain similar and mortgage payments and rent which tend to decrease as education increases. Retiree households with no qualification spend the least on all categories except mortgage repayments on primary residence and rent where their mean expenditures are \$100-\$1,800 higher than all other groups. Retiree households with a postgraduate degree spend 3-4 times as much as those without a qualification on clothing, total transport, and recreation and culture.

¹⁶ The relatively small sample size precludes a finer breakdown of ethnicity. Given the small sample of Māori households in any one year, we pooled all 5 survey years to create a larger sample. Results obtained from the pooled sample are similar to those reported in Appendix Table 6.

- On average retiree households in the top income quintile spend over three times as much as those in the bottom quintile (Appendix Table 10). The top quintile spend 4-5 times more than the bottom quintile on food eaten away from home, clothing, total transport, recreation and culture, and miscellaneous.
- A similar, albeit less pronounced, pattern is observed across equivalised income quintile (Appendix Table 11).¹⁷ On average retiree households in the top equivalised income quintile spend almost three times as much as those in the bottom quintile.
- Richer households (non-Māori, working, higher education, higher income quintile) spend substantially more on discretionary categories like transport and recreation and culture.
- The median expenditure is zero for tobacco and alcohol, clothing, rent, mortgage repayments on primary residence, and air transport in most groups.

4.4 Regression analysis

Section 4.3 has explored how expenditures vary across demographic characteristics in isolation. For example, we compare expenditures between retiree households aged 65-74 and those aged 75-84, without taking into account the possibility that household composition might be very different between the two groups. This section examines how expenditures vary across demographic characteristics, holding other characteristics constant. We use an Ordinary Least Squares regression, where total household expenditure is expressed as a function of total household income and key demographic characteristics. Both expenditure and income enter the regression in natural logarithms to address heteroskedasticity.

The estimation results are presented in Table 12. In column (1), income is the only covariate. Since expenditure and income are in logarithms, the coefficient (0.196) on income means that the elasticity of expenditure with respect to income is 0.22 ($= e^{0.196} - 1$): for every 10% increase in total household income we expect total expenditure to increase by about 2.2%.

Column (2) additionally controls for household demographic characteristics. In this specification the estimated income elasticity is reduced to 0.07, which means that part of the income elasticity estimated in specification (1) is due to the fact that income is correlated with household characteristics. We find that most of the differences in expenditures across demographic groups observed in section 4.3 persist, but with reduced magnitudes. This is because unlike the cross-tabular analysis in section 4.3, the regression model also controls for other

¹⁷ Incomes are equivalised using the modified OECD scale. This scale assigns a value of 1.0 to the first adult in a household, 0.5 to each additional adult (anyone aged 15 or older) and 0.3 to each child.

characteristics. For example, Table 8 shows that the mean total expenditures for retiree households aged 75-84 and aged 85+ are respectively 28% and 44% lower than for households aged 65-74. Yet the regression analysis shows that the corresponding estimates are 11% ($e^{-0.101} - 1$) and 22% lower. Thus, some of the differences in expenditure across age groups observed in section 4.3 are due to differences in other characteristics.

Interestingly, the estimates on housing tenure are not statistically significant for both groups of renters. This is likely due to the small sample sizes for these tenure groups, resulting in high standard errors and thus insignificant coefficients. Whether a household lives in an other-urban or rural area are insignificant predictors of expenditure. This is because urbanisation indicators are likely very highly correlated with regions, which are already controlled for in the model.

A similar pattern is observed when we pool together observations from all HES years (column 3), except that estimates in this specification have higher statistical significance. This is because the larger sample size improves the precision of the estimates: while the point estimates are very similar between columns (2) and (3), standard errors in the latter are about half the size their counterparts in the former. The results on housing tenure now indicate that both rent payers and rent-free households spend significantly less than outright home owners.

Overall, the regression analysis confirms that retiree household expenditure varies significantly across demographics. The most important factors for predicting expenditures are income, household composition, age group, education level, ethnicity and employment status.

Table 12: Regression estimates of the correlates of household expenditure

	2018/19, income only (1)	2018/19, all controls (2)	Pooled all years, all controls (3) [#]
Total income (log)	0.196*** (0.0140)	0.0716*** (0.0133)	0.143*** (0.00843)
Māori		-0.232*** (0.0662)	-0.232*** (0.0323)
Migrant		-0.154*** (0.0437)	-0.0662*** (0.0192)
In employment		0.296*** (0.0455)	0.248*** (0.0204)
75-84		-0.101** (0.0412)	-0.123*** (0.0181)
85+		-0.250*** (0.0673)	-0.262*** (0.0292)
Some school		0.169*** (0.0541)	0.159*** (0.0231)
Post-school		0.292*** (0.0465)	0.222*** (0.0202)
Bachelor's degree		0.324*** (0.0752)	0.403*** (0.0371)
Postgraduate degree		0.474*** (0.0729)	0.452*** (0.0360)
Couple only		0.525*** (0.0437)	0.428*** (0.0192)
Single living with others		0.523*** (0.0678)	0.443*** (0.0303)
Couple living with children		0.663*** (0.102)	0.554*** (0.0480)
Owned with a mortgage		0.136** (0.0568)	0.159*** (0.0265)
Paying rent		-0.0538 (0.0522)	-0.0520** (0.0242)
Rent free		0.0242 (0.0942)	-0.0592 (0.0540)
Wellington		0.0521 (0.0648)	-0.00182 (0.0284)
Rest of North Island		-0.0970* (0.0580)	-0.0587** (0.0259)
Canterbury		-0.136** (0.0675)	-0.118*** (0.0275)
Rest of South Island		-0.121* (0.0695)	-0.0646** (0.0293)
Other urban		-0.0412 (0.0471)	-0.000110 (0.0194)
Rural		0.0458 (0.0642)	0.00632 (0.0308)
Constant	8.444*** (0.152)	9.336*** (0.146)	8.570*** (0.0903)
Observations	1,152	1,152	4,686
Adjusted R-squared	0.144	0.399	0.441

Source: Estimated from the Household Economic Survey

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. #Year dummies are included as controls in this specification.

5 Subjective wellbeing

Expenditure is one measure of wellbeing. On the one hand, a higher level of expenditure means a higher level of wellbeing because expenditure generally represents consumption, and hence living standards. On the other hand, expenditure also indicates costliness, thus a high level of expenditure might be associated with a lower level of wellbeing. This section examines measures of subjective wellbeing for a better understanding of the wellbeing of retiree households.

Five measures of wellbeing are considered: material wellbeing index (MWI), financial strain, severe financial strain, income adequacy, and life satisfaction. Following Perry (2021), MWI is defined as made up of 24 items providing direct information on the day-to-day actual living conditions that households experience. They are about the basics such as food, clothes, accommodation, electricity, and so on, and also about the financial ease with which households can purchase and consume non-essentials that are commonly aspired to. Each item is scored from 0 to 2. The raw MWI scores range from 0 to 43, with higher scores indicating higher material living standards. For convenience, the MWI has been rescaled to 0-35, with any raw scores of 8 or less being recoded to 0.¹⁸

‘Financial strain’ and ‘severe financial strain’ are based on the two items categorised as measuring financial strain within the MWI. These two items are ‘have you been behind on utilities in the last 12 months’ and ‘have you been behind on car registration, WOF or insurance in the last 12 months’. Respondents could answer from three options ‘not at all’, ‘once’, and ‘more than once’. A household is defined as experiencing financial strain if they answer ‘once’ or ‘more than once’ to either question, and experiencing severe financial strain if they answer ‘more than once’ to either question.

Income adequacy is a dummy which is equal to 1 if the household answers ‘only just enough’ or ‘more than enough’ to the question ‘how well does your total income (you and your partner’s combined income) meet your every-day needs for such things as accommodation, food, clothing and other necessities?’ Life satisfaction is a dummy which is equal to 1 if the household answers ‘satisfied’ or ‘very satisfied’ to the question ‘how do you feel about your life right now’.¹⁹

The mean MWI among retiree households in 2018/19 is 26.1 (out of 35), 8% of households report financial strain, 5% report severe financial strain, about two thirds report having adequate income to meet every-day needs and 85% report being satisfied with life. Table 13 shows how

¹⁸ According to Perry (2021), typically only 1-2% are in this category.

¹⁹ Respondents answer on a five-point scale from ‘very satisfied’ to ‘very dissatisfied’. ‘Don’t know’ and ‘refused’ are also possible options.

these measures vary across household characteristics. Overall these measures are consistent with each other: groups that report higher mean MWI also report higher income adequacy and life satisfaction and lower financial strain. For example, compared to non-Māori, Māori households report lower mean MWI (22.2 vs. 26.5), are considerably less likely (74% vs. 86%) to be satisfied with life and more likely to experience financial strain (26% vs. 6%).

With regard to the relationship between expenditure and subjective wellbeing, two patterns emerge. In some cases, groups that report higher expenditures also report higher subjective wellbeing. For example, section 4.3 finds that households in the top equivalised income quintile spend three times as much as those in the bottom quintile. Consistent with this, Table 13 shows that households in the top equivalised income quintile have higher subjective wellbeing across all five measures.

However, in many cases, higher expenditures do not necessarily mean higher subjective wellbeing. For example, despite having much lower expenditure (Table 8), older retiree households have similar mean MWI, are similarly likely to report having adequate incomes or being satisfied with life, and are less likely to report financial and severe financial strain than younger retirees.

Households who do not make mortgage or rent payments have higher wellbeing than those who do. Compared with mortgaged home owners, outright homeowners have higher mean MWI, are much less likely to report financial strain or severe financial strain, and are more likely to report income adequacy or life satisfaction. Similarly, rent-free households report much higher wellbeing than rent payers. Comparing outright home owners with rent-free renters and mortgaged home owners with rent payers, we find that home owners have similar or higher wellbeing in all five measures. These results confirm the finding based on discretionary expenditures in section 4.3 that reduced housing costs allow retiree households to have higher standards of living, and that home owners tend to have higher standards of living than renters. Across the four groups of housing tenure, rent-paying retirees have the lowest wellbeing.

Despite having slightly higher expenditure than couple-only households, singles living with others report the lowest mean MWI, they are more likely to report financial and severe financial strain, less likely to report being satisfied with life than any other group, and only 50% report having adequate income for every-day needs. Even though singles living alone and couple-only households have similar per-capita expenditure (Table 9), the former have lower mean MWI (25.3 vs. 27.8), are less likely to report having adequate income (65% vs. 73%) or being satisfied with life (85% vs. 90%), and are twice as likely to report financial strain or severe financial strain as the latter.

Comparing the two groups of couple-based households, we find that couple-only households have higher mean MWI and are more likely to report income adequacy and life satisfaction. This is consistent with the finding (top part of Table 13) that compared with retiree households without a child, households with one report much lower mean MWI (21.1 compared to 26.3), are more than three times as likely to report financial and severe financial strain while much less likely to report having adequate income or being satisfied with life. Interestingly, while singles living alone report lower subjective wellbeing than couples-only households, they have similar wellbeing to couples living with children and much higher wellbeing than singles living with others.

Wellbeing is also higher for households with higher education and higher income, yet the relationships are not linear. The differences are starkest when comparing households with a postgraduate degree to those with no qualification, and the highest income quintile with the lowest quintile. There are no clear differences in average wellbeing across regions or urban/rural sectors.

Thus, higher expenditures do not always translate into higher standards of living. This is also seen in that subjective wellbeing does not have a clear trend despite an upward trend in household income and expenditure over the study period. For example, in 2012/13 12% of retiree households report financial strain and 83% report being satisfied with life (Appendix Table 12), compared with 8% and 83% in 2015/16 (Appendix Table 13) and 8% and 85% respectively in 2018/19. The results on subjective wellbeing, especially those disaggregated by housing tenure and household composition, suggest that expenditure on discretionary categories is a better measure of wellbeing than total expenditure.

Pre-retirement households (Appendix Table 14) are more than twice as likely to report financial strain and severe financial strain while less likely to report income adequacy and life satisfaction. The largest difference between the retiree households and pre-retirement households is in the role of employment in wellbeing. Compared with retiree households that have a working member, retiree households without a working member have slightly lower mean MWI (25.7 vs. 26.9) but the two groups are very similar in terms of financial strain prevalence, income adequacy and life satisfaction. By contrast, pre-retirement households that do not have a working member have markedly lower mean MWI (16.1 vs. 25.7) and are three times as likely to report financial strain (43% vs. 16%) or severe financial strain (34% vs. 10%). This suggests that non-employment is more of a risk for pre-retirement households but it is more of a lifestyle choice for retiree households.

Table 13: Wellbeing of retiree households – 2018/19

	Material wellbeing index	Financial strain	Severe financial strain	Adequate income	Satisfied with life
All retiree households	26.1	0.082	0.048	0.665	0.846
Non-Māori	26.5	0.062	0.036	0.686	0.857
Māori	22.2	0.260	0.160	0.460	0.740
Non-migrant	26.2	0.080	0.046	0.679	0.854
Migrant	25.6	0.087	0.060	0.633	0.827
Not in employment	25.5	0.084	0.054	0.656	0.846
In employment	26.9	0.080	0.040	0.680	0.845
No children	26.3	0.074	0.042	0.677	0.856
Has children	21.1	0.231	0.154	0.462	0.654
<i>Age group</i>					
65-74	25.8	0.104	0.061	0.655	0.853
75-84	26.2	0.057	0.028	0.665	0.824
85+	27.1	S	S	0.711	0.889
<i>Education (highest of aged 65+)</i>					
No qualification	24.1	0.128	0.083	0.577	0.808
Some school	26.6	0.084	0.063	0.716	0.884
Post-school	26.8	0.060	0.030	0.689	0.850
Bachelor's degree	27.4	S	S	0.711	0.868
Postgraduate degree	28.5	S	S	0.762	0.905
<i>Composition</i>					
Single living alone	25.3	0.086	0.043	0.654	0.852
Couple only	27.8	0.034	0.021	0.725	0.897
Single living with others	22.7	0.230	0.162	0.500	0.689
Couple living with children	25.4	S	S	0.690	0.828
<i>Housing tenure</i>					
Owned outright	28.0	0.036	0.021	0.742	0.897
Owned with a mortgage	24.1	0.153	0.069	0.556	0.750
Paying rent	20.3	0.264	0.167	0.431	0.750
Rent free	27.3	S	S	0.680	0.800
<i>Region</i>					
Auckland	25.3	0.119	0.074	0.630	0.815
Wellington	26.3	0.082	0.066	0.705	0.852
Rest of North Island	25.8	0.078	0.045	0.665	0.855
Canterbury	27.4	S	S	0.707	0.879
Rest of South Island	26.7	S	S	0.657	0.851
<i>Urbanisation</i>					
Major urban	25.9	0.104	0.065	0.642	0.831
Other urban	25.9	0.069	0.041	0.677	0.862
Rural	27.1	0.062	S	0.691	0.852
<i>Income quintile</i>					
1 (poorest)	23.9	0.090	0.050	0.600	0.850
2	24.9	0.090	0.050	0.600	0.820
3	26.4	0.101	0.061	0.626	0.889
4	27.7	0.060	S	0.760	0.860
5 (richest)	27.8	0.080	0.070	0.750	0.810
<i>Equivalent income quintile</i>					
1 (poorest)	23.0	0.130	0.080	0.550	0.800
2	25.4	0.059	0.039	0.578	0.853
3	25.8	0.122	0.051	0.653	0.867
4	27.0	0.070	0.050	0.720	0.850
5 (richest)	28.9	0.040	S	0.818	0.859

Source: Household Economic Survey

Note: S: Suppressed due to low sample counts

6 Conclusion

Using household-level data from the HES, this paper finds that in 2018/19 retiree households spend on average \$55,700 per annum, of which 13% is on groceries, 19% on housing, 14% on other necessities (household utilities, communications, and insurance), and the remaining 54% on discretionary expenses. Household expenditure patterns differ significantly across demographic groups and income levels. On average, singles living alone spend \$30,700 per annum whereas couple-only households spend \$65,100 per annum. As retiree households age, they spend less, especially on discretionary categories such as clothing, transport, and recreation and culture.

We find that higher expenditures do not always translate into higher standards of living. This is especially clear when comparing mortgaged home owners with outright home owners, rent-paying renters with rent-free renters, and singles living with others with singles living alone or couple-only households. Subjective wellbeing is higher for retiree households who have higher qualifications, own their home, have higher incomes, live with their partner and have no dependent children, and is the lowest for rent-paying renters, single retirees living with others and Māori households. The results on subjective wellbeing suggest that expenditure on discretionary categories is a better measure of wellbeing than total expenditure. Even though total household income and expenditure improved over the study period (2006/07 to 2018/19), subjective wellbeing tends to fluctuate from year to year.

Retiree households are more likely to report adequacy of income and life satisfaction and less likely to report financial strain than pre-retirement households. Pre-retirement households that do not have a working member have markedly lower wellbeing than those who do, while there is no material difference between the two groups among retiree households. This suggests that non-employment is more of a risk for pre-retirement households but it is more of a lifestyle choice for retiree households.

One major limitation with our study is that the number of retiree households in each HES Expenditure survey is relatively small. This precludes detailed disaggregated analysis, such as a fine breakdown by ethnicity. Research interested in disaggregated analysis should pool all available survey years, especially when HES 2021/22 is available, to get a higher statistical power. The relationships between wealth holdings and wellbeing would be an interesting avenue for research; the extensive data on wellbeing, assets and liabilities in the HES can be used to better understand the wellbeing of retiree households.

References

- Aguiar, M., & Hurst, E. (2004). *Consumption vs. Expenditure* (Working Paper No. 10307). National Bureau of Economic Research. <https://doi.org/10.3386/w10307>
- Aguiar, M., & Hurst, E. (2008). *Deconstructing Lifecycle Expenditure* (Working Paper No. 13893). National Bureau of Economic Research. <https://doi.org/10.3386/w13893>
- Bahizi, Pierre. (2003). *Retirement expenditures for Whites, Blacks and persons of Hispanic origin*.
- Banerjee, S. (2012). *Expenditure Patterns of Older Americans, 2001-2009* (SSRN Scholarly Paper No. 2007190).
- Banerjee, S. (2014). *How Does Household Expenditure Change With Age for Older Americans?* (SSRN Scholarly Paper No. 2498185).
- Banks, J., Blundell, R., Levell, P., & Smith, J. P. (2016). *Life-Cycle Consumption Patterns at Older Ages in the US and the UK: Can Medical Expenditures Explain the Difference?* (Working Paper No. 22513). National Bureau of Economic Research. <https://doi.org/10.3386/w22513>
- Banks, J., Blundell, R., Oldfield, Z., & Smith, J. P. (2007). *Housing Price Volatility and Downsizing in Later Life* (Working Paper No. 13496). National Bureau of Economic Research. <https://doi.org/10.3386/w13496>
- Banks, J., Blundell, R., & Tanner, S. (1998). Is there a retirement-savings puzzle? *American Economic Review*, 88(4), 769–788.
- Barrett, G., & Brzozowski, M. (2010). *Involuntary Retirement and the Resolution of the Retirement-Consumption Puzzle: Evidence in Australia*.
- Battistin, E., Brugiavini, A., Rettore, E., & Weber, G. (2007). *The Retirement Consumption Puzzle: Evidence from a Regression Discontinuity Approach* (SSRN Scholarly Paper No. 1031912). <https://doi.org/10.2139/ssrn.1031912>
- Becker, G. S. (1965). A Theory of the Allocation of Time. *The Economic Journal*, 75(299), 493–517. <https://doi.org/10.2307/2228949>
- Blanner, C., Elliott, A., Hjorth, P., Søndergaard, J., Mattisson, C., & Andersen, K. (2021). Experiences of becoming widowed in old age – a cross-countries study with qualitative interviews from Denmark and quantitative measures of association in a Swedish sample. *International Journal of Qualitative Studies on Health and Well-Being*, 16(1), 1871181. <https://doi.org/10.1080/17482631.2020.1871181>
- Broad, J. B., Ashton, T., Gott, M., McLeod, H., Davis, P. B., & Connolly, M. J. (2015). Likelihood of residential aged care use in later life: A simple approach to estimation with international comparison. *Australian and New Zealand Journal of Public Health*, 39(4), 374–379.
- Butrica, B. A., Goldwyn, J. H., & Johnson, R. W. (2005). *Understanding Expenditure Patterns in Retirement* (SSRN Scholarly Paper No. 1148888). <https://doi.org/10.2139/ssrn.1148888>

- Hori, M., & Murata, K. (2014). *Is there a retirement consumption puzzle in Japan? Evidence based on panel data on households in the agricultural sector*. Institute of Economic Research, Hitotsubashi University.
- Hurd, M., & Rohwedder, S. (2003). *The Retirement-Consumption Puzzle: Anticipated and Actual Declines in Spending at Retirement* (Working Paper No. 9586). National Bureau of Economic Research. <https://doi.org/10.3386/w9586>
- Hurst, E. (2007). Understanding Consumption in Retirement: Recent Developments. *Wharton Pension Research Council Working Papers*.
- Hyslop, D., Le, T., Maré, D. C., & Stillman, S. (2019). *Housing markets and migration – Evidence from New Zealand (19_14; Working Papers)*. Motu Economic and Public Policy Research. https://ideas.repec.org/p/mtu/wpaper/19_14.html
- Kurre, J. A. (2003). Is The Cost Of Living Less In Rural Areas? *International Regional Science Review*, 26(1), 86–116. <https://doi.org/10.1177/0160017602238987>
- Leicester, A., O’Dea, C., & Oldfield, Z. (2009, August 28). *The expenditure experience of older households*. <https://doi.org/10.1920/co.ifs.2009.0111>
- Lührmann, M. (2010). Consumer Expenditures and Home Production at Retirement – New Evidence from Germany. *German Economic Review*, 11(2), 225–245. <https://doi.org/10.1111/j.1468-0475.2010.00509.x>
- Maddock, E., & Auster, A. (2016). Expenditure patterns in retirement. *Australian Centre for Financial Studies*.
- Matthews, C. (2022). *New Zealand Retirement Expenditure Guidelines*. NZ Fin-Ed Centre, Massey University.
- Nguyen, H. T., Mitrou, F., & Zubrick, S. R. (2021). *Retirement, Housing Mobility, Downsizing and Neighbourhood Quality – A Causal Investigation* (SSRN Scholarly Paper No. 3880705). <https://doi.org/10.2139/ssrn.3880705>
- Perry, B. (2021). *The material wellbeing of New Zealand households: Trends and relativities using non-income measures, with international comparisons*. Ministry of Social Development.
- Phillips, B. (2013). *NATSEM household budget report: Cost of living and standard of living indexes for Australia, June 2013* (Australia) [Report]. National Centre for Social and Economic Modelling.
- Stephens, M., & Unayama, T. (2012). The impact of retirement on household consumption in Japan. *Journal of the Japanese and International Economies*, 26(1), 62–83. <https://doi.org/10.1016/j.jjie.2011.08.001>
- Thomas, A. (2019). *Who Would Win from a Multi-rate GST in New Zealand: Evidence from a QUAIDS Model*.

Appendix

Appendix Table 1: HES expenditure categories

Expenditure category	NZHEC codes	Description
Groceries	01.1	Fruit and vegetables
	01.2	Meat, poultry and fish
	01.3	Grocery food
	01.4	Non-alcoholic beverages
Eating out	01.5	Restaurant meals and ready-to-eat food
Alcohol and tobacco	02	Alcoholic beverages; Cigarettes and tobacco
Clothing and footwear	03	Clothing; Footwear
Rent payments	04.1	Actual rentals for housing
Mortgage repayments on primary residence	04.2.01.2.0.01	Mortgage principal repayments on 1 st mortgage for primary residence
	04.2.01.2.0.02	Mortgage principal repayments on other mortgage for primary residence
	13.1.01	Mortgage interest payments
Mortgage payments on subsequent properties	04.2.01.2.0.03	Mortgage principal repayments on 1 st mortgage for other properties
	04.2.01.2.0.04	Mortgage principal repayments on other mortgages for other properties
	13.1.01.0.1.03	Interest payments on 1 st mortgage (excluding revolving credit) for other properties
	13.1.01.0.1.04	Interest payments on other revolving credit mortgages for other properties
	13.1.01.0.2.03	Interest payments on 1 st revolving credit mortgage for other properties
	13.1.01.0.2.04	Interest payments on other revolving credit mortgages for other properties
Other housing	04.2 [#]	Home ownership
	04.3	Property maintenance
	04.4	Property rates and related services
	04.6	Other housing expenses
Household utilities	04.5	Household energy
Household contents	05	Furniture, furnishings and floor coverings; Household textiles; Household appliances; Glassware, tableware and household utensils; Tools and equipment for house and garden; Other household supplies and services
Health	06	Medical products, appliances and equipment; Out-patient services; Hospital services
Fuel	07.2.02	Petrol
	07.2.03	Other vehicle fuels and lubricants
Air transport	07.3.03	Domestic air transport
	07.3.04	International air transport
	07.3.07.0.1	Other costs associated with air travel (airport tax, customs duty and taxes paid in New Zealand, excess baggage costs)
Other transport	07.1	Purchase of vehicles
	07.2.01	Vehicle parts and accessories
	07.2.04	Vehicle servicing and repairs
	07.2.05	Other private transport services
	07.3.01	Rail passenger transport
	07.3.02	Road passenger transport
	07.3.05	Sea passenger transport
Communications	08	Postal services; Telecommunication equipment; Telecommunication services

Expenditure category	NZHEC codes	Description
Recreation and culture	09	Audio-visual and computing equipment; Major recreational and cultural equipment; Other recreational equipment and supplies; Recreational and cultural services; Newspapers, books and stationery; Accommodation services
Education	10	Early childhood education; Primary, intermediate and secondary education; Tertiary and other post school education; Other educational fees
Personal care and personal effects	11.1 11.3	Personal care Personal effects
Insurance	11.4	Insurance in the forms of: Life insurance; Dwelling insurance; Contents insurance; Health insurance; Vehicle insurance; Combinations of insurance nec; Other insurance
Credit services	11.5	Direct credit service charges (application fees and service fees for: mortgages, other loans, credit sales, bank accounts, store credit accounts, credit cards, cheques); Financial intermediation services
Miscellaneous services	11.6	Vocational services; Professional services; Real estate services; Other miscellaneous services
Other non-mortgage repayments	13.1*	Interest payments on: personal loans, credit sales (hire purchase), other (bank accounts, store credit accounts and credit cards)
Gifts and other expenses	13.2 13.3 13.4	Contributions to savings Money given to others (excluding donations) Fines
Excluded		
Sales, trade-ins and refunds	14	Sales; Trade-ins; Cash receipts from claims on insurance; Other refunds

Notes: #Excludes mortgage repayments on any properties. *Excludes interest payments on mortgages (or revolving credit) for any properties.

Appendix Table 2: Mean expenditures for retiree households – 2006/07

	Mean	Lower quartile	Median	Upper quartile
Total expenditure	40,259	19,451	30,042	47,740
Groceries	5,804	3,066	5,050	7,516
Food eaten away from home	1,173	0	386	1,286
Tobacco and alcohol	1,043	0	132	1,177
Clothing	1,306	0	0	1,319
Rent	1,461	0	0	0
Mortg. repayments on primary residence	1,147	0	0	0
Other housing	4,134	1,432	2,247	4,137
Household utilities	2,057	1,259	1,835	2,582
Household contents	2,343	286	1,082	3,161
Health	1,712	0	694	2,032
Fuel	1,588	0	1,153	2,266
Air transport	648	0	0	251
Other transport	3,757	267	929	2,520
Communications	1,427	762	1,112	1,690
Recreation and culture	5,253	1,177	2,701	5,967
Insurance	2,274	787	1,320	2,485
Miscellaneous	3,132	397	1,383	3,648
Total housing	6,743	1,900	3,332	7,539
Total transport	5,992	1,030	2,686	6,059
Total necessities	18,305	10,084	14,565	21,033
Total discretionary	21,954	7,352	14,447	25,948

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 3: Mean expenditures for pre-retirement households – 2018/19

	Mean	Lower quartile	Median	Upper quartile
Total expenditure	77,227	35,112	64,039	100,450
Groceries	9,377	3,393	7,585	13,158
Food eaten away from home	3,585	0	1,921	5,175
Tobacco and alcohol	1,889	0	0	2,628
Clothing	2,318	0	0	2,121
Rent	4,679	0	0	3,535
Mortg. repayments on primary residence	7,769	0	0	11,492
Other housing	7,783	623	3,045	5,131
Household utilities	2,499	1,469	2,337	3,139
Household contents	2,437	103	915	2,651
Health	2,255	0	408	2,121
Fuel	2,937	0	1,989	4,703
Air transport	3,202	0	0	1,728
Other transport	6,186	231	1,135	5,723
Communications	1,945	996	1,538	2,412
Recreation and culture	6,882	824	2,737	7,867
Insurance	3,932	905	2,693	5,575
Miscellaneous	7,551	989	3,430	9,330
Total housing	20,231	3,997	13,306	26,542
Total transport	12,325	1,818	5,761	15,905
Total necessities	37,985	18,538	30,433	47,020
Total discretionary	39,243	11,994	28,566	55,175

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 4: Average household expenditures for single retirees, by sex – 2018/19

	Male		Female	
	Mean	Median	Mean	Median
Total expenditure	32,288	24,919	30,078	24,960
Groceries	3,894	3,318	3,695	3,226
Food eaten away from home	1,358	347	927	265
Tobacco and alcohol	1,160	0	455	0
Clothing	515	0	992	0
Rent	2,046	0	2,346	0
Mortg. repayments on primary residence	507	0	487	0
Other housing	4,540	2,718	3,977	2,810
Household utilities	1,263	1,103	1,635	1,443
Household contents	1,271	447	1,193	212
Health	1,032	0	1,972	129
Fuel	1,545	0	933	0
Air transport	1,700	0	1,229	0
Other transport	3,022	255	2,011	161
Communications	1,187	1,056	1,247	1,160
Recreation and culture	3,740	1,174	3,254	1,359
Insurance	2,133	1,338	2,201	1,800
Miscellaneous	1,376	246	1,523	407
Total housing	7,093	5,024	6,810	4,765
Total transport	6,267	2,235	4,173	807
Total necessities	15,570	13,516	15,588	13,809
Total discretionary	16,718	9,891	14,490	8,010

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 5: Average household expenditures by urbanisation – 2018/19

	Major urban (40%)		Other urban (44%)		Rural (16%)	
	Mean	Median	Mean	Median	Mean	Median
Total expenditure	63,499	45,853	47,177	34,253	59,543	47,900
Groceries	7,893	6,503	6,665	5,401	7,302	7,524
Food eaten away from home	2,608	1,054	1,804	880	2,244	1,072
Tobacco and alcohol	1,262	0	928	0	1,301	0
Clothing	2,159	0	1,439	0	2,127	0
Rent	2,763	0	1,779	0	667	0
Mortg. repayments on prim. res.	3,700	0	1,179	0	2,590	0
Other housing	7,134	3,437	5,399	3,376	5,456	2,921
Household utilities	2,232	1,907	1,948	1,804	2,711	2,537
Household contents	2,588	773	2,362	887	2,782	929
Health	2,087	610	2,496	397	3,294	773
Fuel	2,346	0	1,803	0	3,305	2,870
Air transport	3,366	0	2,061	0	1,441	0
Other transport	5,013	687	4,006	516	6,260	1,123
Communications	2,208	1,452	1,615	1,310	1,901	1,542
Recreation and culture	7,441	2,701	6,213	2,160	8,294	3,194
Insurance	3,747	2,368	2,968	2,231	4,767	3,093
Miscellaneous	4,953	1,553	2,511	767	3,100	1,302
Total housing	13,597	6,535	8,358	5,276	8,714	4,300
Total transport	10,725	4,210	7,870	2,809	11,007	5,808
Total necessities	29,677	22,291	21,554	18,089	25,395	22,283
Total discretionary	33,822	21,003	25,623	15,344	34,149	22,826

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 6: Average household expenditures by broad ethnicity group – 2018/19

	Non-Māori (92%)		Māori (8%)	
	Mean	Median	Mean	Median
Total expenditure	56,958	40,759	41,492	35,138
Groceries	7,237	6,149	7,554	5,794
Food eaten away from home	2,253	1,024	1,563	0
Tobacco and alcohol	1,118	0	1,179	0
Clothing	1,915	0	960	0
Rent	1,717	0	5,259	0
Mortg. repayments on primary residence	2,495	0	1,564	0
Housing	6,355	3,421	3,180	2,086
Household utilities	2,191	1,957	2,130	1,898
Household contents	2,584	829	1,787	824
Health	2,551	669	1,391	0
Fuel	2,275	0	2,142	1,597
Air transport	2,618	0	925	0
Other transport	4,971	623	2,483	509
Communications	1,938	1,423	1,452	1,394
Recreation and culture	7,381	2,628	3,073	1,387
Insurance	3,697	2,484	2,113	1,561
Miscellaneous	3,661	1,111	2,736	767
Total housing	10,567	5,562	10,003	6,850
Total transport	9,865	4,075	5,550	2,786
Total necessities	25,630	20,687	23,252	19,793
Total discretionary	31,328	18,555	18,240	14,654

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 7: Average household expenditures by migrant status – 2018/19

	Non-migrant (73%)		Migrant (23%)	
	Mean	Median	Mean	Median
Total expenditure	55,235	38,992	57,168	43,541
Groceries	7,062	6,000	7,820	6,592
Food eaten away from home	2,153	954	2,327	1,036
Tobacco and alcohol	1,140	0	1,076	0
Clothing	1,912	0	1,640	0
Rent	1,922	0	2,197	0
Mortg. repayments on primary residence	1,784	0	4,197	0
Other housing	6,261	3,358	5,674	3,373
Household utilities	2,183	1,952	2,194	1,957
Household contents	2,389	791	2,889	972
Health	2,474	541	2,424	712
Fuel	2,178	965	2,508	0
Air transport	2,260	0	3,111	0
Other transport	5,209	623	3,570	610
Communications	1,796	1,423	2,188	1,367
Recreation and culture	7,567	2,579	5,588	2,550
Insurance	3,610	2,471	3,468	2,190
Miscellaneous	3,335	957	4,294	1,289
Total housing	9,968	5,525	12,068	5,980
Total transport	9,647	3,789	9,190	4,176
Total necessities	24,619	19,916	27,739	22,130
Total discretionary	30,616	17,037	29,429	20,663

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 8: Average household expenditures by employment status – 2018/19

	Not in employment (60%)		In employment (40%)	
	Mean	Median	Mean	Median
Total expenditure	42,847	30,565	75,009	62,742
Groceries	5,782	4,746	9,472	8,625
Food eaten away from home	1,553	636	3,163	1,431
Tobacco and alcohol	857	0	1,520	0
Clothing	1,227	0	2,757	237
Rent	1,701	0	2,433	0
Mortg. repayments on primary residence	688	0	5,011	0
Other housing	5,384	3,233	7,185	3,715
Household utilities	1,925	1,761	2,575	2,391
Household contents	2,325	679	2,813	1,184
Health	1,958	369	3,211	1,036
Fuel	1,711	0	3,092	2,258
Air transport	2,144	0	2,995	0
Other transport	3,367	415	6,881	1,176
Communications	1,479	1,269	2,528	1,645
Recreation and culture	5,902	1,872	8,749	4,115
Insurance	2,891	2,037	4,590	3,224
Miscellaneous	1,951	530	6,033	3,029
Total housing	7,773	4,999	14,630	7,549
Total transport	7,222	2,269	12,968	6,846
Total necessities	19,852	16,794	33,795	28,014
Total discretionary	22,996	12,290	41,214	31,378

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 9: Average household expenditures by education level – 2018/19

	No qualification (31%)		Some school (19%)		Other post-school (34%)		Bachelors (8%)		Postgraduate (8%)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total expenditure	39,207	29,018	57,614	38,037	61,102	47,165	67,940	56,868	80,640	65,341
Groceries	6,494	4,853	7,153	5,882	7,334	6,339	8,153	7,524	9,272	7,954
Food eaten away from home	1,393	265	2,339	1,140	2,487	1,176	3,606	1,683	2,459	1,340
Tobacco and alcohol	863	0	1,473	0	1,073	0	1,517	0	1,138	0
Clothing	1,034	0	1,952	0	2,027	0	2,545	207	3,203	0
Rent	2,889	0	2,460	0	1,388	0	1,135	0	809	0
Mortg. repayments on prim. res.	2,827	0	2,309	0	2,146	0	1,889	0	2,752	0
Other housing	3,619	2,766	5,700	3,306	6,632	3,609	11,200	4,199	9,565	4,790
Household utilities	2,146	1,862	2,128	1,969	2,221	2,023	2,300	1,960	2,223	1,935
Household contents	1,783	556	2,135	833	3,060	1,099	3,014	1,285	3,553	792
Health	1,200	0	2,486	474	3,130	1,030	3,831	1,352	3,186	1,539
Fuel	1,656	0	2,269	0	2,699	2,121	2,618	1,302	2,475	0
Air transport	1,089	0	2,046	0	2,824	0	3,537	0	6,370	0
Other transport	2,109	372	4,670	538	6,753	965	4,533	580	7,297	1,656
Communications	1,606	1,246	1,803	1,415	2,204	1,470	1,724	1,635	2,163	1,551
Recreation and culture	3,437	1,711	8,795	2,619	7,863	2,991	7,120	4,397	13,147	6,145
Insurance	2,497	1,779	3,750	2,452	3,830	2,839	4,405	2,352	5,390	3,504
Miscellaneous	2,566	842	4,146	987	3,431	1,191	4,814	1,417	5,637	1,506
Total housing	9,335	5,223	10,469	6,027	10,166	5,789	14,225	5,735	13,125	6,061
Total transport	4,854	2,030	8,985	3,084	12,276	5,661	10,688	5,565	16,141	7,612
Total necessities	22,077	17,265	25,304	21,296	25,755	21,060	30,807	22,396	32,174	26,735
Total discretionary	17,130	10,791	32,310	16,916	35,346	24,639	37,134	27,256	48,466	33,813

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 10: Average household expenditures by income quintile – 2018/19

	First quintile		Second quintile		Third quintile		Fourth quintile		Fifth quintile	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total expenditure	31,297	22,130	35,234	27,396	51,909	40,476	61,680	51,955	98,765	85,349
Groceries	4,737	3,470	5,173	4,248	6,783	6,177	7,991	7,146	11,642	10,005
Food eaten away from home	985	258	1,182	426	1,958	928	2,552	1,421	4,324	2,469
Tobacco and alcohol	624	0	489	0	1,180	0	1,464	0	1,862	532
Clothing	813	0	1,011	0	1,335	0	1,856	0	4,193	1,031
Rent	1,439	0	1,764	0	2,451	0	1,930	0	2,395	0
Mortg. repayments on prim. res.	815	0	684	0	523	0	2,832	0	7,263	0
Other housing	4,206	2,722	4,115	2,827	6,045	3,814	6,661	3,511	9,519	4,532
Household utilities	1,619	1,519	1,923	1,756	2,032	1,864	2,348	2,135	3,009	2,837
Household contents	1,700	164	1,935	542	2,743	1,002	2,748	1,107	3,485	1,770
Health	1,370	0	1,996	518	3,137	207	2,151	1,031	3,656	1,444
Fuel	1,549	0	1,255	0	2,324	0	2,551	2,004	3,655	3,150
Air transport	1,211	0	1,060	0	2,896	0	2,375	0	4,898	0
Other transport	1,930	247	2,699	343	4,205	583	6,116	927	8,944	2,222
Communications	2,040	1,103	1,457	1,274	1,599	1,423	2,059	1,483	2,345	1,875
Recreation and culture	2,614	962	4,909	1,594	6,622	2,323	8,552	4,246	12,539	5,513
Insurance	1,992	1,519	2,382	1,961	3,465	2,538	3,838	2,947	6,195	4,652
Miscellaneous	1,653	359	1,199	480	2,612	832	3,657	1,937	8,838	4,964
Total housing	6,459	4,017	6,564	4,370	9,019	6,048	11,422	5,923	19,177	9,813
Total transport	4,690	1,537	5,014	3,033	9,425	4,807	11,042	8,403	17,497	11,057
Total necessities	16,849	12,522	17,498	16,056	22,898	20,687	27,659	23,137	42,370	35,977
Total discretionary	14,449	8,475	17,736	10,285	29,011	16,988	34,021	24,441	56,395	43,929

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 11: Average household expenditures by quintile of equivalised income – 2018/19

	First quintile		Second quintile		Third quintile		Fourth quintile		Fifth quintile	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total expenditure	35,682	26,706	35,802	27,396	51,707	39,210	60,589	47,829	95,532	80,173
Groceries	5,821	4,418	5,074	4,218	7,051	6,259	7,674	6,651	10,752	9,711
Food eaten away from home	1,341	412	1,287	376	1,862	1,000	2,439	1,166	4,089	2,390
Tobacco and alcohol	626	0	815	0	1,054	0	1,207	0	1,924	532
Clothing	1,067	0	962	0	1,324	0	2,039	0	3,829	652
Rent	1,690	0	1,825	0	1,823	0	2,923	0	1,706	0
Mortg. repayments on prim. res.	1,199	0	243	0	1,559	0	2,698	0	6,463	0
Other housing	3,951	2,714	3,826	2,678	6,463	4,066	7,385	3,428	8,972	4,718
Household utilities	1,801	1,645	1,932	1,797	2,077	1,892	2,321	2,098	2,805	2,602
Household contents	1,853	401	2,160	499	2,825	1,000	2,487	988	3,301	1,731
Health	1,451	0	2,225	265	2,285	773	2,670	867	3,683	1,356
Fuel	1,805	0	1,582	0	1,977	0	2,711	1,060	3,262	2,791
Air transport	1,325	0	1,185	0	2,465	0	2,448	0	5,048	0
Other transport	2,897	330	2,849	447	3,716	455	5,051	931	9,417	1,767
Communications	2,176	1,216	1,366	1,232	1,597	1,453	1,945	1,470	2,422	1,883
Recreation and culture	2,660	1,220	4,810	1,614	7,053	2,627	6,923	3,539	13,874	6,056
Insurance	2,024	1,442	2,612	2,090	3,264	2,307	3,499	2,737	6,500	5,063
Miscellaneous	1,994	530	1,049	520	3,311	825	4,170	1,715	7,485	4,189
Total housing	6,841	4,017	5,894	3,814	9,845	6,987	13,006	6,536	17,142	8,637
Total transport	6,027	2,040	5,616	2,835	8,158	3,911	10,210	8,296	17,727	10,154
Total necessities	18,662	14,437	16,879	14,753	23,835	20,877	28,444	22,771	39,621	33,341
Total discretionary	17,020	10,065	18,923	11,498	27,872	17,193	32,145	22,631	55,911	41,406

Source: Household Economic Survey

Note: See notes to Table 5.

Appendix Table 12: Wellbeing of retiree households – 2012/13

	Material wellbeing index	Financial strain	Severe financial strain	Adequate income	Satisfied with life
All retiree households	26.4	0.121	0.075	0.638	0.832
Non-Māori	26.7	0.107	0.061	0.650	0.832
Māori	21.2	0.303	0.242	0.515	0.879
Non-migrant	26.7	0.104	0.053	0.667	0.846
Migrant	25.3	0.173	0.127	0.555	0.800
Not in employment	26.0	0.100	0.064	0.635	0.839
In employment	27.0	0.146	0.090	0.646	0.826
No children	26.6	0.107	0.066	0.646	0.844
Has children	18.4	0.412	0.235	0.471	0.588
<i>Age group</i>					
65-74	25.9	0.158	0.104	0.600	0.804
75-84	27.0	0.084	0.039	0.662	0.870
85+	27.3	S	S	0.824	0.824
<i>Education (highest of aged 65+)</i>					
No qualification	25.3	0.157	0.093	0.571	0.829
Some school	26.5	0.176	0.118	0.624	0.824
Post-school	26.6	0.084	0.052	0.669	0.831
Bachelor's degree	28.9	S	S	0.810	1.000
Postgraduate degree	28.4	S	S	0.741	0.778
<i>Composition</i>					
Single living alone	26.1	0.123	0.067	0.669	0.828
Couple only	27.5	0.043	0.038	0.686	0.892
Single living with others	23.1	0.245	0.170	0.491	0.717
Couple living with children	23.3	0.423	0.154	0.423	0.692
<i>Housing tenure</i>					
Owned outright	28.0	0.053	0.017	0.733	0.871
Owned with a mortgage	23.4	0.219	0.156	0.453	0.781
Paying rent	19.7	0.393	0.286	0.339	0.679
Rent free	27.6	S	S	0.600	0.800
<i>Region</i>					
Auckland	25.8	0.165	0.110	0.578	0.798
Wellington	26.6	0.125	0.100	0.750	0.825
Rest of North Island	25.8	0.127	0.072	0.614	0.843
Canterbury	27.3	0.074	S	0.685	0.815
Rest of South Island	27.1	0.051	S	0.695	0.881
<i>Urbanisation</i>					
Major urban	26.2	0.148	0.112	0.639	0.793
Other urban	26.5	0.083	0.050	0.624	0.851
Rural	26.4	0.169	0.051	0.644	0.881
<i>Income quintile</i>					
1 (poorest)	24.1	0.163	0.081	0.558	0.814
2	25.5	0.141	0.094	0.518	0.812
3	25.9	0.116	0.081	0.605	0.837
4	27.8	0.082	0.071	0.729	0.824
5 (richest)	29.2	0.082	0.047	0.800	0.894
<i>Equivalised income quintile</i>					
1 (poorest)	22.7	0.279	0.140	0.419	0.721
2	25.5	0.081	0.070	0.547	0.872
3	25.8	0.140	0.116	0.628	0.826
4	28.2	0.071	0.036	0.750	0.869
5 (richest)	30.0	0.035	S	0.859	0.894

Source: Household Economic Survey

Note: S: Suppressed due to low sample counts

Appendix Table 13: Wellbeing of retiree households – 2015/16

	Material wellbeing index	Financial strain	Severe financial strain	Adequate income	Satisfied with life
All retiree households	28.3	0.080	0.046	0.676	0.834
Non-Māori	28.6	0.060	0.028	0.702	0.841
Māori	24.3	0.273	0.227	0.409	0.750
Non-migrant	28.8	0.079	0.042	0.702	0.848
Migrant	27.1	0.075	0.058	0.600	0.792
Not in employment	28.2	0.075	0.044	0.670	0.850
In employment	28.6	0.088	0.049	0.692	0.808
No children	28.6	0.070	0.039	0.692	0.838
Has children	20.2	0.333	0.222	0.278	0.667
<i>Age group</i>					
65-74	27.9	0.093	0.059	0.652	0.815
75-84	28.4	0.076	0.038	0.675	0.854
85+	30.5	S	S	0.816	0.878
<i>Education (highest of aged 65+)</i>					
No qualification	26.8	0.123	0.082	0.585	0.772
Some school	27.8	0.063	S	0.646	0.848
Post-school	29.1	0.057	0.038	0.734	0.867
Bachelor's degree	31.2	S	S	0.774	0.839
Postgraduate degree	30.8	S	S	0.838	0.946
<i>Composition</i>					
Single living alone	28.3	0.065	0.033	0.707	0.870
Couple only	29.6	0.025	S	0.731	0.871
Single living with others	23.6	0.239	0.164	0.403	0.657
Couple living with children	25.3	0.200	S	0.760	0.720
<i>Housing tenure</i>					
Owned outright	30.0	0.035	0.020	0.754	0.853
Owned with a mortgage	26.7	0.093	0.074	0.537	0.852
Paying rent	21.4	0.317	0.159	0.381	0.698
Rent free	26.8	S	S	0.692	0.846
<i>Region</i>					
Auckland	27.8	0.103	0.060	0.638	0.810
Wellington	28.6	0.113	0.094	0.698	0.830
Rest of North Island	27.8	0.066	0.038	0.656	0.842
Canterbury	29.4	0.049	S	0.754	0.852
Rest of South Island	28.8	0.063	S	0.714	0.841
<i>Urbanisation</i>					
Major urban	28.3	0.085	0.053	0.649	0.830
Other urban	28.2	0.088	0.056	0.676	0.838
Rural	28.9	0.043	S	0.729	0.829
<i>Income quintile</i>					
1 (poorest)	26.0	0.084	0.032	0.568	0.811
2	27.7	0.063	0.031	0.583	0.833
3	28.8	0.084	0.074	0.653	0.874
4	29.2	0.116	0.074	0.779	0.842
5 (richest)	30.3	0.053	S	0.800	0.811
<i>Equivalentised income quintile</i>					
1 (poorest)	24.9	0.158	0.105	0.495	0.737
2	27.7	0.042	S	0.589	0.863
3	28.3	0.116	0.084	0.642	0.863
4	29.7	0.053	S	0.789	0.863
5 (richest)	31.5	S	S	0.884	0.863

Source: Household Economic Survey

Note: S: Suppressed due to low sample counts

Appendix Table 14: Wellbeing of pre-retirement households – 2018/19

	Material wellbeing index	Financial strain	Severe financial strain	Adequate income	Satisfied with life
All pre-retirement households	24.3	0.202	0.142	0.594	0.739
Non-Māori	24.9	0.168	0.118	0.615	0.743
Māori	21.6	0.353	0.250	0.500	0.721
Non-migrant	24.4	0.192	0.125	0.616	0.732
Migrant	24.3	0.216	0.169	0.561	0.743
Not in employment	16.1	0.426	0.344	0.262	0.508
In employment	25.7	0.158	0.103	0.659	0.785
No children	24.8	0.191	0.138	0.618	0.734
Has children	21.4	0.259	0.167	0.444	0.759
<i>Education (highest of anyone)</i>					
No qualification	18.0	0.327	0.245	0.306	0.592
Some school	23.4	0.265	0.162	0.485	0.721
Post-school	24.6	0.200	0.152	0.616	0.728
Bachelor's degree	26.3	0.147	0.088	0.706	0.765
Postgraduate degree	27.6	0.098	0.066	0.787	0.885
<i>Composition</i>					
Single living alone	21.6	0.321	0.214	0.429	0.619
Couple only	28.1	0.067	0.038	0.779	0.875
Single living with others	20.9	0.352	0.273	0.455	0.648
Couple living with children	25.7	0.105	0.074	0.674	0.789
<i>Housing tenure</i>					
Owned outright	27.8	0.059	0.037	0.770	0.800
Owned with a mortgage	25.4	0.162	0.100	0.631	0.792
Paying rent	17.7	0.436	0.327	0.327	0.604
Rent free	21.3	S	S	S	0.500
<i>Region</i>					
Auckland	24.5	0.226	0.174	0.557	0.739
Wellington	24.1	0.222	0.156	0.622	0.733
Rest of North Island	23.8	0.226	0.145	0.605	0.766
Canterbury	24.8	0.111	0.089	0.600	0.689
Rest of South Island	25.3	0.159	0.068	0.636	0.705
<i>Urbanisation</i>					
Major urban	24.4	0.213	0.161	0.575	0.724
Other urban	23.7	0.206	0.153	0.595	0.733
Rural	25.7	0.147	0.074	0.632	0.779
<i>Income quintile</i>					
1 (poorest)	18.5	0.347	0.240	0.347	0.587
2	21.9	0.311	0.216	0.432	0.676
3	24.8	0.147	0.120	0.653	0.773
4	26.9	0.120	0.080	0.680	0.787
5 (richest)	29.5	0.081	0.054	0.838	0.865
<i>Equivalised income quintile</i>					
1 (poorest)	18.3	0.347	0.253	0.320	0.627
2	21.0	0.270	0.203	0.446	0.622
3	22.9	0.240	0.133	0.560	0.707
4	26.9	0.108	0.081	0.757	0.824
5 (richest)	30.1	S	S	0.905	0.905

Source: Household Economic Survey

Note: S: Suppressed due to low sample counts

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