Statistics New Zealand
TATAURANGA AOTEAROA

User guide for Statistics New Zealand's wage and income measures

Third edition

New Zealand Government

Citation
Statistics New Zealand (2013). *User guide for Statistics New Zealand's wage and income measures* (3rd ed). Available from www.stats.govt.nz.

ISBN 978-0-478-40845-4 (online)

Published in September 2013 by
Statistics New Zealand
Tatauranga Aotearoa
Wellington, New Zealand

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Preface

Wage and income measures are some of the more commonly used data produced by Statistics New Zealand. The *User guide for Statistics New Zealand's wage and income measures* is a valuable tool for policy analysts, researchers, journalists, and anyone else who is interested in wage and income trends in New Zealand.

Statistics NZ would like to acknowledge in particular the input of Peter Conway and Andrew Chick of the Council of Trade Unions and David Maré and Sylvia Dixon of Motu Economic and Public Policy Research.

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1 Introduction

Statistics NZ produces a number of income and wage measures, which are used widely by government, unions, employers, researchers, journalists, and individuals. Each of these measures is useful for different purposes. However, the sheer number, and at times incomparability, of Statistics NZ's wage and income measures can cause confusion. This user guide clarifies which questions or situations each measure is best applied to, as well as the measure's design and purpose.

2 Which wage and income measure to use?

The first distinction to make when thinking about Statistics NZ's income and wage data is whether you need a measure of income that covers only those in paid employment, or income for everyone aged 15 years and over (including those not engaged in paid employment).

If you want an income measure that covers only those in paid employment, the next question is whether you want to know how much money is earned per job, or if you want to know the average or median income an individual earned from wages and salaries, regardless of the number of jobs or hours they worked.

If you want an income measure that includes everyone aged 15 years and over, including those not engaged in the labour market, the next question is whether you want to know about an individual's income or a household's income.

Table 1 will help you identify which surveys may best suit your needs. The table also shows how often the information from each survey is published and whether the wage and income measure is given as an hourly, weekly, quarterly, or annual measure.

Table 1

Identifying which wage or income measure to use			
	Per job	Per person	Per household
Income for those in paid employment	Quarterly Employment Survey (quarterly release: weekly and hourly average earnings) LEED: job-level (quarterly release: full quarter earnings) Labour Cost Index (quarterly release: quarterly and annual movements in salary and wage rates and annual release: annual movements in all labour costs) (1)	NZ Income Survey (annual release: weekly and hourly average earnings) LEED: person-level (annual release: annual earnings and annual movements in earnings) (1)	This can be requested as a customised job from the New Zealand Income Survey
Income for everyone aged 15 years and over, including those not in paid employment	This is not captured by Statistics NZ	New Zealand Income Survey (annual release: weekly income over a quarter) Census: (five-yearly release: annual income in bands) Household Economic Survey/HES (Income) annual income release(2) LEED: person-level (annual release: annual income and annual movements in income) (1) Survey of Family, Income and Employment (waves 1–8 data: movements in annual income)(1)	New Zealand Income survey (annual release: weekly income) Census: (five-yearly release: annual income in bands) Household Economic Survey/ HES (Income) annual income release (2) Survey of Family, Income and Employment (wave 1–8 data: movements in annual income) (1) (3)

1. Most of the Statistics NZ wage and income measures below relate to a specific point in time. However, the Labour Cost Index (LCI) and the Survey of Family, Income and Employment (SoFIE) are designed to measure changes, or movements, in income and/or wages over time. The Linked Employer-Employee Dataset (LEED): person-level data provides both specific point in time measures of income and movements in income across time. LEED person-level tracks income movements through the use of annual income deciles. Deciles are formed by dividing the population into 10 equal groups, from lowest to highest. The bottom decile (decile 1) is the lowest 10 percent of the population, while the top decile (decile 10) is the highest 10 percent.

2. From 2007/08 a subset of the Household Economic Survey (HES), HES (Income), began. It collects key income and housing data in the years between the main three-yearly HES releases.

3. Household income is not captured in the SoFIE dataset. However, it can be easily derived by summing up the personal income in each household as information about each household's members is included.

3 Statistics NZ wage and income datasets

Statistics NZ wage and income datasets can be divided into two groups. The first are datasets that provide income measures for those in paid employment at the job level. These include:

- the Quarterly Employment Survey (QES)
- the Labour Cost Index (LCI)
- Linked Employer-Employee Dataset (LEED): Quarterly job-level release.

The second group are datasets that include income for everyone (including those in paid employment) at both the individual and the household levels. These include:

- the New Zealand Income Survey (NZIS)
- Linked Employer-Employee Dataset (LEED): Annual person-level release
- the Household Economic Survey (HES) / HES (Income)
- Survey of Family, Income and Employment (SoFIE)
- Census of Population and Dwellings (census).

4 Datasets that show income from paid employment only: job level

The following datasets show earnings from wages and salaries only. They are provided at the job rather than the individual level (that is they show wages and salaries earned per job rather than per individual). Typically, job-level data is collected from businesses rather than households, thereby providing information on the income characteristics of jobs rather than the individuals who fill those jobs.

4.1 Quarterly Employment Survey (QES)

If you are looking for average hourly earnings, average paid hours in a week, or average weekly earnings, the Quarterly Employment Survey (QES) is the best source. Data for the QES is broken down by industry, sector, region, and sex. These measures are then split by ordinary time, overtime, and total time.

However, the QES has some limitations. The QES does not survey the agriculture or aquaculture industries, nor several other industries (see the data quality section of the QES information releases for more information). The QES does not include earnings or hours data on self-employment.

The QES sample is designed to give accurate industry-level estimates, not regional. For this reason, QES only releases regional data for Auckland, Wellington, and Canterbury because the data quality is not sufficient for lower-level regional breakdowns. If you need regional wage statistics, you are better to use the Linked Employer-Employee Dataset (LEED), which is discussed in section 4.3.

Similarly, if you are interested in changes in earnings across time, the Labour Cost Index (LCI) is a better measure than the QES. The LCI measures changes in salary and wage rates for a fixed quantity and quality of labour input. The QES does not fix any component of labour input and instead measures at an aggregate level. This means changes to the composition of the labour force can affect average earnings. For example, if a number of low-paying jobs are lost from the labour force, this will shift the average earnings up.

For more details, please see the data quality section in the QES information releases.

4.2 Labour Cost Index (LCI)

Labour Cost Index (Salary and Wage Rates) – quarterly release

The Labour Cost Index (Salary and Wage Rates) is released every quarter. It uses fixed industry and occupation weightings to calculate percentage increases in wages for a fixed quantity and quality of labour. It can also be used by employers, employees, and trade unions in pay negotiations. It is also used by businesses to help calculate production costs.

There are several important things to note when using the labour cost index (LCI). The main figure that Statistics NZ recommends as an indicator of wage increases is the adjusted percentage change in 'all salary and wage rates' (including overtime). This is shown as both a percentage change from the previous quarter and from the previous year. The annual percentage change figure is, for most purposes, the most significant measure.

The LCI also gives percentage changes in 'median and mean increases' (see the data quality section in the LCI information releases). The median and mean increases are the percentage increases only for those surveyed who reported increases in wages. In

contrast, the adjusted percentage change in all salary and wage rates discussed above includes all pay movements, including decreases, increases, and no change.

The LCI also produces an analytical unadjusted series. The unadjusted series retains the constant quantity of the labour input but allows for some changes in the quality of labour input. Consequently, the unadjusted LCI series includes movements in pay rates due to such factors as changes in performance, responsibility, experience, and increased qualifications. The analytical series has been developed to complement, but not replace, the official adjusted LCI series.

Labour Cost Index (All Labour Costs) – annual release

Statistics NZ also produces an annual labour cost index, which includes all labour costs. This is released for the June quarter. The annual index combines the salary and wage costs measured in the quarterly releases with the addition of non-wage labour costs such as medical insurance, superannuation, annual leave, and Accident Compensation Corporation (ACC) employer premiums. (For a comprehensive list of the costs measured by the annual LCI see the data quality section in the LCI information releases.)

4.3 Linked Employer-Employee Data (LEED): Quarterly job-level data in NZ.Stat

Linked Employer-Employee Data (LEED) is a rich and valuable data source, particularly for those doing in-depth labour market research. Numerous businesses, city councils, and community groups also find it useful for its regional wage measures.

LEED produces quarterly information at the job level and annual information at the person level (see section 5.2 for more about person-level data). You can access this information in NZ.Stat, a free tool on our website. LEED quarterly tables in NZ.Stat give you detailed quarterly statistics at the job level.

LEED collects tax information about all people and businesses registered with Inland Revenue. It has a high level of coverage so, unlike the QES, it can be broken down to the regional level without losing statistical accuracy.

In statistical terms, this means that LEED is not subject to sampling error. (Sampling error occurs when a sample of the population is surveyed and is taken as representative of the whole population. Sampling error is an inevitable feature of all surveys that use a sample population.)

The quarterly job-level data looks at the characteristics of jobs, rather than the individuals who fill those jobs. This dataset gives average and median quarterly earnings (that is, earnings over a three-month period) from wages and salaries by industry, and by industry and region combined. (Unlike the QES, LEED does include the agriculture and aquaculture industries.) Additionally, the quarterly data provides earnings breakdowns by age, sex, sector, territorial authority, and firm size.

Due to its longitudinal nature, job-level LEED also provides data on wages for continuous jobs (that have been occupied by an individual employee for more than six months) and for new jobs (that an individual employee has occupied for at least one quarter but less than two).

One of the drawbacks of LEED is that it does not provide timely data. Due to the way the data is collected, releases take place nine months after the QES release. It is also important to note that LEED does not give hourly or weekly rates, unlike the QES. Also, the quarterly job-level data does not include earnings from self-employment.

Detailed LEED outputs are subject to our standard confidentiality rules. This may affect the usability of the data at lower level aggregations.

5 Datasets that show income for everyone (including those in paid employment and those not in paid employment): individual and household levels

The New Zealand Income Survey (NZIS), the Household Economic Survey (HES)/HES (Income), the Survey of Family, Income and Employment (SoFIE), the Census of Population and Dwellings, and the LEED person-level release all include income from sources other than wages and salaries. This means that, unlike the QES, the LCI, and the LEED job-level datasets, they include people who are not engaged in paid employment (for example beneficiaries, superannuitants, stay-at-home parents, and students). They also include people receiving wages and salaries and other forms of income.

As a consequence, the following datasets include income from a greater number of sources, such as income from government transfers (for example benefits and tax credits), private superannuation, and investments, as well as from wages and salaries and from self-employment.

Surveys collected from households show earnings at the person level rather than the job level. Person-level measures of wages and salaries encompass earnings from multiple job holding and for those whose engagement in paid employment is discontinuous. The NZIS and LEED person-level datasets are both useful for looking at the earnings of those in paid employment at the individual level.

With the exception of the person-level LEED, the datasets discussed in this section are collected from households. Surveys collected from households typically provide richer demographic data such as ethnicity, qualifications, and household type. This means that household surveys enable us to look at how well particular demographic groups are doing in comparison with others. At the same time, household information, such as the number of dependent children, offers a greater context for understanding people's economic situation. For example, while an annual income of $60,000 may be considered a reasonably high income for a single person, it would not be so for a household with six dependent children.

5.1 New Zealand Income Survey (NZIS)

The New Zealand Income Survey (NZIS) is a supplement to the June quarter Household Labour Force Survey (HLFS). It provides a snapshot of income levels for people and households. The NZIS gives median and average weekly income from most sources including wages and salaries, self-employment, government transfers, private superannuation, and investment income. For those receiving income from wages and salaries, statistics on median and average hourly earnings are also available.

Due to its large sample size, the NZIS is particularly good for making income comparisons across different population groups. For example, it is possible to compare income across age, ethnicity, sex, qualifications, and household type. It is also possible to compare the income of those in paid employment with those not in paid employment and the earnings of those in full-time employment with those in part-time employment. Statistics NZ defines full-time employment as working 30 hours or more per week. This data is useful for exploring the implications of full, partial, or non-participation in paid employment upon individual income levels.

The NZIS is also very useful when looking at the distribution of income in New Zealand. In particular, the NZIS data on personal income distribution, which is presented in quintiles, shows which demographic characteristics are most strongly associated with a

lower or higher income. Quintiles divide the population into five groups by ranking people in order of the income they receive. The bottom quintile (quintile 1) represents the 20 percent of the population with the lowest personal incomes, while the top (quintile 5) represents the 20 percent of the population with the highest incomes. Quintiles are particularly useful for illustrating how incomes are distributed amongst population groupings.

The NZIS reports on weekly income and relates specifically to a week during the June quarter; that is, a snapshot in time. Conversion of this weekly income into an annual equivalent is not recommended as an individual's circumstances can change significantly during a year (for example if they have a change of job, or a period out of work). The Household Economic Survey and the person-level LEED are better sources of annual income.

Finally, one of the more commonly used features of the NZIS is the occupational income data. This data can be accessed in NZ.Stat (select 'Incomes' from the drop-down menu on left-hand side). NZIS occupational income data is given as average hourly earnings, average weekly income, median hourly earnings, and median weekly earnings. These earnings variables can then be broken down by sex and by age groupings. The table also shows these occupational earnings as a time series. Please note that the earnings were broken down by the occupational classification NZSCO1999 in the tables from 1997 to 2008. From 2009 onwards, the new classification of occupation ANZSCO2006 has been applied in the table. (See the data quality section of the NZIS information release for more information.)

It is important to note, however, that the occupational groupings provided by the NZIS are very broad. For example, the occupational category 'professionals' would include primary school teachers through to surgeons, two groups whose earnings we know are very different. The NZIS cannot provide specific occupational data, such as how much a plumber typically gets paid.

5.2 Linked Employer-Employee Data (LEED): Annual person-level data in NZ.Stat

Person-level LEED income data is released annually and covers taxable income over the tax year. Because it gives earnings at the person level rather than the job level it can show people's main source of earnings, taxable income levels, median annual taxable income, and the earnings of those employed in more than one job. Unlike the quarterly job-level data, the person-level data includes earnings from self-employment.

LEED has a high level of coverage and can be broken down to produce detailed – including regional – statistics, without losing statistical accuracy. LEED annual tables in NZ.Stat give you detailed annual statistics at the person level. Detailed LEED outputs are subject to our standard confidentiality rules. This may affect the usability of the data at lower level aggregations.

Due to its longitudinal nature, LEED also provides statistics on how people's income levels and income sources change over time. For example, LEED shows the movement of people between income deciles according to region and a small number of demographic variables. The same movements are also shown only for those earning income from paid employment.

LEED person-level data also shows the number of people receiving income from each taxable income source including wages and salaries, taxable benefits, or self-employment. This data can be further broken down by sex, age, and region. Note that the person-level LEED will show a smaller proportion of people receiving income from benefits than the NZIS. This is because it does not include non-taxable benefits. Therefore, those receiving non-taxable supplementary benefits only (such as the

accommodation supplement or the disability allowance) will be included as beneficiaries in the NZIS, but will not be included as such within the person-level LEED.

For those in paid employment only, LEED person-level data provides the main earning source, that is, self-employment or wages and salaries, by the industry in which people had their highest earnings in the tax year. This is shown as both a count of people and as median annual earnings.

There are a couple of important points to note when using person-level LEED data as a measure of income. These points relate primarily to how the data is collected.

Firstly, LEED does not include several standard demographic variables such as ethnicity, household type, or qualifications. This is because LEED is generated from information held by the Inland Revenue, a department that typically does not collect these variables. Surveys collected from households by Statistics NZ provide considerably more demographic information. The New Zealand Income Survey (NZIS), the Household Economic Survey (HES), Survey of Family, Income and Employment (SoFIE), and the Census of Population and Dwellings are all examples of household surveys which provide income data.

Secondly, if using person-level LEED as a measure of income, be aware that it only includes taxable income. It does not show income from non-taxable sources (such as non-taxable Work and Income benefits, including accommodation supplements, disability allowances, and special needs grants), from tax credits, or from investments. This point is particularly significant when considering the income of beneficiaries, since supplementary benefits are often paid in conjunction with core benefits and can form a significant proportion of social assistance income. For this reason, the New Zealand Income Survey (NZIS) or the Household Economic Survey (HES) / HES (Income) are considered more complete measures of total income.

Finally, LEED does not provide timely data. Annual data is made available in the year following the tax year for which the data was collected.

More specialised data available from person-level LEED

The person-level data provides vastly improved statistics on earnings for multiple job holders and the self-employed. It also shows earnings by number of months of employment and continuous spell length of employment within the tax year.

5.3 Household Economic Survey (HES) / HES (Income)

HES and HES (Income) provide a comprehensive range of statistics relating to income, expenditure, personal, and household demographics. The surveys show annual income from all sources at both the person and the household level.

As HES captures annual income rather than a weekly measure of income, it tends to give a better indication of living standards, since an annual measure gives a longer-term view of an individual's or household's income. The emphasis on households within HES and HES (Income) is also useful for assessing living standards, as it shows the number of individuals a given income needs to support. HES (Income) collects household expenditure on housing costs, while HES aims to collect household expenditure information from all sources.

The collection period runs from the beginning of July until the end of June, and the information is released in November.

Both of the HES surveys collect each household's sources of income in great detail and show the percentage share that various sources of income contribute to household

income within New Zealand. For example, in 2011/12, HES (Income) showed that income from wages and salaries made up 74 percent of total household income.

The HES surveys provide a significant number of demographic variables, or characteristics. For example, HES shows the number of people with specific characteristics, such as sex, ethnicity, labour force status, and age, who live in households within a given range of household income.

There are, however, some points to be aware of with the surveys. Firstly, the HES is currently only released every three years. HES (Income) runs every year during the two years between HES, which allows for a more frequent collection of household income data.

Secondly, HES and HES (Income) are not designed to be a measure of regional household or personal income. This is because the survey has a relatively small sample size of around 5,000 households and, in the 2011/12 HES (Income), approximately 7,000 people, and therefore accurate and reliable data cannot be provided for most regional breakdowns. Data is available only for very broad regional areas. (See the HES and HES (Income) landing page for more information)

5.4 Survey of Family, Income and Employment (SoFIE)

The Survey of Family, Income and Employment (SoFIE) is designed to study income, family type, and employment, and how these change over time. SoFIE is a longitudinal survey, meaning the same respondents were revisited over a period of eight years, or 'waves', from October 2002 to September 2010, to measure how their individual and family circumstances changed. During their interviews, participants were asked to provide, amongst other things, a detailed account of both incomes received and sources of income over the 12 months prior to each interview.

Given the longitudinal nature of the survey, SoFIE differs from most of the surveys released by Statistics NZ, which typically measure an individual's circumstances at the time of a single interview.

In terms of income data, SoFIE is useful for looking at changes in individual, family, or household income and the factors that influence these changes, such as involvement in the labour force, education and training, and family composition. The purpose of SoFIE is not to provide a stand-alone measure of income levels, but to offer a resource for understanding the relationship between income and a number of other significant variables as discussed above.

5.5 Census of Population and Dwellings

The Census of Population and Dwellings is the official count of population and dwellings in New Zealand, providing a 'snapshot' of our society at a point in time. The New Zealand census is taken every five years. The most recent census took place on 5 March 2013. It was held seven years after the last census, because the 2011 Census was cancelled due to the earthquake in Canterbury in February 2011.

The census is the only dataset in New Zealand that covers the entire population and for this reason is not subject to sampling error.

The census collects information on income for individuals, households, and families. The individual census form asks respondents for their total personal income in the last 12 months before 31 March on the year the census is taken. Rather than giving an actual figure, respondents are asked to place themselves in an income band. Because the census collects income in bands it does not offer a precise measure of income.

The individual form also asks respondents to select the sources from which they received income in the last 12 months. This could include wages and salaries, earnings from self-employment, the unemployment benefit, regular ACC payments, or student allowances. The census does not, however, ask for the relative proportions or amounts that each of these income sources contribute to total income. Family and household income is derived by adding together the incomes of the members of the family or household.

Because the census covers the population as a whole and is not subject to sampling error, census income data can be used in detailed regional and demographic breakdowns. At the same time, some of these detailed demographic outputs should be interpreted with caution. For example, when looking at income by ethnicity note that non-response to the census income questions is significantly higher for Pacific peoples than for Europeans. Such high non-response rates can undermine the quality of the data available, thereby limiting the strength of any inference made from that data.

Finally, the census is the only data source produced at Statistics NZ which provides specific occupational data. In relation to income and occupation, data should be interpreted with extreme caution. Because the census asks for a respondent's total income from all sources (including income from investments and benefits) it does not isolate the amount earned by an individual in their job only. This means that the best the census can offer in terms of occupational income is the range of total income levels, or income bands, received by individuals within each occupational category. This total income will include income from all sources and not just from wages and salaries. Any outputs should be footnoted to explain this.

Detailed census breakdowns can be accessed using NZ.Stat on the Statistics NZ website. Detailed outputs are, however, subject to restrictions imposed by Statistics NZ's commitment to ensuring the confidentiality of all data released.

6 Frequently asked questions

The following section consists of a list of questions frequently asked about wage and income. Each question is followed by a suggestion of at least one Statistics NZ wage and income measure to use. Where more than one measure is suggested each measure is followed by a list of pros or cons to help you decide which of the measures is most appropriate to your specific information need.

6.1 What do the self-employed earn?

There are two potential data sources for answering this question: LEED person-level and the NZIS. The advantages and disadvantages of using each of these data sources are discussed below:

Linked Employer-Employee Dataset (LEED) person-level

Person-level LEED provides an annual measure of self-employed earnings.

The advantages of using LEED person-level data:

- **Accuracy:** It uses administrative rather than sample survey data and has full population coverage of those registered as self-employed with IRD. For this reason LEED is not subject to sampling error and is particularly accurate.

The disadvantages of using LEED person-level data:

- **Less timely:** The information is released in the year following the tax year to which the data refers. Also LEED does not include non-taxable income such as the accommodation supplement paid by Work and Income.

New Zealand Income Survey (NZIS)

The NZIS gives a weekly measure of self-employed earnings.

The advantages of using NZIS data:

- **More timely:** NZIS data is released approximately three months following the period for which the data was collected. However, it should be noted that the NZIS is released for the June quarter only. This means that 10 months after the most recent June release, the NZIS will no longer be more timely than the LEED person-level release.

The disadvantages of using NZIS data:

- **Sample error:** NZIS data provides a less precise measure of earnings than LEED person-level because it uses data from a sample survey. Sample surveys take a sample of the population as representative of the whole population. This leads to sampling error which, to some extent, affects the accuracy of the data produced.

6.2 What is the distribution of income in New Zealand, by ethnicity, sex, age, or qualifications?

There are two potential data sources for answering this question: the NZIS and the LEED person-level release. Note that LEED person-level will only provide data by sex and age, not by ethnicity or by qualifications. The advantages and disadvantages of using each of these data sources are discussed below.

New Zealand Income Survey (NZIS)

The advantages of using NZIS data:

- **Includes ethnicity and qualifications:** The NZIS includes the demographic variables ethnicity and qualifications, whereas LEED person-level does not.
- **More timely:** NZIS data is released approximately three months following the period for which the data was collected. However, it should be noted that the NZIS is released for the June quarter only. This means that 10 months after the most recent June release, the NZIS will no longer be more timely than the LEED person-level release.

The disadvantages of using NZIS data:

- **No breakdowns below regional council level:** The NZIS is a sample survey and, consequently, is subject to sampling error. For this reason the NZIS loses statistical accuracy if broken down to smaller regional areas below the regional council level.
- **No detailed demographic breakdowns at regional level:** If you want to know the income of a specific demographic group (such as gender, age, or ethnicity) within a specific region, the NZIS is not useful due to sampling errors. If you want income measures for smaller detailed sub-populations, the census is a better source.
- **Released for June quarter only:** Although NZIS data is more timely than LEED person-level data and is released approximately three months following the period for which the data was collected, it should be noted that the NZIS is released for the June quarter only. This means that 10 months after the most recent June release, the NZIS will no longer be more timely than the LEED person-level release.

Linked Employer-Employee Dataset (LEED) person-level

The advantages of using LEED person-level data:

- **Accuracy:** It offers comprehensive population coverage due to the fact that it uses administrative, rather than survey, data. For this reason, LEED person-level data is not subject to sampling error and is particularly accurate.
- **Regional breakdowns:** The comprehensive population coverage and accuracy of LEED person-level allows detailed regional breakdowns without compromising the accuracy of the data. Detailed outputs are, however, subject to restrictions imposed by Statistics NZ's commitment to ensuring the confidentiality of all data released.

The disadvantages of using LEED person-level data:

- **Does not include non-taxable income:** It only covers taxable income. It does not include income from non-taxable sources such as tax credits and non-taxable government transfers (for example, the disability allowance and the accommodation supplement). This point is particularly significant when considering the income of beneficiaries, since supplementary benefits are often paid in conjunction with core benefits and can form a significant proportion of social assistance income.
- **Few demographic variables:** It provides few demographic variables and does not include ethnicity.
- **Less timely:** The information is released in the year following the tax year to which the data refers.

6.3 How much income do people receive by region (at the regional council level)?

There are two potential data sources for answering this question, LEED person-level and the NZIS. The advantages and disadvantages of using each of these data sources are discussed below:

Linked Employer-Employee Dataset (LEED) person-level

The advantages of using LEED person-level data:

- **Accuracy:** It offers comprehensive population coverage because it uses administrative, rather than survey, data. For this reason LEED person-level data is not subject to sampling error and is particularly accurate.
- **Regional breakdowns:** The comprehensive population coverage and accuracy of LEED person-level allows detailed regional breakdowns without compromising the accuracy of the data. Detailed outputs are, however, subject to restrictions imposed by Statistics NZ's commitment to ensuring the confidentiality of all data released.

The disadvantages of using LEED person-level data:

- **Does not include non-taxable income:** It only covers taxable income. It does not include income from non-taxable sources such as tax credits and non-taxable government transfers (for example, the disability allowance and the accommodation supplement).
- **Few demographic variables:** It provides few demographic variables and does not include ethnicity.
- **No household income:** It only provides annual personal income. It does not provide annual household income.
- **Less timely:** It is not as timely as NZIS data. LEED person-level releases are made available in the year following the tax year to which the data refers.

New Zealand Income Survey (NZIS)

The advantages of using NZIS data:

- **Includes non-taxable and taxable income:** The NZIS measures both taxable and non-taxable income. Therefore, it covers more sources of income than LEED person-level, which only collects taxable income. This means that NZIS data is more representative of people's true income levels than LEED person-level data.
- **More timely:** NZIS data is released approximately three months following the period to which the data refers. However, it should be noted that the NZIS is released for the June quarter only. This means that 10 months after the most recent June release, the NZIS will no longer be more timely than the LEED person-level release.

The disadvantages of using NZIS data:

- **No breakdowns below regional council level:** The NZIS is a sample survey and, consequently, is subject to sampling error. For this reason the NZIS loses statistical accuracy if broken down to smaller regional areas below the regional council level.
- **No detailed demographic breakdowns at regional level:** The NZIS is not useful for finding out the income of a specific demographic group (such as gender, age, or ethnicity) within a specific region, due to sampling errors. The Census of Population and Dwellings is better for this detailed demographic and regional income data.

6.4 How much income do people receive by small regions (below the regional council level) or by region, sex, ethnicity, or qualifications?

The Census of Population and Dwellings is the only data source, at this point, that can give regional data below the regional council level and allows for detailed regional and demographic breakdowns. Despite these advantages (which are discussed in greater detail below) there are some disadvantages (also discussed below) associated with the census that users should be aware of.

Census

The advantages of using census data:

- **Detailed demographic breakdowns at regional level:** The census allows for detailed regional and demographic breakdowns. This is because the census covers the whole of the New Zealand population and is not subject to sampling error. Detailed outputs are, however, subject to restrictions imposed by Statistics NZ's commitment to ensuring the confidentiality of all data released.
- **Smaller regional area breakdowns:** The census allows for regional breakdowns below the regional council level.
- **Household, family, and personal income:** The census provides a measure of family income, household income, and personal income.

The disadvantages of using census data:

- **Income bands, not single dollar amounts:** The census measures income in bands only, so does not provide a precise or optimal measure of income. The highest income band within the census is $100,001 or more annually, which is highest income band used in most recent previous censuses. As a consequence the difference between a person or household with an income of $100,001 and an income of $350,000, although substantial, is not indicated within census income data. For the 2013 Census the top income band was changed to $150,001, and a new band of $100,001 to $150,000 was created. Also, the $50,001 to $70,000 income band has been split into two bands: $50,001 to $60,000 and $60,001 to $70,000.
- **Five-yearly only:** The census is released only every five years. This means that towards the end of the cycle, census income data is somewhat out of date. The most recent census was held on 5 March 2013 – seven years after the previous census.
- As some people consider income a sensitive topic, around 6 percent of people do not respond to this question in the census. This can affect the quality of the income data output.

6.5 What is the movement of people between income levels across time?

There are two potential data sources for answering this question: LEED person-level and SoFIE. Both are longitudinal datasets. This longitudinal nature enables an exploration of the movement of people between income levels over time. These are the only two sources of income data produced by Statistics NZ that allow for this kind of analysis. The advantages and disadvantages of using person-level LEED or SoFIE are discussed below.

Linked Employer-Employee Dataset (LEED) person-level data

The advantages of using LEED person-level data:

- **Longer time series:** LEED offers a longer time series than SoFIE. LEED data goes back to the year ending 31 March 2000, whereas SoFIE data is available for the years ending 30 September 2003 to 30 September 2011.
- **Accuracy:** It uses administrative rather than survey data and has full population coverage of those registered with the Inland Revenue. For this reason LEED person-level data is not subject to sampling error and is particularly accurate.

The disadvantages of using LEED person-level data:

- **Does not include non-taxable income:** It only covers taxable income. It does not include income from non-taxable sources such as tax credits and non-taxable government transfers (for example, the disability allowance and the accommodation supplement).
- **No household income:** It only provides data on personal income, not on household income.

Survey of Family, Income and Employment (SoFIE)

The advantages of using SoFIE data:

- **Includes non-taxable income and taxable income:** Because SoFIE includes both non-taxable income and taxable income it provides a more comprehensive range of income sources than does LEED.
- **Provides family and household income:** SoFIE provides personal, family, and household income measures, whereas LEED person-level only provides data on personal income.
- **Contains a wide range of socio-demographic data:** For example, presence of children, and changes in family circumstances. This information can be used to explain why individuals move across income levels across time. LEED contains some socio-demographic data, but the range of available data is more limited than in SoFIE.

The disadvantages of using SoFIE data:

- **Shorter time series:** It offers a shorter time series than LEED person-level data.
- **Data less easy to access:** SoFIE data is not as easy to access as LEED person-level, as much of the SoFIE data is not posted on the Statistics NZ website. However, it can be obtained in the Data Lab at Statistics NZ.
- **Sampling error:** SoFIE is a sample survey and for this reason is subject to sampling error. Sampling error arises when data are collected from a part, rather than the whole of the target population.

Appendix: Wage and income measures flowchart