# RSE EARNINGS AND REMITTANCE SURVEY 2016

## Ni-Vanuatu Employed in the Bay of Plenty and Marlborough for 18-22 weeks

## A Statistical Summary and Comparison

**Report prepared by Bedford Consulting for the Ministry of Business, Innovation and Employment.**

**January 2017**

## PREFACE

This report contains a summary of statistics on earnings and remittances for 142 Ni-Vanuatu men employed by three Recognised Seasonal Employers (RSEs) for periods of 18-22 weeks between late March and late September 2016. The information contained in the report compliments and extends data collected in the *RSE Remittance Pilot Project, 2014/15* (Gounder, 2015; MBIE, 2015; Bedford & Bedford, 2016) that was jointly funded by the Ministry of Business, Innovation and Employment (MBIE) and the Ministry of Foreign Affairs and Trade (MFAT).

The initial reports by Gounder (2015) and MBIE (2015) contain information on earnings and remittances for 640 Samoan and Tongan men employed by six Recognised Seasonal Employers (RSEs) in the Hawke's Bay for periods ranging from 8 to 30 weeks. A statistical summary report, prepared by Bedford Consulting in 2016, contains a more detailed review of statistics relating to earnings and remittances for 487 (76 percent) of the Samoans and Tongans covered in the pilot project. These 487 workers were employed continuously for a minimum of 22 weeks.

In the process of compiling the statistics contained in these statistical summaries a series of "Orchard Reports" were prepared for the four major employers of the Samoans and Tongans and the three employers of the Ni-Vanuatu workers who are covered in this report. These Orchard Reports, which are listed at the end of the References Cited section of this report, can be obtained from MBIE's Pacifica Labour and Skills Team. They cover the earnings and remittances of Samoans and Tongans employed by Apollo Apples (Turners and Growers), Johnny Appleseed, Mr Apple, and Taylor Corporation in the Hawke's Bay as well as Ni-Vanuatu employed by Baygold and Eastpack in the Bay of Plenty, and Seasonal Solutions in Marlborough.

In the preparation of this report we acknowledge the considerable assistance received from Paul Fawcet (Baygold), Bonnie Keepin (Eastpack), Helen Axeby and Alister McKenzie (Seasonal Solutions) who facilitated the collection of data on earnings and remittances from the 142 Ni-Vanuatu workers. We also acknowledge the support we have received from George Rarere and Diana Loughnan in the Pacifica Labour and Skills Team, Immigration New Zealand.

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## 1. INTRODUCTION

Between late March and late September 2016 data were collected on the earnings and remittances of 142 Ni-Vanuatu men employed as seasonal workers in the Bay of Plenty (92) and Marlborough (50) for periods of between 18 and 22 weeks. During this time, collectively they earned just over NZ$2.264 million or the equivalent of $15,944 per worker on average. Over a third of the total ($844,985 or 37 percent) was deducted as tax or for shares of fixed travel, insurance and accommodation costs. A further 11 percent ($259,254) was spent on cash remittances (including transfer fees) to their families and communities while they were employed in New Zealand.

The systematic collection of data on cash remittances by RSE workers during their periods of employment in New Zealand has been prioritised by MBIE to obtain better information on the regularity and magnitude of cash transfers made by workers over the months they are absent from their island-based families and communities. There is a widespread belief that seasonal workers from the Pacific remit sizeable sums of money back to their island countries while employed in New Zealand. The data on which this assumption is made tend to be estimates of total remittances that workers could recall making over a particular period rather than records of what they actually sent.

With the support of employers, the *RSE Remittance Pilot Project* has systematically collected data on the earnings and remittances of three groups of workers: 371 Samoans and 269 Tongans employed by selected RSEs between November 2014 and June 2015; and 142 Ni-Vanuatu workers employed by three RSEs between March and September 2016. The employers provided the information on total earnings as well as the deductions for tax, international and local travel expenses, insurance and accommodation. Deductions have been restricted to those costs that the workers were required to meet: half the cost of the airfare from their island country to New Zealand, half or all of the cost of transport to and from the place of employment in New Zealand to Auckland airport, a compulsory weekly payment for health insurance, a charge for accommodation and, in most RSE employment situations, a contribution towards the costs of using vehicles owned by the RSE while the workers were in New Zealand. Employers provided details of earnings before tax, and these standard deductions, as well as some profile information (age, marital status and, for the Ni-Vanuatu workers, their home islands).

The information on remittance transfers was obtained in a different way. These data were collected continuously during the period workers were employed and the information on amounts remitted were recorded weekly by a nominated recorder (a group leader, a pastoral care worker (“advocate” in the case of Seasonal Solutions) or an orchard supervisor). This information was then passed on to staff in the manager’s office who transferred the data onto spreadsheets that had been developed for the project.

Data on total remittances for each worker were obtained by aggregating the amounts recorded for the various transfers they made while employed. Data were also collected on the costs incurred by the Ni-Vanuatu workers when making their remittance transfers (these data were not collected in the initial pilot study of Samoans and Tongans). The great majority of Ni-Vanuatu workers (86 percent or 122) remitted some money during the time they were employed, although their frequency of remitting was quite low by comparison with the Samoans and Tongans included in the 2014/15 pilot study.

There are some challenges when it comes to comparing earnings and remittances for the 142 Ni-Vanuatu included in the 2016 survey, and the 487 Samoans and Tongans covered in the re-analysis of the 2014/15 pilot survey. The 142 Ni-Vanuatu worked, on average, for 20.4 weeks – a shorter average period than the Samoans (25.0 weeks) and Tongans (26.3 weeks). As a result, the data on total earnings and remittances for the Ni-Vanuatu workers cannot be compared directly with totals for the Samoan and Tongan workers covered in the earlier survey.

When examining data on actual earnings and remittances in the next section of this report the analysis is restricted to information collected from 100 Samoans and 60 Tongans who worked for 22 weeks in 2014/15 and for 77 Ni-Vanuatu who worked for 21 or 22 weeks in 2016. This ensures comparability in periods for earning and remitting. When the analysis focuses on weekly averages for measures of earnings and remittances, the differences in periods of employment between the three groups are not so critical. In these comparisons statistics for the total numbers of Samoan (264) and Tongan (223) workers included in our re-analysis of the 2014/15 data are compared with statistics for the total number of Ni-Vanuatu (142) surveyed in 2016.

### 1.1 Some characteristics of the workers included in this report

Data on the numbers of seasons participants had been employed as RSE workers were collected, along with some information on their age group and marital status. A summary of this information is provided in Appendix 1a (seasons of work) and 1b (age and marital status groups). There were some differences between the three groups in terms of their experience as seasonal workers, and these differences could have some bearing on their earnings and remittances given that more experienced workers tended to have higher earnings when paid on contract rates than the less experienced workers. These differences were not so marked when hourly rates were being paid.

In the case of work experience, higher percentages of Samoans (42 percent) and Tongans (45 percent) were in their first or second seasons of work (the less experienced group) than was the case with the Ni-Vanuatu workers (30 percent). A higher proportion of the Ni-Vanuatu (39 percent) were in their third or fourth seasons (often the most productive group) than

Samoans (28 percent) and Tongans (26 percent). All three groups had roughly similar shares back for their fifth or more season – Samoans (30 percent), Tongans (29 percent), Ni-Vanuatu (31 percent).

In terms of age and marital status there were big differences between the Samoans and Tongans, on the one hand, and the Ni-Vanuatu on the other (Appendix 1b). The Ni-Vanuatu workers in the 2016 survey were a much older group than the Samoans and Tongans in the 2014/15 survey. While 30 percent of the Ni-Vanuatu workers were aged 18-29 years, 51 percent of the Samoans and 62 percent of the Tongans were in this age group. Just under half (46 percent) of the Ni-Vanuatu workers were aged 30-39 years compared with 37 percent of the Samoans and 23 percent of the Tongans (Appendix 1b). Thirty percent of the Ni-Vanuatu were aged over 40 years compared with 13 percent of Samoans and 15 percent of Tongans.

These age differences are reflected in the martial status distributions as well (Appendix 1b). The highest percentage of single workers was found in the Tongan worker population (54 percent), reflecting their high proportion (62 percent) aged 18-29 years. At the other extreme were the Ni-Vanuatu, with 88 percent married or living in partnerships – only 16 (12 percent) of the 142 employees included in the 2016 survey were single. These different age and marital status characteristics may have an impact on gross as well as average weekly earnings and remittances. It could be hypothesized that younger, single workers might remit less than older, married workers who had families to support in their absence. These sorts of relationships can be explored crudely using the descriptive statistics employed in this analysis.

### 1.2 Focus and structure of this report

This report contains a lot of tables that report a range of descriptive statistics summarising the information collected in the 2014/15 and 2016 surveys. The analysis is in three parts. Section 2 details a range of summary statistics for total earnings, deductions and remittances for 237 workers employed for 21 or 22 weeks. These came from one RSE employing 100 Samoans for 22 weeks, one RSE employing 60 Tongans for 22 weeks, and three RSEs employing 77 Ni-Vanuatu for 21-22 weeks. In this section actual dollars earned, deducted and remitted are examined.

In section 3 comparative statistics on average weekly earnings, deductions and remittances are examined for the 264 Samoan, 163 Tongan and 142 Ni-Vanuatu workers for whom information on experience of seasonal employment was available. The 163 Tongans in this part of the analysis do not include the 60 whose total incomes, deductions and remittances were examined in section 2. For these Tongans no information was provided on seasonal work experience. The weekly averages are for 163 Tongans employed by two other RSEs for periods of 26-30 weeks.

The use of weekly averages for the earnings, deductions and remittances for each worker allows information from people with variable durations of employment to be used in the analysis. The focus is not on absolute amounts earned, deducted or remitted, which will be time-dependent to some extent; rather it is on weekly averages derived by dividing the totals earned and deducted by the number of weeks each worker was employed, and the total remittances by the number of weeks the worker actually remitted money while employed. These averages are compared by years of seasonal work experience.

Section 4 contains a review of the relationships between age and marital status on the one hand and average weekly earnings, deductions and remittances on the other. The data relate to 164 Samoans, 223 Tongans and 142 Ni-Vanuatu for whom information on these characteristics was provided. The 60 Tongans who could not be included in the analysis of work experience in section 3 are included in section 4 because data were provided on age and marital status by their employer. However, the 100 Samoans employed for 22 weeks, and whose information on total incomes, deductions and remittances were examined in section 2, are excluded from tables in section 4. This is because information was not provided on the ages and marital statuses of the 100 workers.

Many of the variables relating to earnings and remittances that have been used in the analysis, and the different statistical measures that are referred to in the text and the tables, are described in Appendix 2. The statistics are of two basic types: *positional* (maximum, minimum, median, upper and lower quartiles, interquartile range) and *arithmetic* (average or mean, standard deviation, coefficient of variation, correlation coefficient, coefficient of determination or percentage of explained variation). These statistics measure three different things: *central tendency* (median, average); *dispersion* (maximum, minimum, quartiles, inter-quartile range, standard deviation, coefficient of variation); *relationships* (correlation coefficient and coefficient of determination).

This may all sound rather complicated and "academic" but in fact the statistics are not complex and they are the most efficient way of summarizing what the data collected in the *RSE Remittance Pilot Project, 2014/15*, and the subsequent follow-up in 2016 with Ni-Vanuatu workers, tell us about earnings, deductions and remittances for Samoan, Tongan and Ni-Vanuatu RSE workers employed by eight orchards and recruiting companies. This report contains the evidence base on which the summary of key findings produced by MBIE (2015) is based and is a reference document for those interested in the data collected in the *RSE Remittance Pilot Project.*

## 2. SOME COMPARATIVE STATISTICS ON TOTAL INCOMES AND REMITTANCES

In this section measures of earnings, deductions and remittances are presented for the workers surveyed who were employed for 21 or 22 weeks. As noted above, the 100 Samoans

and 60 Tongans included in the analysis in this section were all employed, respectively, by two RSEs growing apples in the Hawke's Bay. The 77 Ni-Vanuatu were employed by three RSEs – two producing kiwifruit in the Bay of Plenty and one providing labour for the viticulture industry in Marlborough. The RSEs employing these workers have been anonymized in the discussion of the data relating to their workers and the analysis in this section is restricted to statistics relating to their total earnings, deductions and remittances – not to specific work experience, age or marital status groups.

### 2.1 Gross incomes

Statistics relating to the gross incomes of the three groups of workers over the 21 or 22 weeks of their employment in 2014/15 (Samoans and Tongans picking apples) and 2016 (Ni-Vanuatu picking kiwifruit or pruning grape vines) are shown in Table 1. The statistics that are referred to most frequently in the text are highlighted in red.

**Table 1: Gross incomes over 21/22 weeks (NZ$)**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 77 | 100 | 60 |
| *a) Positional statistics* | | | |
| Maximum income | 19,898 | 26,693 | 24,717 |
| Minimum income | 12,339 | 12,393 | 16,109 |
| Upper quartile | 16,804 | 22,359 | 22,229 |
| Median income | 15,058 | 21,350 | 20,611 |
| Lower quartile | 14,917 | 20,220 | 19,081 |
| Interquartile range | 1,888 | 2,140 | 3,148 |
| *b) Arithmetic statistics* | | | |
| Average or mean income | 15,842 | 21,344 | 20,535 |
| Standard deviation | 1,433 | 2,168 | 2,226 |
| Coefficient of variation | 9.0 | 10.2 | 10.8 |

It is immediately apparent from Table 1 that there are major differences in incomes for the apple-picking Samoans and Tongans and the Ni-Vanuatu picking kiwifruit and working on vineyards. The maximum, median and average incomes, before tax and any deductions, over the 21-22 weeks were around $5,000 less for the Ni-Vanuatu workers than those for the Samoans and Tongans. This is a difference of around 24 percent. These statistics lend support to comments made by Ni-Vanuatu workers interviewed in the Bay of Plenty, who had talked with fellow RSE workers from the Hawke's Bay about their earnings. Disparities in incomes

earned by RSE seasonal workers employed on piece or contract rates are well-recognised; what is perhaps not so widely acknowledged is that incomes may also vary by crop.

The 2014/15 apple crop was a very good one for most RSEs. By comparison, in 2016 many kiwifruit orchards, including one covered in the survey (Baygold Ltd), were still recovering from the devastating impact of the bacterial disease, *Pseudomonas syringae pv. actinidiae* (Psa). This, coupled with the fact that the 2016 picking season got off to a slow start because of low sugar content of the kiwifruit in a hotter than usual summer, meant that weekly earnings for seasonal workers were lower than those gained by field staff on apple orchards. The average gross incomes of 50 Ni-Vanuatu workers, that one RSE in the 2016 survey was providing for seasonal labour on vineyards, were higher ($16,521) than the average shown in Table 1 ($15,842). However, this was still well below the average gross incomes for the Samoans ($21,344) and Tongans ($20,535) employed for 22 weeks on two apple-growing orchards in the Hawke's Bay in 2014/15.

While there were some sizeable differences between maximum and minimum earnings for workers in the three groups, coefficients of variation between 9.0 and 10.8 percent are quite low indicating that there is not a lot variation in gross incomes within each of the groups. There was a difference of $14,300 between the highest ($26,693) and lowest ($12,393) incomes for the Samoans, while for the Ni-Vanuatu and Tongans these differences were between $7,500 and $8,600 respectively. The interquartile ranges and standard deviations are relatively low in relation to the medians and averages to which they relate. These statistics, along with the coefficient of variation, give us useful measures of variability within distributions of values (gross incomes in this case). There is more variation between the different measures of income earned by the group of 77 Ni-Vanuatu workers and those earned by the groups of 100 Samoans and 60 Tongans than there is between the workers within each of the groups.

Attention is drawn to within group and between group variability in this report and the companion statistical analysis of earnings and remittances by 487 Samoans and Tongans (Bedford & Bedford, 2016). The reason for this is that the initial reports on the 2014/15 *RSE Remittance Pilot Project* drew mainly on averages for different groups of workers (MBIE 2015; Gounder, 2015). On their own, without reference to associated statistics measuring variability in distributions, averages can give misleading impressions of uniformity within groups. In the case of total incomes for groups of RSE workers, this is not a major problem because there is not a lot of variability. But, as will become apparent in the discussion which follows, variability within groups can be significant and this means the averages should be interpreted with reference to relevant measures of dispersion.

The key findings from the 2014/15 and 2016 surveys, with regard to RSE worker incomes before tax and standard deductions (contributions to transport, medical insurance and accommodation costs) over 21-22 weeks, can be summarised as follows:

1) the group of apple-picking Samoans earned marginally higher incomes ($21,350 (median) or $21,344 (average)) than the group of apple-picking Tongans ($20,611 (median) or $20,535 (average));
2) the groups of Ni-Vanuatu workers, employed on kiwifruit and grape-growing farms, had incomes ($15,058 (median) or $15,842 (average)) that were around 24 percent lower than those found for the Samoan and Tongan groups.

These findings should not be taken to mean that Samoans and Tongans always earn more than Ni-Vanuatu RSE workers when employed for comparable periods. Paul Merwood's (2012, p.8) comprehensive analysis of return migration and earnings of RSE workers, drawing on data for all those employed in particular seasons, showed that for roughly comparable average periods of employment (around 5.0-5.5 months, or 20-22 weeks) Tongans had the highest mean (average) and median gross incomes, followed by Ni-Vanuatu and Samoans, during the first three years of the RSE scheme.

The significance of the above-mentioned findings is that major variations in gross income have obvious relevance for the magnitude of remittances sent back by RSE workers to their families and communities. We examine whether this is the case for the three groups shown in Table 1 after a brief discussion of the impact of income tax and other standard deductions on gross earnings.

### 2.2 Deductions (including income tax) and net incomes

The incomes of all RSE seasonal workers are subject to a standard tax rate of 11.94 percent. Most workers also have to pay from their earnings for a share of the costs of international airfares to get them to and from New Zealand (which can vary quite markedly, depending on where the worker is coming from), a standard medical insurance premium, a standard charge (usually weekly) for accommodation on or off the orchard, and a standard contribution towards the costs of transport associated with their daily orchard work. The costs do vary somewhat between groups of workers depending on which country they are from (international travel) or where they are accommodated (on-site, in rented houses or in other forms of accommodation) – there are no fixed rates other than the requirement that the worker pays half of the costs of the international airfare and that they all pay 11.94 percent of their income as tax.

Deductions for income tax and the standard charges for RSE workers listed above, across the 21-22 weeks of employment for the three groups, are shown in Table 2.

**Table 2: Deductions (including tax) over 21/22 weeks (NZ$)**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 77 | 100 | 60 |
| *a) Positional statistics* | | | |
| Maximum deductions | 7,031 | 6,784 | 6,732 |
| Minimum deductions | 5,570 | 5,075 | 5,703 |
| Upper quartile | 6,058 | 6,265 | 6,434 |
| Median deductions | 5,934 | 6,145 | 6,241 |
| Lower quartile | 5,915 | 6,010 | 6,058 |
| Interquartile range | 143 | 256 | 376 |
| *b) Arithmetic statistics* | | | |
| Average or mean deductions | 6,068 | 6,144 | 6,232 |
| Standard deviation | 328 | 259 | 266 |
| Coefficient of variation | 5.4 | 4.2 | 4.3 |

Not surprisingly, given their higher earnings, the Samoans and Tongans had higher median and average deductions than the Ni-Vanuatu, mainly as a result of higher tax liabilities. However, the differences were smaller than might have been expected, partly because Ni-Vanuatu workers each had to pay several hundred dollars more towards their international travel costs than Samoans and Tongans. The particular group of Samoan workers that worked for 22 weeks, while having the highest earnings of the three groups, had a lower weekly charge for accommodation than the Tongans which meant their gross incomes were reduced slightly less through deductions than the Tongans (Table 2).

The low interquartile range, standard deviation, and coefficient of variation for each group shows there is not much variation in these deductions between workers. Some experienced workers, who perform particular supervisory or pastoral care roles while employed, get recognised through higher wages (where hourly rates rather than contract rates are paid) or through some concessions on accommodation and international travel costs. However, the great majority of workers cover the full costs of standard deductions.

The net incomes for the three groups of workers, after tax and standard deductions are shown in Table 3. A $5,000-$6,000 differential between the net incomes for 21-22 weeks for the 100 Samoans and 60 Tongans on the one hand, and the 77 Ni-Vanuatu on the other has essentially persisted despite their slightly lower standard deductions. There has been a minor increase in variability in incomes after deductions, but the three groups have very similar coefficients of variation around 13 percent (Table 3).

**Table 3: Income after deductions and tax over 21/22 weeks (NZ$)**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 77 | 100 | 60 |
| *a) Positional statistics* | | | |
| Maximum income | 13,624 | 19,910 | 17,985 |
| Minimum income | 6,199 | 7,318 | 10.406 |
| Upper quartile | 10,456 | 16,094 | 15,794 |
| Median income | 9,114 | 15,205 | 14,367 |
| Lower quartile | 8,972 | 14,209 | 13,023 |
| Interquartile range | 1,484 | 1,884 | 2,771 |
| *b) Arithmetic statistics* | | | |
| Average or mean income | 9,773 | 15,200 | 14,303 |
| Standard deviation | 1,287 | 1,909 | 1,960 |
| Coefficient of variation | 13.2 | 12.6 | 13.7 |

The relative impact on gross incomes of these similar overall payments for deductions does differ. Samoans and Tongans have about 10 percent more of their gross income left after deductions than the Ni-Vanuatu (Table 4). The median ($9,114) and average ($9,773) net incomes for Ni-Vanuatu were the equivalent of around 60 percent of their respective gross incomes. In the case of the Samoans, the median ($15,205) and average ($15,200) net incomes were 71 percent of their respective gross incomes (Table 4).

**Table 4: Income after deductions as a percentage of gross income**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 77 | 100 | 60 |
| *a) Positional statistics* | | | |
| Maximum percentage | 68.5 | 74.6 | 72.8 |
| Minimum percentage | 50.2 | 59.1 | 64.6 |
| Upper quartile | 63.9 | 72.0 | 71.1 |
| Median percentage | 60.5 | 71.2 | 69.7 |
| Lower quartile | 60.2 | 70.3 | 68.3 |
| Interquartile range | 3.7 | 1.7 | 2.8 |
| *b) Arithmetic statistics* | | | |
| Average or mean percentage | 61.5 | 71.0 | 69.4 |
| Standard deviation | 2.9 | 2.1 | 2.0 |
| Coefficient of variation | 4.7 | 2.9 | 2.9 |

Another interpretation of the figures in Table 4 is that, on average, Ni-Vanuatu workers lost the equivalent of 39 percent of their gross incomes to tax and standard deductions on the orchard, while for Samoans and Tongans, these costs reduced their gross incomes by around 30 percent. These differences have relevance for both the frequency of remitting and the overall value of remittances sent home by these particular groups of workers. The gross income is obviously a critical determinant of the sums that can be remitted without compromising the funds available to live on while in New Zealand. We return to this matter when reviewing the residual incomes remaining after remittances have been deducted from the net incomes discussed above.

### 2.3 Remittances

Over the 21-22 weeks of their employment 226 (95 percent) of the 237 Ni Vanuatu, Samoan and Tongan workers remitted $1,055,032 (Table 5). This was equivalent to 23 percent of the $4,586,335 that the 237 earned. There were major differences, however, in the shares of total earnings that were remitted by the three groups. The Samoans and Tongans each remitted 27.7 percent of their total earnings. The Ni-Vanuatu workers who sent home money while working remitted 10 percent of their total earnings (Table 5). The $122,070 sent home by the 67 Ni-Vanuatu was equivalent to a third of the $340,953 sent home by the 60 Tongans.

**Table 5: Remitters and totals earned and remitted over 21/22 weeks**

| Measure | Ni-Vanuatu | Samoans | Tongans | Total |
|---|---|---|---|---|
| Total workers | 77 | 100 | 60 | 237 |
| Workers who remitted | 67 | 99 | 60 | 226 |
| % of workers remitting | 87.0 | 99.0 | 100.0 | 95.4 |
| Total earned (NZ$) | 1,219,820 | 2,134,387 | 1,232,128 | 4,586,335 |
| Total remittances* (NZ$) | 122,070 | 592,009 | 340,953 | 1,055,032 |
| % of income remitted | 10.0 | 27.7 | 27.7 | 23.0 |

* Just funds going to the islands, excluding remittance transfer costs

#### *Total value of remittances*

The differences in total remittances are very obvious in the statistics shown in Table 6 for the amounts each worker sent home. The maximum sum remitted by a Ni-Vanuatu worker employed for 21-22 weeks was $7,650. This compares with maximums of $13,241 for a Samoan worker and $11,700 for a Tongan worker (Table 6). The median and average total remittances for Samoans and Tongans are very similar, ranging from just under $5,700 to just under $6,000, while for Ni-Vanuatu these were in the $1,000-$1,800 range.

The high coefficients of variation for all three groups indicate that there was considerable variability in the total remittances sent home by workers – the averages and medians cannot

be taken to describe the sizes of the sums remitted by most of the members of any of the groups, especially the Ni-Vanuatu where there was a coefficient of variation in excess of 100 percent. This is because the standard deviation ($1,876) was actually larger than the average ($1,822). In other words, the remittances sent home by each worker deviated from the average for all workers, by a larger sum than the average remitted by all workers.

The other indicator of very substantial variations in the total amounts remitted by the 67 Ni-Vanuatu that did send money home is the much lower median value for remittances ($1,050) than average value ($1,822). This statistic tells us that 33 of the Ni-Vanuatu sent home less than this amount, while 33 sent home more than $1,050. In the cases of the Samoans and Tongans the median and average values for remittances by each group differed by less than $100 (Table 6). There was still a lot of variation in remittances between members of each of these groups, but their average values ($5,980, Samoans and $5,683, Tongans) were not well above the median values ($5,939, Samoans and $5,737, Tongans). In these cases, the averages had not been inflated by a small number of very high values for remittances.

**Table 6: Remittances (incl. final transfers) over 21/22 weeks (NZ$)**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number* | 67 | 99 | 60 |
| *a) Positional statistics* | | | |
| Maximum remittances | 7,650 | 13,241 | 11,700 |
| Minimum remittances | 90 | 300 | 1,610 |
| Upper quartile | 2,947 | 8,392 | 6,619 |
| Median remittances | 1,050 | 5,939 | 5,737 |
| Lower quartile | 400 | 3,365 | 4,501 |
| Interquartile range | 2,540 | 5,027 | 2,118 |
| *b) Arithmetic statistics* | | | |
| Average or mean remittances | 1,822 | 5,980 | 5,683 |
| Standard deviation | 1,876 | 3,244 | 2,065 |
| Coefficient of variation | 102.9 | 54.3 | 36.3 |

* 10 of the Ni-Vanuatu and 1 Samoan in these groups did not remit any money

In terms of percentages of gross income that were remitted, Samoans and Tongans had very similar shares (27.7 percent) with medians and averages also being the same, while Ni-Vanuatu had, on average, a much smaller share (just over 12 percent) and a significantly lower median (7 percent – a quarter of the median for the Samoans and Tongans (just under 28 percent)) (Table 7).

The Tongans had the greatest consistency in the percentages of income sent home with an interquartile range and a standard deviation of under 10 percent and a coefficient of variation of 35 percent. The least consistency was among the Ni-Vanuatu, with a larger standard deviation than the mean and, as a result, a coefficient of variation greater than 100 percent (Table 7).

**Table 7: Total remittances* as a percentage of gross income**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 67 | 99 | 60 |
| *a) Positional statistics* | | | |
| Maximum percentage | 49.0 | 63.6 | 57.1 |
| Minimum percentage | 0.7 | 1.4 | 6.9 |
| Upper quartile | 20.5 | 37.8 | 32.7 |
| Median percentage | 7.0 | 27.7 | 27.7 |
| Lower quartile | 3.1 | 16.8 | 23.2 |
| Interquartile range | 17.4 | 21.0 | 9.5 |
| *b) Arithmetic statistics* | | | |
| Average or mean percentage | 12.1 | 27.7 | 27.7 |
| Standard deviation | 12.5 | 14.3 | 9.7 |
| Coefficient of variation | 103.3 | 51.4 | 35.0 |

* Excluding transfer costs

### *Frequency of remitting and average value of remittances*

Ni-Vanuatu workers were also much less frequent remitters than the Samoans or Tongans (Table 8). On average, Ni-Vanuatu remitters sent money home just under three times (2.8) each while they were working in New Zealand. This compares with an average 8.7 remittance transfers by each Samoan worker, and an average of 12.9 transfers by each Tongan (Table 8). The maximum number of remittance transfers made by a Ni-Vanuatu worker over the 21-22 weeks was 7 compared with 21 for a Samoan (every week) and 20 for a Tongan worker. The coefficients of variation were large for all three groups (especially the Ni-Vanuatu and the Samoans) indicating considerable variability in the frequency of remitting.

Low frequency of remitting, in the Ni-Vanuatu case, translated into a much higher average value for each remittance ($719) than was found for the Samoan ($337) and Tongan ($318) workers (Table 9). However, this is a very misleading statistic because the median size for individual remittance transfers was virtually the same for all three groups -- $315, $300 and $313 respectively. The high Ni-Vanuatu average for individual transfers is very much affected by one or two very large transfers (including the maximum for $6,000) and this results in a

very high standard deviation ($921) relative to the mean ($719) and a corresponding coefficient of variation that is over 100 percent (Table 9).

**Table 8: Average number of remittance transfers over 21/22 weeks**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 67 | 99 | 60 |
| *a) Positional statistics* | | | |
| Maximum number | 7 | 21 | 20 |
| Minimum number | 1 | 1 | 1 |
| Upper quartile | 4 | 11 | 16 |
| Median number | 2 | 8 | 14 |
| Lower quartile | 2 | 5 | 10 |
| Interquartile range | 2 | 6 | 6 |
| *b) Arithmetic statistics* | | | |
| Average or mean number | 2.8 | 8.7 | 12.9 |
| Standard deviation | 1.6 | 4.8 | 4.6 |
| Coefficient of variation | 57.6 | 55.7 | 35.7 |

**Table 9: Average size of remittances* sent over 21/22 weeks (NZ$)**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 67 | 99 | 60 |
| *a) Positional statistics* | | | |
| Maximum remittances | 6,000 | 2,360 | 569 |
| Minimum remittances | 90 | 130 | 140 |
| Upper quartile | 983 | 362 | 394 |
| Median remittances | 315 | 300 | 313 |
| Lower quartile | 196 | 258 | 242 |
| Interquartile range | 787 | 104 | 142 |
| *b) Arithmetic statistics* | | | |
| Average or mean remittances | 719.1 | 337.2 | 318.3 |
| Standard deviation | 921.2 | 225.7 | 92.9 |
| Coefficient of variation | 128.1 | 66.9 | 29.2 |

* Excluding transfer costs

Another perspective on remitting is provided in Table 10 where the values of each transaction during the time the workers were employed are examined in three bands that relate to

transfer fees charged by Western Union, the major money transfer agent used by Pacific workers for remittances. Not included in the data in Table 10 are the large transfers in the final week which often included accumulated savings and holiday pay.

Leaving aside the major differences in frequency of remitting, which has already been mentioned and is examined further below, Ni-Vanuatu workers remitted the highest proportion of sums in excess of $1,000 when they made their transfers. Of the 171 transactions they made while working, 5.8 percent were for more than $1,000 and these 10 transactions accounted for 31.7 percent of the money that was sent home. These transactions incur a transfer fee of $35 each and accounted for 9.6 percent of the total fees paid by the Ni Vanuatu (Table 10).

**Table 10: Remittance transfers while working (excl. final week)**

| Measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number of remitters | 67 | 99 | 60 |
| Number of transactions | 171 | 798 | 776 |
| Value of transations (NZ$) | 61,370 | 255,960 | 253,353 |
| Cost of transfers (NZ$)* | 3,655 | 16,540 | 16,870 |
| Average (Av.) value of transfers (NZ$) | 359 | 324 | 326 |
| Av. no remittances per person | 2.6 | 8.1 | 12.9 |
| Av. value of remittances per person ($NZ) | 916 | 2,585 | 4,223 |
| *% of all transactions that were* | | | |
| ≤ $500 | 84.2 | 88.5 | 87.8 |
| $501-1,000 | 9.9 | 10.0 | 9.0 |
| > $1,000 | 5.8 | 1.5 | 2.3 |
| *% of total value of transactions that were* | | | |
| ≤ $500 | 45.9 | 73.2 | 69.4 |
| $501-1,000 | 22.4 | 20.3 | 21.0 |
| > $1,000 | 31.7 | 6.5 | 9.6 |
| *% of total cost of transfers that were* | | | |
| ≤ $500 | 78.8 | 85.4 | 80.4 |
| $501-1,000 | 11.6 | 12.1 | 15.9 |
| > $1,000 | 9.6 | 2.5 | 3.7 |

* Transfer costs were recorded for the Ni-Vanuatu remittances but not for those made by Samoans and Tongans. In these cases the costs shown above are those that would have applied if Western Union had been used as their transfer agent.

Notwithstanding the higher proportion of funds remitted in large transfers, the great majority of individual transactions by Ni-Vanuatu were for $500 or less – just under 85 percent. These accounted for 46 percent of the money sent home and incurred just under 79 percent of the

total spent on transfer fees (Table 10). The remittances sent home by Samoan and Tongan workers were more heavily concentrated in the $500 or less remittance band (88 percent), which incurs a $20 fee for each transfer. These transfers accounted for over 80 percent of the funds Samoans and Tongans might have spent on fees if they had used Western Union as their money transfer agent. It is likely that most workers did use this agent – it is the main one used throughout the Pacific.

Remittances from $501 up to and including $1,000 incur a transfer fee of $25 if the agent used is Western Union. Around 10 percent of the transfers made by workers in the three groups were for sums within this range, often $600 or $700, and these transfers accounted for 20-22 percent of the total sums sent. Towards the end of their period of employment a small number of the Ni-Vanuatu workers employed by Eastpack started using WestPack's Moneygram service which had a $10 charge on transfers of $500 or less and $25 for transfers of $3,000.

The differences noted in the frequency of remitting between the Ni-Vanuatu on the one hand and the Samoan and Tongan workers on the other could be linked to a much less developed practice of remitting cash via international bank transfers among Ni-Vanuatu than is the case among Samoans and Tongans with their long-established diaspora in New Zealand and Australia. Remittances from overseas have been a critical component of Samoan and Tongan international migration since the 1960s. Ni-Vanuatu have not had the same sort of access to employment opportunities in Pacific rim countries until very recently. Transferring money to families based in villages has also been restricted by access to appropriate money transfer agents in rural parts of Vanuatu.

In her detailed research on the engagement of Ni-Vanuatu from Ambrym with the RSE scheme since 2007, Bailey (2015, 2014, 2013) cautions against just focussing on cash remittances when assessing the shares of total earnings that make their way back to village communities. Purchase of goods in New Zealand and their transfer via containers (or as excess luggage carried home by workers), as well as workers carrying cash home, are important remittance mechanisms. In the case of Ni-Vanuatu workers included in the 2016 earnings and remittance survey, some information was obtained on investments made by individual workers in space in containers obtained by Eastpack to transfer goods purchased in New Zealand to Vanuatu. These investments, just to acquire space, were made by 30 of the 52 workers in the survey, and totalled $11,590. The cost of container space was the equivalent of almost a third of the $39,705 remitted by Eastpack's 52 workers during their 22 weeks of work in the Bay of Plenty.

Information on money carried home is scarce, but one of the groups of Ni-Vanuatu employed by Seasonal Solutions provided data on the final withdrawals they made from their bank accounts on completion of their contracts. The 28 workers withdrew $70,563 in their last week and 9 of these workers remitted 36 percent of this ($25,880) in that week. The balance ($44,683) was taken as cash. This cash balance is equivalent to almost half of the total amount

($88,209) remitted by the 50 Seasonal Solutions survey respondents before their final week transfers of $41,730. The 28 workers for whom data on final withdrawals are available carried home, on average, just under $1,600 each with the maximum "carry home" balance being $4,300 and the minimum $200. Nine of the workers had carry home balances in excess of $2,000.

### *Some key findings on remittances*

The key findings from this comparative analysis of remittances by 67 Ni-Vanuatu, 99 Samoans and 60 Tongans who were employed for 21 or 22 weeks are:

1) The groups of Samoan and Tongan workers employed on apple orchards in 2014/15 remitted much larger sums and proportions of their gross earnings than the Ni-Vanuatu groups employed in the Bay of Plenty and Marlborough in 2016;
2) The median total remittances for the Samoan ($5,939) and Tongan ($5,737) workers were five times larger than the median total remittances for the Ni-Vanuatu workers ($1,050);
3) The numbers of remittance transfers made by Samoans (798) and Tongans (776) were over four times larger than the number of transfers made by Ni-Vanuatu (171);
4) There was considerable variability in total remittances made by individual workers within the three groups, especially the Ni-Vanuatu (coefficient of variation 103 percent);
5) Whereas less than half (48 percent) of the money sent home by Ni-Vanuatu was in transfers of $500 or less, around 70 percent of remittances by Samoans (73 percent) and Tongans (69 percent) were for sums between $50 and $500 at a cost of $20 per transfer via Western Union;
6) Much larger remittances than average in the final week of employment were common, especially among the Samoans. Of the total remitted by the 99 Samoans ($592,009) 58 percent ($336,049) was sent home in the final week and 42 percent ($255,960) was sent home in 798 transfers while workers were employed;
7) In addition to remittances of money, many workers booked space in containers to carry goods purchased in New Zealand back to the islands (remittances "in kind"). Information on investment in container space was obtained from 30 Ni-Vanuatu workers who paid $11,590 to reserve such space – the equivalent of almost a third of the total ($39,705) remitted by the 52 workers employed by the RSE who arranged the container space;
8) The third type of transfer of earnings back to the islands is in the form of cash carried home by workers. Information on "carry home" cash balances was obtained from 28 Ni-Vanuatu workers who, between them, withdrew $70,563 from their bank accounts in the last week they were in New Zealand, remitted 36 percent of this ($25,880) during that week, and departed for Vanuatu with the remaining 64 percent ($44,683) as cash in hand.

## 2.4 Residual incomes

Remittances and deductions are removed progressively from the weekly or fortnightly earnings of seasonal workers. The residual incomes, after these deductions, provide workers with the available funds to cover essential living expenses, including food, clothing, communication (especially costs of phone calls to family in the islands), entertainment and costs of cigarettes (smoking is quite widespread among seasonal workers). Weekly earnings can vary depending on the tasks being performed, the weather, the health of the worker, the size and quality of the fruit, among other things. It is not possible to derive actual residual incomes on a weekly or fortnightly basis, but an "average" residual income can be calculated by deducting from gross earnings the total amounts paid in taxes, standard deductions that apply to all workers employed by a particular RSE, and remittance transfers during the time the worker is employed.

In this final part of the section on actual incomes, deductions and remittances we examine briefly the total residual incomes for the three worker groups, and the percentages of the gross incomes that are remaining after deductions (including tax) and remittances (including transfers in the final week) are accounted for. The average weekly residual incomes, which give a crude indication of funds available to cover discretionary expenditure, are examined in the next section with reference to the experience workers have of seasonal work in New Zealand.

The income disparity between the Samoan (100) and Tongan (60) worker groups on the one hand and the group of Ni-Vanuatu workers (77) on the other, for whom we have data on earnings, deductions and remittances over 21-22 weeks, is greatly reduced once deductions and remittances are accounted for (Table 11).

**Table 11: Residual incomes after deductions and remittances ($NZ)**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 77 | 100 | 60 |
| *a) Positional statistics* | | | |
| Maximum income | 13,624 | 18,303 | 15,126 |
| Minimum income | 2,482 | 1,227 | 1,462 |
| Upper quartile | 9,762 | 10,774 | 9,816 |
| Median income | 8,524 | 8,877 | 8,507 |
| Lower quartile | 7,303 | 7,201 | 7,358 |
| Interquartile range | 2,459 | 3,573 | 2,458 |
| *b) Arithmetic statistics* | | | |
| Average or mean income | 8,134 | 9,280 | 8,621 |
| Standard deviation | 2,394 | 3,573 | 2,464 |
| Coefficient of variation | 29.4 | 34.3 | 28.6 |

The $5,000-6,000 differentials in median and average gross (Table 1) and net incomes (after deductions) (Table 3) are replaced by much smaller differentials in median and average residual incomes (after remittances are deducted) (Table 11). The median residual income for Ni-Vanuatu workers ($8,524) is slightly higher than that for Tongan workers ($8,507) and $350 less than the median for the Samoans ($8,877) (Table 11). In the case of average residual incomes the differences are somewhat greater, but across the range of statistics shown in Table 11 the gap between the incomes for the Ni-Vanuatu group and those of the Samoan and Tongan groups have narrowed considerably.

The main effect of the much larger total remittance transfers by Samoan and Tongan workers (Table 6) has been to produce residual incomes that are similar for all groups, suggesting that there may be some sort of threshold for the amount of money required to cover living expenses, purchases of personal goods to send/take home (remittances "in kind") and to ensure there is sufficient cash remaining in the bank to allow for some "carry home" funds when workers leave New Zealand. There remains quite considerable variability in the residual incomes, with minimums being well below the medians or the averages in all three groups. Minimum residual incomes in the range of $1,200 (Samoan), $1,500 (Tongan) and $2,500 (Ni-Vanuatu) clearly are not viable for covering living expenses over a five-month period. But these are the residual incomes for small numbers in each group based on their gross earnings, their deductions for tax and some standard employment-related costs, and their remittances.

Residual incomes as a percentage of gross earnings are shown in Table 12. Deductions and remittances accounted for, on average, somewhere between 40 and 50 percent of the gross incomes of the three groups of workers. The Tongans, with their higher average remittances, had residual incomes with the smallest maximum (65), median (42) and average (42) percentages of gross income remaining. By contrast, the Ni-Vanuatu workers, with their much lower maximum, median and average remittances had the largest median (57) and average (51) percentages of gross income remaining.

The greatest extremes in percentages of gross earnings remaining as residual incomes shown in Table 12 were for the Samoan workers. The very large gap between their maximum percentage (72.5) and minimum percentage (6.2) was reflected in the largest interquartile range (20.4 percent) and the highest standard deviation (14.2 percent) and coefficient of variation (32.6 percent) (Table 12). For the 25 Samoans below the lower quartile of 33.9 percent, two-thirds or more of their gross incomes had been spent on deductions and remittances. The 15 Tongans below the lower quartile of 36.9 were slightly better off (63 percent had gone on deductions and remittances) while the 19 Ni-Vanuatu workers below the lower quartile of 44.7 percent were in a better position again. They had spent, on average, around 55 percent of their earnings on deductions and remittances.

**Table 12: Residual income as a percentage of gross income**

| Statistical measure | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 77 | 100 | 60 |
| *a) Positional statistics* | | | |
| Maximum percentage | 68.5 | 72.5 | 64.9 |
| Minimum percentage | 15.9 | 6.2 | 8.6 |
| Upper quartile | 59.4 | 54.3 | 46.6 |
| Median percentage | 56.9 | 43.3 | 41.9 |
| Lower quartile | 44.7 | 33.9 | 36.9 |
| Interquartile range | 14.8 | 20.4 | 9.7 |
| *b) Arithmetic statistics* | | | |
| Average or mean percentage | 50.9 | 43.6 | 41.7 |
| Standard deviation | 12.8 | 14.2 | 10.1 |
| Coefficient of variation | 25.2 | 32.6 | 24.2 |

## 2.5 Some implications of findings from this section

A comparative analysis of earnings, deductions and remittances for groups of Samoan, Tongan and Ni-Vanuatu men employed continuously for 21-22 weeks (around 5 months) in seasonal employment, albeit in two different seasons (2014/15 and 2016), has revealed some significant differences in incomes and remittances. The gross incomes and the total amounts of money remitted home were much higher for Samoans and Tongans picking apples in the Hawke's Bay in 2014/15 than they were for Ni-Vanuatu picking kiwifruit and pruning grape vines in 2016.

Some of the variation in earnings relates to the way workers were paid. All of the Samoans and Tongans were paid mainly piece rates for thinning and picking fruit. Slightly more than half (52 percent) of the 77 Ni-Vanuatu workers were paid an hourly rate (over $15 an hour) for work in kiwifruit orchards while the other 48 percent were paid mainly piece rates. Some of the variation in earnings also relates to the crop the workers were dealing with. The apple pickers were dealing with a bumper crop in 2014/15 – it was a good season for orchards in the Hawke's Bay. The kiwifruit pickers, on the other hand, were dealing with a crop that had a delayed start to the picking season because of warmer than usual temperatures and low sugar content of the fruit. Earnings for both Baygold's and Eastpack's workers in the first few weeks of their contracts were affected by this delayed start. The highest earnings among the three Ni-Vanuatu groups were recorded for the grape pruners in Marlborough working through Seasonal Solutions. While these were higher, on average, than the earnings for the kiwifruit pickers, they were still quite a bit less than the apple pickers in 2014/15.

A significant finding relating to the three groups of workers is the considerable variability in some of the measures of income and remittances. This variability is not always acknowledged in analyses of earnings and remittances, yet it is important because it tempers a tendency to over-generalise about both the amounts of money seasonal workers earn over a period of five months, and the sizes of sums remitted as well as the frequency of remitting by workers from different Pacific Island countries in New Zealand.

The analysis of actual earnings, deductions and remittances for groups of workers from three Pacific countries, working in different regions and with different crops, has allowed for a more realistic assessment of some of the standard costs of participation in the RSE scheme as well as the practice of remitting funds back to the islands while Pacific workers are employed in New Zealand. There has still not been a comprehensive cost-benefit analysis of participation in the scheme by Pacific workers, and this study does not fill this gap. But the brief analysis of residual incomes, especially those at the lower end of the range, suggests that it would be useful to get more comprehensive information on the actual costs of living in New Zealand for Pacific Islanders while undertaking seasonal work.

On the basis of information that can be generated from earnings, deductions and remittances it is clear that some workers from Samoa, Tonga and Vanuatu have very little money available to cover their basic living expenses. This must have implications for their diets, their health and their well-being. Knowing averages is not enough – there is more variation within the seasonal worker populations in terms of their earnings and patterns of remitting than is generally understood. This needs to be more widely acknowledged and assessed with reference to the real costs of participating in New Zealand's "best practice" seasonal work scheme (Gibson & McKenzie, 2014).

## 3. THE IMPACT OF SEASONAL WORK EXPERIENCE ON INCOMES AND REMITTANCES

The discussion in this section focuses on the impact of seasonal work experience on the earnings and remittances of workers. Rather than working with total earnings and remittances, which required directly comparable periods of work (such as the groups discussed in section 2), the data used in this section are weekly averages – the total incomes or remittances divided by the number of weeks the worker was employed or, for remittances, made transfers of funds to the islands. This allows us to draw on the larger survey populations and here we compare information obtained from 142 Ni-Vanuatu employed over periods of 18-22 weeks with information collected from 264 Samoans and 163 Tongans employed for between 22 and 30 weeks. The seasons of work experience for the different groups are detailed in Appendix 1a.

The two questions that underpin the analysis in this section are: 1) does increasing experience of seasonal work over successive seasons result in increasing weekly average incomes for

workers, and 2) does increasing experience of seasonal work have any impact on the frequency of remitting or the amounts of money remitted, on average, each week? It is important to appreciate that the weekly averages used are not real earnings or remittances; they are the total earnings and remittances distributed evenly over the periods of work. In this sense, they are more like comparative indices and should not be treated as measures of actual weekly incomes or remittances. This does not diminish their value for analytical purposes: the objective is to see how the different groups compare on comparable measures of income and remittances and these weekly averages are such measures.

It has been shown in earlier research on the productivity of RSE workers that both actual earnings and average weekly earnings increase in the second and third seasons and then have a tendency to begin to plateau in the fourth season before, sometimes, dipping in the fifth and sixth seasons and then rising for some workers in their seventh or subsequent seasons (C. Bedford, 2014, 2013). In the next part of this section we examine whether this is the case with the earnings of the Ni-Vanuatu, Samoans and Tongans included in the *RSE Remittance Pilot Project*.

### 3.1 Does increasing work experience result in increasing average weekly incomes?

The average weekly incomes for the three groups are shown in Table 13. When assessing these figures it is important to note that while the Ni-Vanuatu and Samoan groups include the workers who were the subject of discussion in the previous section, the 163 Tongans do not include the 60 Tongans employed for 22 weeks by Taylor Corporation. Information on the numbers of seasons these men had been employed as RSE labour was not provided at the time of the survey in 2014/15 (Bedford & Bedford, 2016).

#### *Average weekly gross incomes*

Table 1 showed that the 60 Tongans had higher gross incomes over 22 weeks than the 77 Ni-Vanuatu workers employed for 21-22 weeks. For the 163 Tongans whose average weekly gross incomes are shown in Table 13, the situation is reversed; the 142 Ni-Vanuatu actually have higher gross incomes. For the groups as a whole, the 264 Samoans had the highest median ($862) and mean ($863) average weekly gross incomes, followed by the Ni-Vanuatu ($785 and $782 respectively) and Tongans ($709 and $703 respectively) (Table 13).

**Table 13: Average weekly gross incomes by work experience**

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 264 | 163 |
| *Median weekly income (NZ$)* | | | |
| First season | 679.20 | 838.43 | 646.95 |
| Second season | 778.31 | 890.93 | 672.80 |
| Third season | 807.86 | 835.40 | 706.63 |
| Fourth season | 842.15 | 865.06 | 716.44 |
| Fifth or sixth season | 812.61 | 851.51 | 738.76 |
| Seventh or more seasons | 681.23 | 893.14 | 805.53 |
| All workers | 784.76 | 861.53 | 708.53 |
| *Average weekly income (NZ$)* | | | |
| First season | 696.07 | 813.63 | 642.00 |
| Second season | 756.79 | 871.83 | 675.46 |
| Third season | 814.40 | 854.96 | 708.57 |
| Fourth season | 815.58 | 874.27 | 718.43 |
| Fifth or sixth season | 818.50 | 875.64 | 738.76 |
| Seventh or more seasons | 782.41 | 862.66 | 703.12 |
| All workers | 782.41 | 862.66 | 703.12 |
| *Coefficient of variation (%)* | | | |
| First season | 8.16 | 13.29 | 15.26 |
| Second season | 8.87 | 12.49 | 19.92 |
| Third season | 8.55 | 13.74 | 16.40 |
| Fourth season | 15.54 | 13.68 | 13.82 |
| Fifth or sixth season | 13.28 | 14.84 | 14.13 |
| Seventh or more seasons | 11.08 | 16.58 | 14.39 |
| All workers | 13.04 | 14.28 | 17.32 |
| *Correlation analysis* | | | |
| Correlation coefficient | 0.175 | 0.202 | 0.405 |
| Coefficient of determination (%) | 3.1 | 4.1 | 16.4 |

The average weekly gross incomes received by workers can vary quite considerably between RSEs for a number of reasons, and in this case the 163 Tongans were receiving lower average weekly gross incomes than the 60 employed by Taylor Corporation.[1] The figures presented in this report on differences in incomes between Ni-Vanuatu, Samoan and Tongan workers clearly do not come from representative samples of all RSE workers from the three countries.

[1] Information on the average weekly incomes for three groups of Samoans and two groups of Tongans can be found in our report on the statistical analysis of the data on earnings and remittances for seasonal workers from Samoa and Tonga in the Hawkes Bay in 2014/15 (Bedford & Bedford, 2016).

There were some differences in the patterns of average weekly gross incomes by years of seasonal work experience for the three groups (Table 13). The correlation coefficients, shown at the bottom of the table, indicate that the relationship between average weekly gross income and years of experience as a seasonal worker, is strongest for Tongans and weakest for the Ni-Vanuatu.

In terms of median incomes, the Ni-Vanuatu workers earned progressively higher amounts through the first to fourth seasons before incomes dipped and then dropped quite sharply in the seventh and subsequent years. The respective average or mean incomes showed the plateauing effect referred to earlier between the third and sixth seasons (the difference in average weekly income between third season workers and those in their fifth or sixth seasons was only $4.10 – hardly a major premium on experience – before dropping in the seventh and subsequent seasons). The most obvious difference in average weekly earnings was between the first ($696) and second season ($757) workers – a difference of just under $61 a week or nine percent. This pattern for first and second season workers was repeated across the three groups.

In the case of the Tongans, median weekly gross incomes increased consistently with experience from $647 for first season workers to $806 for those in their seventh or more seasons of work. In the case of average weekly incomes those in their seventh or more years earned $35 a week less than those in their fifth or sixth season mirroring the pattern for average earnings by these work experience groups for Ni-Vanuatu and Samoans. In the case of median weekly earnings, the Tongans and Samoans with seven or more seasons of experience earned slightly more than those in their fifth or sixth seasons of work (Table 13).

Among the Samoans, all groups by experience earned, on average, over $810 a week, and the difference between the highest earning (fifth or sixth season -- $876) and lowest earning (first season - $814) groups was $62 a week averaged over the time of their employment. There was a minor dip in average and median weekly earnings for Samoans in the third season, but earnings recovered in the fourth season before plateauing across the fifth and sixth seasons. The pattern of a plateauing of incomes somewhere between the third and fifth seasons, while not found for the Tongans in Table 13, seems to be supported by data for the Ni-Vanuatu and the Samoans.

The data shown in Table 13 for all three groups demonstrates clearly that the major productivity gains, in terms of earnings by season, are within the first two to three years of work experience. In the case of the 142 Ni-Vanuatu, average weekly incomes increased by $118 between the first ($696) and third ($814) seasons – an increase of 17 percent. For the 264 Samoans the big increase in average weekly incomes was between the first ($814) and second ($871) seasons -- $57 a week or seven percent. Among the 163 Tongans it was between the first ($642) and third ($709) seasons -- $67 a week or 10 percent. After the second or third season average weekly earnings generally increased by smaller amounts and, at times, decreased.

### *Average weekly net incomes*

The effect of tax and standard orchard deductions on average weekly gross incomes for the three groups was to reduce them, on average over the period of employment, by between $238 a week (Tongans, from $703 to $465) and $292 a week (Ni-Vanuatu from $782 to $490) (Tables 13 and 14). The Ni-Vanuatu had the greatest percentage reduction in gross earnings through these deductions (37 percent), followed by Tongans (34 percent) and Samoans (31 percent). The greater impact of deductions on the Ni-Vanuatu workers is largely due to the higher costs they pay for international travel to New Zealand. The higher weekly gross earnings for the Samoans account for the lower impact of deductions on their net incomes by comparison with the Tongans.

**Table 14: Average weekly net incomes by work experience**

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 264 | 163 |
| *Median weekly income (NZ$)* | | | |
| First season | 409.69 | 565.56 | 406.74 |
| Second season | 487.88 | 621.83 | 436.80 |
| Third season | 529.39 | 587.38 | 475.33 |
| Fourth season | 517.14 | 607.50 | 497.86 |
| Fifth or sixth season | 500.61 | 603.12 | 514.75 |
| Seventh or more seasons | 411.48 | 626.84 | 580.91 |
| All workers | 494.24 | 605.02 | 459.90 |
| *Average weekly income (NZ$)* | | | |
| First season | 415.92 | 543.81 | 394.24 |
| Second season | 469.79 | 604.76 | 435.12 |
| Third season | 527.05 | 590.08 | 476.24 |
| Fourth season | 510.27 | 609.34 | 486.21 |
| Fifth or sixth season | 514.15 | 615.19 | 502.17 |
| Seventh or more seasons | 452.55 | 643.45 | 568.84 |
| All workers | 490.35 | 597.08 | 465.31 |
| *Coefficient of variation (%)* | | | |
| First season | 15.1 | 19.3 | 18.8 |
| Second season | 11.8 | 16.1 | 26.8 |
| Third season | 11.3 | 18.0 | 18.2 |
| Fourth season | 20.5 | 17.2 | 17.3 |
| Fifth or sixth season | 18.0 | 18.2 | 18.5 |
| Seventh or more seasons | 15.9 | 20.7 | 16.6 |
| All workers | 17.4 | 18.72 | 23.0 |

The patterns of average weekly net incomes by seasonal work experience essentially mirror those shown for the average weekly gross incomes in Table 13. A general change is that the

differences in incomes between the three groups of workers become smaller. There was a difference of $160 a week in average gross incomes for Samoans ($863) and Tongans ($703), and $79 a week between Ni-Vanuatu ($782) and Tongans (Table 13). After tax and deductions have been removed, the differences fall to $132 a week between Samoans ($597) and Tongans ($465), and $25 between Ni Vanuatu ($490) and Tongans (Table 14).

### *Average weekly residual incomes*

There are much more substantial changes in average weekly incomes once remittance transfers are accounted for. The average weekly residual incomes shown in Table 15 reflect the impact of much higher levels of remitting among the Samoans and Tongans surveyed in 2014/15 than among the Ni-Vanuatu workers included in the 2016 survey.

**Table 15: Average weekly residual incomes by work experience**

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 264 | 163 |
| *Median weekly income (NZ$)* | | | |
| First season | 395.94 | 336.93 | 210.77 |
| Second season | 406.24 | 342.06 | 235.78 |
| Third season | 494.53 | 335.85 | 229.42 |
| Fourth season | 376.06 | 323.07 | 272.58 |
| Fifth or sixth season | 415.35 | 356.75 | 223.08 |
| Seventh or more seasons | 372.92 | 310.75 | 241.00 |
| All workers | 406.01 | 330.79 | 232.26 |
| *Average weekly income (NZ$)* | | | |
| First season | 371.49 | 348.25 | 216.16 |
| Second season | 378.53 | 366.41 | 255.39 |
| Third season | 465.39 | 343.89 | 230.30 |
| Fourth season | 389.89 | 324.79 | 267.49 |
| Fifth or sixth season | 411.79 | 370.42 | 230.02 |
| Seventh or more seasons | 325.75 | 347.63 | 239.04 |
| All workers | 400.98 | 352.68 | 237.93 |
| *Coefficient of variation (%)* | | | |
| First season | 23.2 | 34.8 | 42.1 |
| Second season | 30.1 | 43.5 | 34.6 |
| Third season | 22.5 | 36.1 | 44.7 |
| Fourth season | 29.8 | 45.1 | 45.7 |
| Fifth or sixth season | 23.6 | 39.9 | 53.3 |
| Seventh or more seasons | 47.2 | 38.6 | 67.1 |
| All workers | 28.6 | 39.5 | 46.3 |

The average weekly residual incomes for the 264 Samoans ($353) and 163 Tongans ($238) are over $200 a week less than their respective average weekly net incomes ($597 and $465)

(Tables 14 and 15). In the case of the 142 Ni-Vanuatu, the average weekly residual income ($401) is $90 lower than the respective average weekly net income ($490). By the time remittances have been accounted for Ni-Vanuatu have higher median weekly residual incomes than the Samoans at all levels of seasonal work experience, and higher average weekly residual incomes except for those with seven or more years of experience.

Another way of looking at the effects of remittances on workers' incomes is to compare the average weekly residual incomes with the equivalent weekly net incomes. This is done in Table 16 where the percentage changes between average weekly net and residual income are shown for the different work experience categories (Table 16). For the heavy remitting Tongans, the equivalent of just under 50 percent of their average weekly net incomes was being remitted, and for the most experienced workers, the share remitted was approaching 60 percent.

**Table 16: Impact of remittance transfers on average weekly net incomes**

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| *Median weekly income (% reduction)* | | | |
| First season | 3.4 | 40.4 | 48.2 |
| Second season | 16.7 | 45.0 | 46.0 |
| Third season | 6.6 | 42.8 | 51.7 |
| Fourth season | 27.3 | 46.8 | 45.3 |
| Fifth or sixth season | 17.0 | 40.9 | 56.7 |
| Seventh or more seasons | 9.4 | 50.4 | 58.5 |
| All workers | 17.9 | 45.3 | 49.5 |
| *Average weekly income (% reduction)* | | | |
| First season | 10.7 | 36.0 | 45.2 |
| Second season | 19.4 | 39.4 | 41.3 |
| Third season | 11.7 | 41.7 | 51.6 |
| Fourth season | 23.6 | 46.7 | 45.0 |
| Fifth or sixth season | 19.9 | 39.8 | 54.2 |
| Seventh or more seasons | 28.0 | 46.0 | 58.0 |
| All workers | 18.2 | 40.9 | 48.9 |

The Samoans had somewhat lower reductions in average weekly earnings after remittance transfers were accounted for (45 percent on median net incomes, and 41 percent on average net incomes) while the largest percentage change in net incomes following remittances recorded for the Ni-Vanuatu was 28 percent for those in their seventh or more seasons of work (Table 16).

It has already been noted in section 2 that the combined effect of tax, standard deductions and remittances on the gross incomes of RSE workers can be very significant in terms of

residual incomes available to support living in New Zealand. Table 15 shows that for the 163 Tongans none of the work experience groups had median or average weekly residual incomes in excess of $280 or the equivalent of an average of $40 a day to live on. The first season workers had median ($211) and average ($216) weekly residual incomes of just over $30 a day. This is not a lot of money to cover all food, clothing, communication and other discretionary expenditure on a daily or weekly basis.

Admittedly, these are not "actual" weekly residual incomes, but ones derived from total gross, net and residual incomes distributed evenly over the weeks the workers were employed. Workers would have adjusted their patterns of remitting to suit the incomes they had available for spending and this is clearly apparent in the first few weeks of employment when advances for the half airfares and any initial "start-up" loans from employers for food and accommodation are re-paid. However, the fact that 50 percent of the 163 Tongan workers had average weekly residual incomes of less than $232 (the median for the total group), or just over $33 a day, suggests that there are quite a lot of workers living on quite small amounts of uncommitted income. In the case of the 142 Ni-Vanuatu workers, 50 percent of them were living on weekly incomes averaging less than $406 a week or $58 a day – a rather different situation from the Tongans as far as disposable incomes goes.

### *Summary*

The key findings on the relationship between average weekly incomes and experience as seasonal workers can be summarised as follows:

1) Average gross, net and residual weekly incomes increased most significantly over the first three or four seasons of employment before tending to plateau and sometimes decline among those back for seven or more seasons. The pattern is variable but there is a noticeable plateau in earnings after the first three or four seasons especially for those employed on piece rates.
2) The significant differences in average gross weekly incomes between Samoans ($863) on the one hand and Ni-Vanuatu ($782) and Tongans ($703) on the other were less pronounced once tax and standard deductions were removed. Once remittances were taken into account, average residual weekly incomes were highest among the Ni-Vanuatu ($401) with those for Samoans ($353) and Tongans ($238) reflecting the impact of their much more intensive remitting.
3) The impact of remittances on the lower gross weekly incomes of the Tongans was especially noticeable in the share workers whose average weekly residual incomes were under $210 per week, or an average of $30 a day. Just over 40 percent of the 163 Tongan workers had average weekly residual incomes at this level, compared with 13 percent of Samoans and less than 6 percent of Ni-Vanuatu.
4) In the light of these substantial variations in different types of average weekly income (gross, net, residual) between groups of Pacific seasonal workers, a more exhaustive study of the costs associated with spending extended periods in temporary employment on piece rates or on hourly rates close to the minimum wage would provide useful information on workers' living standards.

### 3.2 Does increasing work experience result in larger and more frequent remittances?

The analysis of remittances employs weekly averages for the value of remittances rather than total amounts workers sent home over the time of their employment. This is because of the variable periods of time (18-30 weeks) that they were working in New Zealand and the opportunity for someone working for, say 28 weeks, to earn and remit far larger sums than someone employed for 18 weeks. The total amounts remitted by Ni-Vanuatu, Samoans and Tongans who worked for similar periods (21 or 22 weeks) are compared in section 2.3 above.

#### *Total and standard remittances*

Tables 17 and 18 show two assessments of remittance amounts. In the case of Table 17, the medians and averages refer to all remittances by each worker, including the transfers in the final week. These have been aggregated and divided by the number of weeks the workers actually remitted money back to the islands. In Table 18 the medians and averages refer to the remittances made while working (standard remittances), not including the large final transfers many workers made at the end of their period of employment, again divided by the number of weeks they actually made these remittances.

In the case of all remittances, the Samoans sent home higher median ($505) and average ($674) weekly sums of money than the Tongans ($458 and $529) and Ni-Vanuatu ($450 and $654). A pattern of increasing median and average remittances by seasons of work is more consistent for the Tongans than either the Samoans or Ni-Vanuatu and this is reflected in the higher correlation coefficient (0.145) than those for the other two groups (0.053 and 0.062 respectively).

The median ($553) and average ($659) weekly remittances by the Tongans who had been working for seven or more seasons were $200 larger than those remitted by first ($306 and $457) and second ($371 and $454) season Tongan workers (Table 17). In the case of the Samoans, the largest median ($715) and average ($824) weekly remittances were for workers in their fourth season. The Ni-Vanuatu workers had a very irregular pattern with alternating lower and higher weekly averages across the range. This reflects the much lower frequency of remitting by Ni-Vanuatu (discussed below) and the more significant impact of large final transfers of funds on average weekly remittances (Table 17). The high coefficients of variation for all groups are a clear indication of the variability in sums remitted by workers – averages do not mean a lot on their own in this context.

**Table 17: Average size of all remittances by work experience***

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 263 | 162 |
| *Median all remittances (NZ$)* | | | |
| First season | 200.00 | 498.20 | 306.41 |
| Second season | 535.00 | 536.29 | 370.69 |
| Third season | 201.11 | 493.52 | 496.13 |
| Fourth season | 578.00 | 714.62 | 412.17 |
| Fifth or sixth season | 470.00 | 492.24 | 491.83 |
| Seventh or more seasons | 315.00 | 461.70 | 553.24 |
| All workers | 450.00 | 504.57 | 458.04 |
| *Average all remittance (NZ$)* | | | |
| First season | 457.70 | 683.64 | 457.03 |
| Second season | 865.95 | 637.38 | 454.43 |
| Third season | 429.34 | 552.23 | 641.18 |
| Fourth season | 827.55 | 823.78 | 566.17 |
| Fifth or sixth season | 589.07 | 694.13 | 502.50 |
| Seventh or more seasons | 826.67 | 709.77 | 658.91 |
| All workers | 654.26 | 674.42 | 528.89 |
| *Coefficient of variation (%)* | | | |
| First season | 119.5 | 109.8 | 63.4 |
| Second season | 94.4 | 79.0 | 68.8 |
| Third season | 101.6 | 54.5 | 107.7 |
| Fourth season | 74.8 | 67.7 | 74.2 |
| Fifth or sixth season | 89.1 | 89.1 | 34.4 |
| Seventh or more seasons | 134.1 | 134.9 | 47.1 |
| All workers | 96.6 | 93.8 | 75.0 |
| *Correlation analysis* | | | |
| Correlation coefficient | 0.062 | 0.053 | 0.145 |
| Coefficient of determination (%) | 0.4 | 0.3 | 2.1 |

* Including final transfers

When large and highly variable final transfers are removed, the consistent pattern of increasing remittances with experience of work among the Tongans becomes clearer (Table 18).

**Table 18: Average size of standard remittances by work experience***

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 118 | 262 | 161 |
| *Median standard remittances (NZ$)* | | | |
| First season | 160.00 | 295.83 | 260.11 |
| Second season | 234.75 | 291.20 | 285.10 |
| Third season | 200.00 | 288.42 | 408.75 |
| Fourth season | 525.00 | 332.00 | 336.83 |
| Fifth or sixth season | 306.25 | 341.84 | 408.33 |
| Seventh or more seasons | 166.00 | 313.75 | 464.90 |
| All workers | 250.00 | 305.80 | 331.35 |
| *Average standard remittances (NZ$)* | | | |
| First season | 237.74 | 304.53 | 325.10 |
| Second season | 536.99 | 316.76 | 323.32 |
| Third season | 281.52 | 324.65 | 426.33 |
| Fourth season | 668.57 | 475.30 | 372.04 |
| Fifth or sixth season | 360.46 | 457.88 | 414.45 |
| Seventh or more seasons | 209.12 | 306.36 | 581.16 |
| All workers | 406.55 | 358.89 | 390.73 |
| *Coefficient of variation (%)* | | | |
| First season | 93.2 | 35.8 | 70.6 |
| Second season | 131.7 | 62.5 | 65.8 |
| Third season | 83.5 | 45.5 | 39.9 |
| Fourth season | 79.7 | 82.4 | 58.7 |
| Fifth or sixth season | 54.3 | 93.4 | 42.3 |
| Seventh or more seasons | 57.3 | 32.9 | 57.9 |
| All workers | 106.4 | 74.1 | 59.4 |
| *Correlation analysis* | | | |
| Correlation coefficient | -0.038 | 0.114 | 0.334 |
| Coefficient of determination (%) | 0.1 | 1.3 | 11.1 |

* Excluding final transfers

Tongans had larger average weekly median ($331) and average ($391) remittances than the Samoans ($306 and $359), the highest correlation coefficient (0.334) indicating the strength of the relationship between amounts remitted and number of times workers had been employed on seasonal work in New Zealand, and the lowest coefficient of variation (59 percent) showing less variability in the value of standard remittances sent home by the 161 workers who remitted (Table 18). Tongans in their seventh or more seasons of work were remitting, on average ($581), $200 more per week than those in their first ($325) or second ($323) seasons of work.

For the Samoans and the Ni-Vanuatu, the fourth season workers were again the remitters of the largest average weekly standard remittances for their respective groups. There was greater consistency in the pattern of standard remittances by work experience for Samoans (correlation coefficient, 0.114) and somewhat less variation between workers in the average amounts remitted (74 percent) than was the case with their total remittances (correlation coefficient, 0.053 and coefficient of variation, 94 percent). However, coefficients of variation above 50 percent are a sign of considerable variability and the averages should be interpreted with caution.

The pattern of standard remittances by seasonal work experience for the Ni-Vanuatu is the least consistent of the three. The overall very low negative correlation coefficient (-0.038), and its associated statistic for the amount of variation in remittances explained by number of seasons the worker had been employed (coefficient of determination of 0.1 percent), indicate that there is virtually no relationship between average amounts of money remitted and work experience for the 118 Ni-Vanuatu who sent money home during the time they were working (Table 18). Indeed, a negative value for the correlation coefficient indicates that the average value of remittances was less for the more experienced workers than for the less experienced ones. This is the case as far as average weekly standard remittances is concerned: first ($238) and second ($537) season workers had higher values for these remittances than those back for their fifth and sixth ($360) and seventh or more seasons ($209).

### *Frequency of remitting*

The statistics for average weekly remittances for the Ni-Vanuatu in particular have to be interpreted with considerable caution. This is because of their infrequency of remitting by comparison with the Samoans and Tongans (Table 19). While the median and average percentages of weeks available that were used to send home remittances (including the final week) for the 263 Samoans and 162 Tongans were between 45 (Samoans) and 48-49 (Tongans), the percentages for the 122 Ni-Vanuatu were over 30 percent lower (10.8 median and 14.6 average).

These average weekly percentages support the findings presented in section 2.3 for actual remittance frequencies for the three groups employed for 21-22 weeks. The Tongans were the most consistent remitters with workers employed for five or more seasons sending home remittances on 55 percent or more of the weeks they were in New Zealand (Table 19).

**Table 19: Percentage of available weeks remittances sent by work experience***

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 263 | 162 |
| *Median % weeks remitted* | | | |
| First season | 9.1 | 36.4 | 49.1 |
| Second season | 13.6 | 49.1 | 37.5 |
| Third season | 10.0 | 48.2 | 50.0 |
| Fourth season | 13.6 | 42.3 | 41.4 |
| Fifth or sixth season | 14.6 | 42.3 | 59.3 |
| Seventh or more seasons | 9.1 | 60.7 | 55.9 |
| All workers | 10.8 | 45.5 | 48.2 |
| *Average % weeks remitted* | | | |
| First season | 8.8 | 37.8 | 47.6 |
| Second season | 20.3 | 45.9 | 42.7 |
| Third season | 14.1 | 49.7 | 51.5 |
| Fourth season | 16.8 | 41.6 | 47.6 |
| Fifth or sixth season | 16.5 | 42.2 | 55.6 |
| Seventh or more seasons | 12.0 | 58.1 | 55.4 |
| All workers | 14.6 | 45.2 | 49.1 |
| *Coefficient of variation (%)* | | | |
| First season | 55.6 | 44.9 | 50.6 |
| Second season | 51.6 | 41.0 | 52.0 |
| Third season | 71.4 | 33.2 | 36.1 |
| Fourth season | 50.1 | 42.6 | 51.9 |
| Fifth or sixth season | 61.2 | 51.9 | 40.1 |
| Seventh or more seasons | 68.2 | 37.8 | 43.6 |
| All workers | 60.7 | 43.9 | 46.7 |
| *Correlation analysis* | | | |
| Correlation coefficient | 0.107 | 0.186 | 0.161 |
| Coefficient of determination (%) | 1.1 | 3.5 | 2.6 |

* Including final transfers

### *Remittances as a percentage of gross income*

Table 20 provides another simple comparative indicator of remittances by work experience.

**Table 20: Total remittances as a percentage of gross income by work experience**

| Work experience | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 263 | 162 |
| *Median % of gross income* | | | |
| First season | 2.7 | 23.7 | 25.1 |
| Second season | 12.5 | 26.6 | 25.6 |
| Third season | 4.5 | 29.5 | 32.2 |
| Fourth season | 15.3 | 32.7 | 26.3 |
| Fifth or sixth season | 7.0 | 27.0 | 37.3 |
| Seventh or more seasons | 7.7 | 36.0 | 36.8 |
| All workers | 6.8 | 27.6 | 30.3 |
| *Average % of gross income* | | | |
| First season | 6.8 | 23.9 | 27.8 |
| Second season | 14.5 | 28.0 | 25.5 |
| Third season | 9.4 | 28.7 | 34.7 |
| Fourth season | 15.4 | 32.9 | 31.2 |
| Fifth or sixth season | 12.7 | 27.9 | 36.8 |
| Seventh or more seasons | 17.5 | 32.1 | 41.7 |
| All workers | 12.6 | 28.3 | 31.9 |
| *Coefficient of variation (%)* | | | |
| First season | 126.6 | 45.6 | 51.3 |
| Second season | 77.3 | 52.0 | 53.4 |
| Third season | 123.6 | 39.8 | 38.5 |
| Fourth season | 65.1 | 40.9 | 53.1 |
| Fifth or sixth season | 97.2 | 10.8 | 45.9 |
| Seventh or more seasons | 104.2 | 40.4 | 50.9 |
| All workers | 96.3 | 46.9 | 51.1 |
| *Correlation analysis* | | | |
| Correlation coefficient | 0.180 | 0.162 | 0.323 |
| Coefficient of determination (%) | 3.2 | 2.6 | 10.4 |

In terms of percentages of gross income sent home while workers were in New Zealand, Tongans were, again, the heaviest remitters transferring, on average, just under 32 percent of their total earnings. The more experienced workers (five seasons or more) were sending home around 10 percent more of their earnings than the first and second season workers, and the correlation coefficient of 0.323 for the relationship between percentage of income remitted and seasonal work experience for Tongans was double that for the Samoans (0.162) (Table 21).

Although there was a stronger relationship between the variables shown in Table 21 for Tongans, Samoans were not far behind in the shares of their gross incomes that were remitted. The median (27.6 percent) and average (28.3 percent) statistics for the Samoans were around three percent below the comparative statistics for the Tongans, and the more experienced Samoans (seven seasons or more) were sending back 10 percent more of their gross incomes than the first season workers (Table 21).

The shares of Ni-Vanuatu gross incomes remitted were much lower across all work experience groups. The median was just under seven percent, while the average was almost double this at 12.6 percent. The average was influenced by some major variations in percentages remitted as indicated in the coefficients of variation that are above 100 percent (first season (126.6), third season (123.6) and seventh or more seasons (104.2)). Notwithstanding this considerable variability, there was still a weak but statistically significant correlation coefficient of 0.180 ($p=<0.05$) between percentage of income sent home and gross income. Given the considerable variations in median and average percentages by work experience for the 122 Ni-Vanuatu the weak trend indicated by the correlation coefficient should not be over-emphasized.

### *Summary*

The key findings from this section can be summarised as follows:

1) Samoans had the highest average transfers of total remittances during the weeks that they actually remit money. While Samoans remitted more on average, there was a stronger relationship between amounts remitted and work experience among the Tongans although this was very weak for all groups for total remittances. Ni-Vanuatu have highly variable median and average remittance transfers by work experience reflecting the considerable variations in remittance frequency among these workers.
2) When standard remittances (excluding final transfers) are considered, Tongans had the highest median and average. The relationship between average size of standard remittance and work experience was stronger for both Tongans and Samoans. For Ni-Vanuatu, this relationship was almost non-existent in a statistical sense, again reflecting their low frequency of remitting.
3) There were major differences in remittance frequency, with Tongans and Samoans sending money home on 45-49 percent of the available weeks, while Ni-Vanuatu remitted on 10-15 percent of available weeks.
4) There were also major variations in percentages of gross income remitted with Samoans and Tongans sending home 27-32 percent compared with 7-13 percent for Ni-Vanuatu.

## 3.3 Some implications of findings from this section

Experience gained in previous seasons as pickers, pruners or packers is one of the key factors motivating employers to encourage many of their best Pacific workers to keep coming back to New Zealand to assist with key tasks during periods of peak labour demand. This enables

employers to capitalise on the training their workers have had and to build up a skilled and reliable pool of labour to ensure crops can be harvested and packed efficiently and trees and vines pruned in a timely way for the next season.

Returning workers capitalise on their previous experience to gain higher incomes, especially when employed on piece or contract rates. There is clear evidence in the data on average gross weekly incomes of increases in earnings with experience, at least for the first three or four seasons. The evidence is less clear about continuing increases in gross incomes for those returning for their fifth or more seasons, although some of the most experienced workers do have higher gross incomes because they receive additional benefits (such as subsidized accommodation or travel costs) if they assume significant pastoral care or supervisory duties. Examples of these special cases can be found in the various Orchard Reports.

There were different mixes of experience among the Ni-Vanuatu, Samoan and Tongan groups covered by the survey (see Appendix 1a) but in all cases no more than 31 percent of the workers were in their fifth or more seasons of employment under the RSE scheme. The Ni-Vanuatu had the smallest share of first season workers (13 percent) compared with 20 percent each for the Samoans and Tongans, but in all groups between 38 and 40 percent of the workers were in their second or third seasons.

While there were variations in average weekly gross and net incomes, the differences within and between the groups were not large. Much more significant in producing variability in measures of income for seasonal workers was differences in both the frequency and the value of remittances. The Samoans and Tongans remitted much more frequently and much larger shares of their gross incomes than the Ni-Vanuatu workers. Once the value of remittances was removed from net incomes, there were significant variations within and between groups in average weekly residual incomes.

The distribution of average weekly residual incomes for the three groups is given in Table 21. The patterns are quite different. While fewer than 6 percent of the Ni-Vanuatu workers had average weekly residual incomes of less than the equivalent of $30 a day (under $210 a week), 40.5 percent of the Tongans were in this group. At the other end of the scale, none of the 163 Tongans had average weekly residual incomes of $490 or more ($70 or more a day) while 39 (27 percent) of the 142 Ni-Vanuatu were in this residual income category (Table 21). Almost 70 percent of Ni-Vanuatu had residual incomes equivalent to $50 a day or more (≥$350 a week) compared with 42 percent of the Samoans and 16 percent of the Tongans.

**Table 21: Average weekly residual income bands**

| Average weekly residual income | Daily equivalent | Ni-Vanuatu No. | Ni-Vanuatu % | Samoans No. | Samoans % | Tongans No. | Tongans % |
|---|---|---|---|---|---|---|---|
| <$140.00 | <$20.00 | 5 | 3.5 | 11 | 4.2 | 25 | 15.3 |
| $140.00-209.99 | $20.00-29.99 | 3 | 2.1 | 23 | 8.7 | 41 | 25.2 |
| $210.00-279.99 | $30.00-39.99 | 16 | 11.3 | 54 | 20.5 | 43 | 26.4 |
| $280.00-349.99 | $40.00-49.99 | 19 | 13.4 | 64 | 24.2 | 28 | 17.2 |
| $350.00-419.99 | $50.00-59.99 | 39 | 27.5 | 39 | 14.8 | 17 | 10.4 |
| $420.00-489.99 | $60.00-69.99 | 21 | 14.8 | 30 | 11.4 | 9 | 5.5 |
| $490.00-559.99 | $70.00-79.99 | 32 | 22.5 | 21 | 8.0 | 0 | 0.0 |
| $560.00-629.99 | $80.00-89.99 | 6 | 4.2 | 14 | 5.3 | 0 | 0.0 |
| $630.00-699.99 | $90.00-99.99 | 1 | 0.7 | 3 | 1.1 | 0 | 0.0 |
| ≥$700 | ≥$100.00 | 0 | 0.0 | 5 | 1.9 | 0 | 0.0 |
| Total number | | 142 | 100.0 | 264 | 100.0 | 163 | 100.0 |

Different patterns of remitting obviously have major impacts on disposable incomes for seasonal workers and, while remittance patterns are very much personal choices, there is no question that regular transfers of earnings back to the islands can have quite profound implications for material living standards of remitters in New Zealand. This has long been recognised among New Zealand's resident Pacific communities where most of the remittances from this country back to the Pacific come from. Extensive remitting by Pacific residents in New Zealand has impacted heavily on their ability to develop their family's material living standards in New Zealand. This is evident in the findings of Macpherson's extensive research on New Zealand's Samoan community, especially the capacity of Samoans on relatively low incomes (or benefits) to provide on-going support for families back in the islands (Macpherson, 1997, 1994, 1992; Macpherson & Macpherson, 2009).

While one of the primary objectives seasonal workers have when they come to New Zealand under the RSE scheme is to earn money to support their families at home, the cost of doing this during their period of employment should not be prejudicial to their wellbeing in New Zealand. The data on residual incomes that can be generated from the information collected on earnings and remittances by Ni-Vanuatu, Samoan and Tongan workers in the MBIE-sponsored surveys suggest that a more comprehensive assessment of the actual living costs for workers during their periods of employment would be useful, especially for those groups that are sending back significant shares of their weekly or fortnightly net incomes as remittances.

Most of the Ni-Vanuatu workers who provided information on their remittance transfers in 2016 were not able to send money home during the first few weeks they were in New Zealand, mainly because they were repaying their half share of the airfare as well as loans from employers for accommodation and living expenses while they got into their jobs. Delays in getting into productive work after arriving in New Zealand because of a late start to the

season or inclement weather can be quite costly for workers. They have to borrow from employers to cover their living costs until productive work commences. Better information on actual living costs for seasonal workers would complement the much better data the MBIE surveys have produced on incomes and remittances.

## 4. THE IMPACT OF AGE AND MARITAL STATUS ON INCOME AND REMITTANCES

Two other variables that were of interest in the context of earnings and remittances were age and marital status. The key questions addressed using the survey data on these variables are: 1) are younger adult workers more productive than the older workers, given the demands of the quite strenuous outdoor tasks associated with picking fruit and pruning trees and vines, and 2) are married men earning and remitting more than single men given the family commitments many of the former have? These questions about productivity (as measured by gross incomes earned on contract or piece rates) and remittances have relevance for one of the development-oriented goals of the RSE scheme – to provide younger, rural-based Pacific Islanders with access to temporary work in New Zealand as a way of providing income to support their social and economic development back in their villages (Gibson, 2015; Gibson et al. 2014; Bailey, 2015, 2014; C. Bedford, 2014, 2013).

As with the analysis of the relationship between experience of seasonal work on the one hand and earnings and remittances on the other, measures of average weekly incomes and remittances are used in this section. The groups involved are summarised in Appendix 1b where it can be seen that there are 142 Ni-Vanuatu, 164 Samoans and 220 Tongans for whom we have information on their age group (18-29 years, 30-39 years or 40 years and over) and their marital status (single or married/partnership).

The 100 Samoans, who are a key part of the comparative analysis in section 2, are not included in the analysis of age and marital status in this section. This is because an RSE did not provide the data on these variables for his workers. The 60 Tongans covered in section 2, who were not included in the discussion of worker experience in section 3 because of missing data, are included in the analysis of age and marital status. The 142 Ni-Vanuatu include the 77 covered in section 2.

### 4.1 Do younger workers earn and remit more than older workers?

As has already been noted, there are major differences in the age composition of the three groups. The Tongans are much younger with over 60 percent aged between 18 and 29 while the Ni-Vanuatu are older with 31 percent aged 40 or more. These differing age structures are reflected in part in the different mixes of seasonal work experience for the three groups shown in Appendix 1a although, as noted above, the Samoan and Tongan groups in Appendix 1a and 1b have different mixes of workers because of missing data.

Notwithstanding this lack of consistency across the groups by seasonal work experience on the one hand and age and marital status on then other (except for the Ni-Vanuatu), the Tongans (45 percent) and Samoans (42 percent) had higher shares of workers in the first and second seasons of work than the Ni-Vanuatu (30 percent). The Ni-Vanuatu were more heavily concentrated in the 3-6 season band for work experience (61 percent) compared with the Samoans (46 percent) and Tongans (44 percent). These are more likely to be workers aged 30-39 years (especially those in their fifth and sixth seasons) than aged 18-29 years.

### *Age and income*

There is no consistent relationship between age group and average weekly gross incomes for the three groups (Table 22).

**Table 22: Average weekly gross incomes by age group**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 220 |
| *Median weekly income (NZ$)* | | | |
| 18-29 years | 778.35 | 797.39 | 725.62 |
| 30-39 years | 797.55 | 794.75 | 810.78 |
| 40+ years | 787.54 | 750.21 | 804.31 |
| All workers | 784.76 | 792.65 | 772.59 |
| *Average weekly income (NZ$)* | | | |
| 18-29 years | 767.92 | 801.31 | 738.80 |
| 30-39 years | 796.68 | 808.43 | 805.30 |
| 40+ years | 772.21 | 748.13 | 821.87 |
| All workers | 782.41 | 797.11 | 766.32 |
| *Coefficient of variation (%)* | | | |
| 18-29 years | 10.9 | 8.9 | 20.4 |
| 30-39 years | 14.9 | 12.1 | 20.5 |
| 40+ years | 10.9 | 10.9 | 16.8 |
| All workers | 13.0 | 10.6 | 20.3 |

The closest to a consistent pattern is found for Tongans where the younger workers (18-29 years) had a lower average weekly income ($739) than the workers aged 30-39 years ($811) or those aged 40 and over ($822) (Table 22). In the case of the Samoans the pattern was reversed for median weekly gross incomes: the younger workers ($797) earned, on average, marginally more than those aged 30-39 years ($795), and, by a larger margin, those aged 40 and over ($751). There was no consistent pattern among the Ni-Vanuatu workers; the highest

earning age group for both median and average weekly gross incomes was the 30-39 year olds ($797) (Table 22).

The average weekly gross incomes by age group are very similar for the three groups of workers, with the Tongan overall averages coming in just behind the Ni-Vanuatu and Samoans ones. This similarity changes somewhat after the effect of tax, standard deductions and remittances are taken into account. The residual incomes for Ni-Vanuatu workers are higher than those for the Samoans and Tongans at all ages because of the different remittance patterns (Table 23).

**Table 23: Average weekly residual incomes by age group**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 220 |
| *Median weekly income (NZ$)* | | | |
| 18-29 years | 406.10 | 300.71 | 281.16 |
| 30-39 years | 406.56 | 278.86 | 269.84 |
| 40+ years | 405.12 | 270.36 | 254.80 |
| All workers | 406.01 | 291.05 | 272.40 |
| *Average weekly income (NZ$)* | | | |
| 18-29 years | 410.12 | 324.77 | 283.81 |
| 30-39 years | 389.49 | 302.83 | 286.50 |
| 40+ years | 397.79 | 275.64 | 254.67 |
| All workers | 492.44 | 310.45 | 280.05 |
| *Coefficient of variation (%)* | | | |
| 18-29 years | 23.8 | 35.7 | 44.1 |
| 30-39 years | 29.9 | 39.3 | 40.4 |
| 40+ years | 30.6 | 43.4 | 66.7 |
| All workers | 28.6 | 38.1 | 46.6 |

Given that tax and orchard deductions tend to have a reasonably consistent impact on gross incomes (see sections 2 and 3), with the caveat that Ni-Vanuatu pay several hundred dollars more for their share of international travel costs than either Samoans or Tongans, it is remittances that are the major factor behind the differences in residual incomes. This differential impact is very evident in the percentage changes in net incomes (after deductions and tax) caused by remittances (including final transfers). These are shown in Table 24. These percentage changes are obtained by deducting the average weekly residual incomes for each worker from their average weekly net incomes.

**Table 24: Impact of remittance transfers on average weekly net incomes by age group**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 220 |
| *Median weekly income (% reduction)* | | | |
| 18-29 years | 7.9 | 40.2 | 39.3 |
| 30-39 years | 9.8 | 46.6 | 46.5 |
| 40+ years | 10.7 | 42.7 | 53.9 |
| All workers | 9.6 | 41.5 | 44.1 |
| *Average weekly income (% reduction)* | | | |
| 18-29 years | 14.8 | 40.2 | 42.2 |
| 30-39 years | 19.6 | 45.3 | 47.8 |
| 40+ years | 18.2 | 44.4 | 56.9 |
| All workers | 18.0 | 42.6 | 45.7 |

A clear pattern is present in the medians and averages for Tongans of increasing reductions in net income as a result of remittances. For the older workers, just under 54 percent of their median and average net incomes was remitted – much higher than the shares of their net incomes sent home for the 30-39 (46-48 percent) and 18-29 year old Tongans (39-42 percent) (Table 24). There is also a pattern of small increases in percentage reductions in net weekly average incomes due to remittances in the medians for Ni-Vanuatu. However, this pattern is not maintained in the statistics for percentage reductions in average weekly incomes – the older workers have a lower figure for this reduction (18.2 percent) than the 30-39 year olds (19.6 percent). For Samoans the highest percentage income reductions as a result of remitting were in the 30-39 year age group.

We have already commented on the high incidence of low residual incomes among the Tongan workers covered by the survey. A perspective on the distribution of residual incomes by age group is given in Table 25. Here we isolate four average weekly income bands: 1) under $140 a week or, under $20 a day; 2) between $140 and $209.99 a week, or between $20 and $29.99 a day; 3) between $210 and $279.99 a week, or between $30 and $30.99 a day; and 4) $280 and over a week, or $40 and over a day.

There are big differences between the three groups. Over 80 percent of the Ni-Vanuatu in all age groups are in the $280 and over a week residual income band compared with 54 percent of the Samoans and 48 percent of the Tongans (Table 25).

**Table 25: Average weekly residual income bands by age group**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 220 |
| *Under $140 (% of age group)* | | | |
| 18-29 years | 0.0 | 4.8 | 10.2 |
| 30-39 years | 1.5 | 3.3 | 10.0 |
| 40+ years | 9.1 | 4.8 | 21.2 |
| Total (% of all workers) | 3.5 | 4.3 | 11.8 |
| *$140-$209.99 (% of age group)* | | | |
| 18-29 years | 0.0 | 6.0 | 19.7 |
| 30-39 years | 3.1 | 21.7 | 24.0 |
| 40+ years | 2.3 | 14.3 | 15.2 |
| Total (% of all workers) | 2.1 | 12.8 | 20.0 |
| *$210-$279.99 (% of age group)* | | | |
| 18-29 years | 15.2 | 28.9 | 19.0 |
| 30-39 years | 15.4 | 26.7 | 18.0 |
| 40+ years | 2.3 | 33.3 | 27.3 |
| Total (% of all workers) | 11.3 | 28.7 | 20.0 |
| *$280 and over (% of age group)* | | | |
| 18-29 years | 84.8 | 60.2 | 51.1 |
| 30-39 years | 80.0 | 48.3 | 48.0 |
| 40+ years | 86.4 | 47.6 | 36.4 |
| Total (% of all workers) | 83.1 | 54.3 | 48.2 |

Among the Tongans, the older age group (40 years and over) is most heavily concentrated in the lower income bands – almost 64 percent had average residual incomes under $280 a week, or under $40 a day and for 20 percent of them their average residual incomes were under $140 a week or $20 a day. The younger Samoan and Tongan workers (18-29 years) had the highest percentages in the $280 and over a week category (60 and 51 percent respectively), while for the Ni-Vanuatu 85 percent were in this category (Table 25). These percentages suggest that the impact of remittances on residual incomes did vary by age, especially among the Samoans and Tongans.

### *Age and remittances*

The clearest demonstration of a differential impact of age on remitting behaviour can be found in the percentage of available weeks that seasonal workers sent money home while working in New Zealand (Table 26).

**Table 26: Percentage of available weeks remittances sent by age group ***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 164 | 218 |
| *Median % weeks remitted* | | | |
| 18-29 years | 10.3 | 48.2 | 48.2 |
| 30-39 years | 10.8 | 50.9 | 57.7 |
| 40+ years | 13.6 | 53.9 | 72.7 |
| All workers | 10.8 | 50.0 | 55.6 |
| *Average % weeks remitted* | | | |
| 18-29 years | 13.2 | 45.2 | 48.6 |
| 30-39 years | 15.4 | 50.7 | 58.1 |
| 40+ years | 14.3 | 54.1 | 67.6 |
| All workers | 14.6 | 48.4 | 53.6 |
| *Coefficient of variation (%)* | | | |
| 18-29 years | 54.0 | 42.3 | 44.9 |
| 30-39 years | 66.1 | 32.3 | 37.4 |
| 40+ years | 54.3 | 26.6 | 32.3 |
| All workers | 60.7 | 36.9 | 42.5 |

* Including final transfers

In all three groups the frequency of remitting is highest among the older workers and lowest among those aged 18-29 years. The most significant variations in remitting frequency by age are found for the Tongan workers – those aged 40 years and over sent home money on around 70 percent of the weeks they were employed compared with just under 50 percent of the weeks for those aged 18-29 years. The differences in remitting frequency among Samoan and Ni-Vanuatu workers were much smaller, but in both cases older workers remitted more often than younger ones.

Older Tongan and Samoan workers also remitted higher shares of their gross incomes than the younger ones but the pattern of increasing percentages of earnings remitted by age group is not as marked or as consistent as the pattern relating to frequency of remitting (Table 27). As in Table 26, Tongans had the highest percentages at all age groups as far as shares of earnings remitted (median 22 percent; average 23 percent) followed by Samoans (16 and 19 percent respectively) and Ni-Vanuatu (7 and 18 percent respectively) (Table 27).

**Table 27: Remittances as a percentage of gross income by age group***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 164 | 218 |
| *Median % of gross income* | | | |
| 18-29 years | 6.6 | 15.6 | 19.9 |
| 30-39 years | 8.1 | 16.4 | 24.5 |
| 40+ years | 7.4 | 17.9 | 23.9 |
| All workers | 7.3 | 16.2 | 21.8 |
| *Average % of gross income* | | | |
| 18-29 years | 11.6 | 17.8 | 20.8 |
| 30-39 years | 13.6 | 19.3 | 25.1 |
| 40+ years | 13.1 | 20.5 | 30.7 |
| All workers | 18.2 | 18.7 | 23.2 |
| *Coefficient of variation (%)* | | | |
| 18-29 years | 89.8 | 49.2 | 57.7 |
| 30-39 years | 99.6 | 53.6 | 40.4 |
| 40+ years | 101.4 | 54.7 | 60.5 |
| All workers | 94.3 | 51.8 | 57.1 |

* Including final transfers

These different shares of gross income that were remitted can be related back to the percentages of workers in the different age groups who had average weekly residual incomes of under $280 (Table 25). The younger Tongan workers especially were not remitting nearly as frequently or as much of their earnings as the older workers were. On the other hand, the very small median and average percentages of gross earnings remitted by Ni-Vanuatu workers meant that much higher percentages of them had average weekly residual incomes of $280 or more, as shown in Table 25. It should be kept in mind, however, that there was considerable variability in shares of gross incomes remitted, especially among the Ni-Vanuatu, and the medians and averages need to be interpreted with caution.

When it comes to actual amounts that were remitted, the analysis needs to be in terms of average weekly total and standard remittances because of the variable periods of employment for the workers. The median and average amounts remitted by workers in the three age groups each time they sent money home are shown in Table 28 (total remittances, including final transfers) and Table 29 (standard remittances excluding large transfers in the final week).

**Table 28: Average size of all remittances by age group***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 164 | 219 |
| *Median all remittances (NZ$)* | | | |
| 18-29 years | 395.83 | 445.79 | 418.86 |
| 30-39 years | 522.50 | 485.92 | 431.91 |
| 40+ years | 450.00 | 366.21 | 456.27 |
| All workers | 450.00 | 445.01 | 430.00 |
| *Average all remittances (NZ$)* | | | |
| 18-29 years | 683.26 | 600.91 | 465.06 |
| 30-39 years | 652.98 | 560.35 | 574.30 |
| 40+ years | 614.18 | 451.20 | 486.67 |
| All workers | 654.26 | 566.90 | 493.26 |
| *Coefficient of variation (%)* | | | |
| 18-29 years | 95.9 | 83.6 | 52.0 |
| 30-39 years | 94.4 | 72.5 | 99.7 |
| 40+ years | 97.9 | 61.1 | 35.0 |
| All workers | 96.6 | 78.6 | 69.1 |

* Including final transfers

**Table 29: Average size of standard remittances by age group***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 118 | 164 | 218 |
| *Median standard remittances (NZ$)* | | | |
| 18-29 years | 224.75 | 334.00 | 317.89 |
| 30-39 years | 255.50 | 276.90 | 336.32 |
| 40+ years | 272.50 | 268.17 | 316.22 |
| All workers | 250.00 | 308.17 | 320.74 |
| *Average standard remittances (NZ$)* | | | |
| 18-29 years | 438.54 | 392.71 | 346.09 |
| 30-39 years | 409.91 | 366.39 | 409.07 |
| 40+ years | 392.91 | 304.83 | 374.90 |
| All workers | 406.55 | 371.83 | 364.61 |
| *Coefficient of variation (%)* | | | |
| 18-29 years | 109.3 | 78.6 | 50.9 |
| 30-39 years | 109.0 | 47.2 | 61.3 |
| 40+ years | 100.7 | 55.8 | 43.3 |
| All workers | 106.4 | 77.3 | 53.3 |

* Excluding final transfers

There are few consistent patterns with age in these figures for average remittances each time money was sent home although the medians show increases with age for Tongans in the case of total remittances, and for Ni-Vanuatu in the case of standard remittances (Tables 28 and 29). In most of the situations shown in the two tables the age group 30-39 has the highest median and average remittances on the weeks they sent money home.

The more interesting finding from these tables is the general similarity between groups in the amounts shown, especially for total remittances. But it must be kept in mind that the figures have been derived by dividing the total value of remittances by each worker during the time they were employed by the number of weeks they sent money home.

### 4.2 Do married workers earn and remit more than single workers?

As with the age distributions, there are some major differences in shares of workers who are married and single across the three groups (Appendix 1b). The great majority (89 percent) of Ni-Vanuatu included in the survey were married compared with 54 percent of Samoans and 46 percent of Tongans. The small number of non-married Ni-Vanuatu (16 out of 142 workers) means that statistics on their earnings and remittances need to be treated with some caution.

### *Marital status and income*

As far as average weekly gross earnings are concerned, there were only small differences between married and single workers within each group (less than $10 per week for Ni-Vanuatu and Samoans, with a slightly higher difference for Tongans -- $26) (Table 30). There was no consistency with regard to which of the marital status groups earned more – in the case of median gross weekly incomes it was single N-Vanuatu and Samoans, and married Tongans; in the case of average gross weekly incomes it was married Ni-Vanuatu and Tongans and single Samoans (Table 30).

**Table 30: Average weekly gross incomes by marital status**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 223 |
| *Median weekly income (NZ$)* | | | |
| Not married | 792.46 | 792.67 | 748.17 |
| Married/partner | 784.76 | 788.94 | 794.05 |
| All workers | 784.76 | 792.65 | 772.48 |
| *Average weekly income (NZ$)* | | | |
| Not married | 779.54 | 799.54 | 752.12 |
| Married/partner | 782.78 | 795.06 | 780.19 |
| All workers | 782.41 | 797.11 | 765.08 |
| *Coefficient of variation (%)* | | | |
| Not married | 9.1 | 8.6 | 20.1 |
| Married/partner | 12.6 | 12.2 | 20.3 |
| All workers | 13.0 | 10.6 | 20.3 |

A more consistent relationship between marital status and average weekly earnings is apparent in the statistics for residual incomes, after tax and orchard deductions as well as remittances have been accounted for (Table 31). In each of the groups the workers who were not married had higher weekly residual incomes than married workers, both in terms of medians as well as averages. Reflecting the much greater incidence of remitting among the Samoans and Tongans, the average weekly residual incomes for these two groups were around $100-$150 per week less than those for the Ni-Vanuatu (Table 31).

**Table 31: Average weekly residual incomes by marital status**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 223 |
| *Median weekly income (NZ$)* | | | |
| Not married | 477.41 | 291.97 | 306.86 |
| Married/partner | 404.08 | 282.00 | 235.99 |
| All workers | 406.01 | 291.05 | 270.47 |
| *Average weekly income (NZ$)* | | | |
| Not married | 467.68 | 322.75 | 303.65 |
| Married/partner | 392.51 | 300.09 | 251.02 |
| All workers | 400.98 | 310.45 | 279.34 |
| *Coefficient of variation (%)* | | | |
| Not married | 29.7 | 36.8 | 42.6 |
| Married/partner | 15.5 | 39.1 | 47.6 |
| All workers | 28.6 | 38.1 | 46.5 |

When average weekly residual incomes are compared with average weekly net incomes the greater significance of remitting for married workers is apparent in the three groups. While the percentage changes in Ni-Vanuatu residual incomes for both single and married workers were much smaller than those for Samoan and Tongan workers in the same marital status groups, single workers consistently had lower percentage changes in income than married workers once remittances were accounted for (Table 32).

The biggest differences between single and married workers in percentage changes in median and average weekly net incomes as a result of remitting were found for Tongans (Table 32). Single Tongans remitted the equivalent of 39-40 percent of their net incomes, compared with more than half the net incomes remitted by the married Tongan workers. Much smaller differences in percentage changes in net incomes with remittances were found for single (40-41 percent) and married (43-44 percent) Samoans. Among the small number of Ni-Vanuatu who were not married, the average weekly residual incomes were only six percent less than their average weekly net incomes. For married Ni-Vanuatu workers the percentage reduction (20 percent) in average weekly net incomes caused by remittances was double that for single workers, but it was less than half the percentage change recorded for married Samoans and Tongans (Table 32).

**Table 32: Impact of remittance transfers on average weekly net incomes by marital status**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 223 |
| *Median weekly income (% reduction)* | | | |
| Not married | 6.0 | 40.3 | 38.8 |
| Married/partner | 11.1 | 43.1 | 51.4 |
| All workers | 9.6 | 41.5 | 44.1 |
| *Average weekly income (% reduction)* | | | |
| Not married | 6.4 | 40.5 | 39.8 |
| Married/partner | 19.5 | 44.5 | 52.5 |
| All workers | 18.0 | 42.6 | 45.6 |

Tongan married workers were the only groups that had median and average weekly residual incomes of less than $280 per week or $40 per day. However, average weekly residual incomes of less than $40 a day on average were found for single Tongans, as well as single and married Samoans, and married Ni-Vanuatu.

In Table 33 the percentages of single and married workers in the low residual income categories are compared. Married workers, much more than single workers, feature in the income groups below $280 a week. Almost 15 percent of married Tongans had average weekly residual incomes of less than $140 ($20 per day) compared with nine percent of the single Tongan workers. Tongan married workers also had a much higher share of their workers in the under $140 a week category than the married Samoans or Ni-Vanuatu (both with four percent) (Table 33).

All of the Ni-Vanuatu single workers had average weekly residual incomes of $280 or more, compared with 59 percent of Samoans and 58 percent of Tongans. A quarter of the Samoan single workers had between $30 and $39 a day, on average, as disposable income after tax, orchard deductions and remittances were taken into account compared with 19 percent of Tongans. A third of the Samoan married workers had average daily residual incomes of this magnitude as well.

In the case of married workers, 81 percent of the Ni-Vanuatu had average weekly residual incomes of $280 or more while only 36 percent of married Tongans were in this category (Table 33). Married Tongans, especially, remit very frequently and send home a larger share of their gross incomes than any other group (see next section).

**Table 33: Average weekly residual income bands by marital status (MS)**

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 142 | 164 | 223 |
| *Under $140 (% of MS group)* | | | |
| Not married | 0.0 | 4.0 | 9.2 |
| Married/partner | 4.0 | 4.5 | 14.6 |
| Total (% of all workers) | 3.5 | 4.3 | 11.7 |
| *$140-$209.99 (% of MS group)* | | | |
| Not married | 0.0 | 12.0 | 14.2 |
| Married/partner | 2.4 | 13.5 | 27.2 |
| Total (% of all workers) | 2.1 | 12.8 | 20.2 |
| *$210-$279.99 (% of MS group)* | | | |
| Not married | 0.0 | 25.3 | 19.2 |
| Married/partner | 12.7 | 31.5 | 22.3 |
| Total (% of all workers) | 11.3 | 28.7 | 20.6 |
| *Over $280 (% of MS group)* | | | |
| Not married | 100.0 | 58.7 | 57.5 |
| Married/partner | 81.0 | 50.6 | 35.9 |
| Total (% of all workers) | 83.1 | 54.3 | 47.5 |

### *Marital status and remittances*

Clear evidence of regular remitting by Tongan workers, as well as their commitment to sending home significant shares of their incomes while working in New Zealand, can be found in Tables 34 and 35. Half of the 103 married Tongans who remitted money sent funds home on 67 percent or more of the weeks they were working in New Zealand (Table 34). This is a significantly higher frequency of remitting than was recorded for the 119 single Tongans with a median of 42 percent for the weeks in which remittances were transferred. It is also quite a bit higher than the remittance frequency for married Samoans (median of 54 weeks) and almost five times the remittance frequency of married Ni-Vanuatu (14 percent) (Table 34).

**Table 34: Percentage of available weeks remittances sent by marital status***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 164 | 222 |
| *Median % weeks remitted* | | | |
| Not married | 9.8 | 42.9 | 41.9 |
| Married/partner | 13.6 | 53.9 | 66.7 |
| Total all workers | 10.8 | 50.0 | 55.6 |
| *Average % weeks remitted* | | | |
| Not married | 9.1 | 43.6 | 44.4 |
| Married/partner | 15.2 | 52.4 | 63.2 |
| Total all workers | 14.6 | 48.4 | 53.2 |
| *Coefficient of variation (%)* | | | |
| Not married | 48.9 | 43.0 | 47.3 |
| Married/partner | 59.4 | 30.6 | 33.6 |
| Total all workers | 60.7 | 36.9 | 43.4 |

* Including final transfers

There is a consistent pattern of more frequent remitting by married workers in the medians and averages for the percentage of available weeks that remittance transfers were made. For Tongans, the difference in percentage of weeks when single (42-44 percent) and married (63-67 percent) workers remitted money home was as much as 20 percent. For Samoans this difference was 10 percent – between 43-44 percent of the available weeks (single) to 52-54 percent (married). Ni-Vanuatu married workers remitted on between 13 and 15 percent of the weeks they were working in New Zealand (Table 34).

In terms of percentages of their gross incomes that were remitted, married Tongans head the list with half of the group sending home more than a third of their total incomes while working (Table 35). For single Tongans, the share remitted was closer to 25 percent. Samoan single workers remitted similar shares of their gross incomes as the Tongan single workers (both had averages of just under 27 percent), but the married Tongans (36 percent) remitted, on average, more than the married Samoans (30 percent) (Table 35). Fifty percent of the Ni-Vanuatu single workers remitted just over 5 percent of their gross earnings (median 5.4 percent) – around four times less than their Samoan and Tongan counterparts. Married Ni-Vanuatu, on average, remitted less than 15 percent of their incomes but there was considerable variability among the 110 married workers in terms of this percentage given a coefficient of variation of 91 percent (Table 35).

**Table 35: Remittances as a percentage of gross income by marital status***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 164 | 222 |
| *Median % of gross income* | | | |
| Not married | 5.4 | 27.1 | 25.5 |
| Married/partner | 8.1 | 29.3 | 32.8 |
| Total all workers | 7.3 | 27.6 | 29.5 |
| *Average % of gross income* | | | |
| Not married | 5.4 | 26.8 | 26.7 |
| Married/partner | 13.9 | 30.2 | 35.6 |
| Total all workers | 13.0 | 28.7 | 30.8 |
| *Coefficient of variation (%)* | | | |
| Not married | 58.7 | 44.9 | 50.7 |
| Married/partner | 91.1 | 43.3 | 42.4 |
| Total all workers | 94.3 | 44.3 | 48.4 |

* Including final transfers

When the total amounts (including final transfers) remitted by Ni-Vanuatu, Samoans and Tongans are divided by the number of times they actually make transfers, there is not a lot of difference in the medians for the three groups (Table 36). This may seem rather surprising given the very big differences in actual amounts sent back to the islands by workers from the three countries who had been employed for 21-22 weeks (see Table 6 in section 2). However, when the total amount remitted by each worker is divided by the number of transfers that were made to send the money to the islands, the average amount for each remittance ends up being remarkably similar for the three groups of workers. This is because of major differences in the frequency of remitting – something that has been emphasized several times already in this report.

Ni-Vanuatu workers, with their much less frequent remitting, have a slightly higher median value ($451) for the average sized remittance than Samoans ($445) and Tongans ($435). In the case of Ni-Vanuatu, single workers have lower median and average remittances by value than married workers – the opposite of the case for Samoans and Tongans (Table 36). There are big differences within the groups in the average amount each worker remits, however, as is evident in the high coefficients of variation, especially for Ni-Vanuatu.

**Table 36: Average size of all remittances by marital status***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 122 | 164 | 222 |
| *Median all remittances (NZ$)* | | | |
| Not married | 345.00 | 481.33 | 446.92 |
| Married/partner | 472.83 | 433.36 | 421.74 |
| Total all workers | 450.83 | 445.01 | 435.19 |
| *Average all remittances (NZ$)* | | | |
| Not married | 567.92 | 651.14 | 534.90 |
| Married/partner | 712.28 | 495.91 | 462.69 |
| Total all workers | 680.08 | 566.9 | 501.40 |
| *Coefficient of variation (%)* | | | |
| Not married | 96.9 | 87.4 | 79.5 |
| Married/partner | 114.7 | 58.4 | 47.6 |
| Total all workers | 113.8 | 78.6 | 69.1 |

* Including final transfers

If final transfers are not included, and just the remittances made during the period of employment are considered, the differences between single and married workers in the three groups effectively disappear (Table 37). Tongans, rather than Ni-Vanuatu, have the higher median value for the average sized standard remittance, with the median value for Samoan remittances marginally below that for the Tongans.

This order changes when averages rather than medians are considered, and Ni-Vanuatu have higher values for their standard remittances than the other two groups (Table 37). But, again, coefficients of variation of over 100 percent for the Ni-Vanuatu make these averages for amounts remitted of questionable utility as summary statistics for comparative purposes. More useful indicators of differences in remittance behaviour are the comparisons of remittance frequency (Table 34) and the comparisons of shares of gross income actually remitted (Table 35).

**Table 37: Average size of standard remittances by marital status***

| Age group | Ni-Vanuatu | Samoans | Tongans |
|---|---|---|---|
| Number | 118 | 164 | 222 |
| *Median standard remittances (NZ$)* | | | |
| Not married | 230.00 | 309.33 | 321.44 |
| Married/partner | 250.00 | 305.38 | 321.88 |
| Total all workers | 250.00 | 308.17 | 321.88 |
| *Average standard remittances (NZ$)* | | | |
| Not married | 404.00 | 365.97 | 365.43 |
| Married/partner | 406.79 | 376.76 | 377.54 |
| Total all workers | 406.55 | 371.83 | 371.07 |
| *Coefficient of variation (%)* | | | |
| Not married | 124.6 | 84.9 | 58.9 |
| Married/partner | 106.1 | 71.0 | 52.1 |
| Total all workers | 106.4 | 77.3 | 55.6 |

* Excluding final transfers

## 4.3 Some implications of findings from this section

There are differences in earnings and remittances by age and marital status but these are not always consistent across the three groups of workers. The strongest relationships are found for residual incomes – the balance of earnings after tax, orchard deductions and remittances are accounted for. These relationships reflect differences in patterns of remitting more than differences in earnings per se. Younger workers tend to have higher residual incomes than older workers because older workers tend to remit more frequently and send home greater shares of their gross earnings while working in New Zealand. This is especially the case for Tongan seasonal workers; the strongest relationships between age and measures of income and remittances are found for this group.

In the case of marital status, single workers in all three groups had higher residual incomes than married workers, reflecting the higher frequency and value of remittances while working by the latter. These differences were most marked for Tongans, and only 36 percent of their married workers had average weekly residual incomes of $280 or more, compared with 50 percent of Samoans and 81 percent of Ni-Vanuatu. Older, married Tongans were consistently the group that had the lowest residual incomes, the greatest frequency of remitting and the largest shares of their gross incomes heading back to the islands.

These findings have relevance for the objectives relating to development impacts of seasonal work schemes in the Pacific. From the outset, the scheme prioritised the recruitment of younger, fit males for picking and pruning – tasks that involve extensive continuous physical activity for 8 to 10 hours a day. Initially preference was given to single men on the grounds that their absences would be unlikely to cause as much disruption to family life as the absence of a husband or father. However, there was also a perception that single men might be more susceptible to breaching their visa conditions either through incidents arising from excessive alcohol consumption or by failing to return home at the end of the employment period. Some growers preferred to recruit married men because they had greater incentives in their family commitments to save rather than spend their wages and also greater incentives to go home to rejoin their families when their work visas expired.

As is evident from the data analysed in this section there is quite a bit of variability in both the age and marital status composition of the groups of Ni-Vanuatu, Samoan and Tongan workers (Appendix 1b). This variability in age composition is reasonably consistent with statistics for the total numbers of RSE workers from the three countries (Table 38). From the commencement of the RSE scheme in 2007 there has always been an "older" Ni-Vanuatu workforce recruited than was the case with either the Samoans or the Tongans.

The average percentage of Ni-Vanuatu workers recruited each year in the 18-29 age group over the 10 years since the scheme was launched is 37.8 compared with 50.5 percent of Samoans and 51.3 percent of Tongans (Table 38). In the older age group (40 years and over), the average percentages for Ni-Vanuatu, Samoans and Tongans recruited each year through to January 2017 are: 24.8, 16.3 and 16.8. The coefficients of variation for these annual averages are highest for the Tongans and this is because there has been a shift towards a younger RSE workforce from that country over the decade. The lowest coefficients of variation are for the Ni-Vanuatu indicating consistency in the age composition of workers each year since the scheme began.

The age compositions of the three survey populations are also given in Table 38. The 142 Ni-Vanuatu had higher percentages in the 30-39 (45.8) and 40+ (31.0) age groups than were found for these age groups for the 3,955 Ni-Vanuatu who had approved RSE visas in the year ended 30 June 2016 (39.0 percent aged 30-39 years and 24.0 percent aged 40+ years) (Table 38). In the case of the 164 Samoans surveyed, for whom we have age data, the percentage aged 18-29 years (50.6) was slightly smaller than the percentage in this age group for all Samoans who were approved for RSE visas in 2015/16. A correspondingly higher share (36.6 percent) of the survey was found in the 30-39 year age group and a shortfall in the older age group (Table 38). Over 60 percent of the 220 Tongans surveyed were in the 18-29 year age group compared with just under 58 percent of Tongans with approved RSE visas. The shortfall was made up mainly in the 30-39 year age group (22.7 percent of the survey population compared with 28.7 percent in the corresponding visa approval group) (Table 38).

These differences in age composition of workers from different source countries for RSE workers have implications for the development impacts of the scheme given that there are differences by age group in gross incomes and in remittances, even if the relationships between age and these latter variables are not always consistent. The older Ni-Vanuatu worker population includes a much higher share of married men than the much younger Tongan worker population. Age and marital status are important variables to keep in mind when evaluating the potential impact of the RSE scheme on families and their communities in the islands.

**Table 38: Age composition of RSE workers, 2007/8-2015/16**

| Source country and year | Age group (% total) 18-29 | 30-39 | 40+ | Total number |
|---|---|---|---|---|
| *Vanuatu* | | | | |
| 2007/08 | 35.8 | 35.9 | 28.3 | 1,688 |
| 2015/16 | 37.0 | 39.0 | 24.0 | 3,995 |
| All years* | 37.8 | 37.7 | 24.8 | 28,102 |
| Average (10 years) | 37.8 | 37.5 | 24.8 | |
| Standard deviation | 1.6 | 1.4 | 1.5 | |
| Coefficient of variation (%) | 4.2 | 3.6 | 5.9 | |
| Ni-Vanuatu survey population 2016 | 23.3 | 45.8 | 31.0 | 142 |
| *Samoa* | | | | |
| 2007/08 | 46.7 | 34.2 | 9.1 | 717 |
| 2015/16 | 52.4 | 32.7 | 14.9 | 1,575 |
| All years* | 50.6 | 33.1 | 16.3 | 12,247 |
| Average (10 years) | 50.5 | 33.2 | 16.3 | |
| Standard deviation | 2.0 | 1.0 | 1.7 | |
| Coefficient of variation (%) | 4.0 | 3.1 | 10.5 | |
| Samoan survey population 2014/15 | 50.6 | 36.6 | 12.8 | 164 |
| *Tonga* | | | | |
| 2007/08 | 40.7 | 37.4 | 21.9 | 902 |
| 2015/16 | 57.9 | 28.7 | 13.5 | 1,829 |
| All years* | 51.5 | 31.7 | 16.8 | 15,073 |
| Average (10 years) | 51.3 | 31.8 | 16.8 | |
| Standard deviation | 6.3 | 3.1 | 3.2 | |
| Coefficient of variation (%) | 12.2 | 9.8 | 19.0 | |
| Tongan survey population 2014/15 | 62.3 | 22.7 | 15.0 | 220 |

* 1 July 2007 to 30 January 2017

Source of data on total RSE visas approved by country: *W1 Work applications decided* https://www.immigration.govt.nz/about-us/research-and-statistics/statistics

## 5. HIGH-LEVEL SUMMARY AND CONCLUSIONS

The main findings from this statistical analysis and comparison of incomes and remittances generated by groups of RSE workers from Vanuatu, Samoa and Tonga have been summarised at the end of each major section of the report. These will not be repeated here. The focus of this short concluding section is on some of the high-level conclusions that can be drawn from the survey findings, especially conclusions that have relevance for how the economic benefits for workers and their families are described and can be better understood.

The RSE scheme is frequently described in terms of triple wins: a win for employers, a win for the workers and a win for the communities the workers come from (R. Bedford et al. 2016; C. Bedford, 2014, 2013; Bailey, 2014, 2013; Ramasamy et al, 2008, among others). The *RSE Remittance Pilot Project, 2014/15,* and its extension to a group of Ni-Vanuatu workers in 2016, was designed to provide a better evidence base relating to the "win" for workers – the incomes they earned while working in New Zealand and the remittances these earnings enabled them to transfer back to the islands via money-transfer agents. Some information on other forms of remittances – goods purchased in New Zealand and sent back in containers or as excess baggage, or cash carried home by the workers – was collected in the 2014/15 survey and its extension but this was not of the same quality as the information on incomes and remittance transfers.

The data discussed in this report confirm the comparatively high gross incomes RSE workers can earn during five to seven months of seasonal work in New Zealand. This is especially the case if they are working on contract or piece rates and the season is a productive one where commencement of work is not delayed by weather or other factors beyond the control of the seasonal worker. An example of the impact of a delayed start on earnings was found in the groups of Ni-Vanuatu employed by Baygold and Eastpack who had to wait at least a fortnight for the sugar content of the kiwifruit they had been recruited to pick to reach the required level. Their earnings were somewhat lower than those for the Ni-Vanuatu employed for a comparable period working on vineyards in the South Island.

The gross earnings over a 21-22 week period by Samoans and Tongans thinning and picking apples in the Hawke's Bay in 2014/15 were higher than those earned by Ni-Vanuatu working for similar periods during 2016 in kiwifruit orchards in the Bay of Plenty and vineyards in Marlborough. Some of the difference may be accounted for by the season but it is also likely that there are differences linked with the kind of crop being picked. It would be interesting to compare gross earnings by Ni-Vanuatu, Samoans and Tongans, working over similar periods and being paid contract rates, across a range of crops. The comparison that is possible with the data collected in the *RSE Remittance Pilot Project, 2014/15* and its 2016 extension involved two groups picking the same crop (Samoans and Tongans) and a group (Ni-Vanuatu) working with two different crops – kiwifruit and grapes. It is not possible to control for the impact of any difference the nature of the crop may have on gross earnings.

More interesting than the differences in gross earnings are the differential impacts of remittances transfers on incomes that became apparent once detailed information became available on the money transfers made by workers during the time they were employed. The primary objective of the *RSE Remittance Pilot Project* was to obtain data on actual remittance transfers – the amounts sent home by seasonal workers and the frequency of their remitting. Some background information on the fees paid for remittance transfers was collected in a separate questionnaire in the 2014/15 survey (MBIE, 2015; Gounder 2015). In the 2016 survey of Ni-Vanuatu incomes and remittances, details were recorded of the actual fees paid for each of the transfers documented for the workers.

One of the major findings from the 2016 survey is the much lower incidence of remitting by Ni-Vanuatu workers by comparison with Samoans and Tongans. Whereas Samoans and Tongans were sending home money on a very regular basis with transfers occurring, on average, on at least 50 percent of the weeks they were employed, Ni-Vanuatu workers, on average, were only remitting on 15 percent of the available weeks. While Samoans and Tongans were remitting, on average, the equivalent of 30 percent of more of their gross incomes, Ni-Vanuatu workers were remitting, on average, 13 percent. The impact of transferring money regularly while working on Samoan and Tongan disposable incomes in New Zealand as well as on their bank accounts and families in the islands was therefore very different from the impact of remittances on Ni-Vanuatu disposable incomes in New Zealand and on their accounts and families in the islands.

One way of illustrating the impact of different remittance behaviours and patterns was to deduct the totals sent home by each worker from their net incomes (after tax and standard orchard deductions which workers had no choice about paying). The balance after removing remittances was termed for convenience the “residual income” – a hypothetical aggregate sum left over after standard deductions to cover the worker’s share of the international airfare as well as transport, accommodation and insurance in New Zealand, and the deduction of all remittance transfers. The shares of net incomes that were transferred back to the islands ranged from averages of 43-46 percent for Samoans and Tongans to 18 percent for Ni-Vanuatu. When the residual incomes were converted into hypothetical weekly averages by dividing a worker’s total residual income by the number of weeks he worked, some very different “average weekly residual incomes” were produced reflecting a wide range of “disposable incomes” to cover living costs in New Zealand.

These average weekly residual incomes attract quite a bit of attention in the report and the analysis will not be repeated here. The relevance of this indicator of average disposable incomes for the discussion of the “wins” for seasonal workers and their families and communities in the islands is that it highlights very clearly the impact of different remittance patterns on funding available to support workers in New Zealand and their kin in the islands.

There is much more variability between workers as well as between groups in both their disposable incomes and the sums they remit to the islands than has been acknowledged in the literature before. Providing a reasonably robust data base to generate this better understanding of the impact of different remitting behaviours between groups of Pacific workers, as well as within groups by experience of seasonal work, age and marital status, is one of the major contributions of the *RSE Remittance Pilot Project, 2014/15* and its 2016 extension.

The data on incomes, deductions and remittances was accompanied by information on each worker's years of seasonal work experience, age group and marital status. The numbers of workers in the different categories of these "profile variables" are summarised in Appendix 1. The profile data allowed for a descriptive analysis of some relationships between incomes and remittances on the one hand and profile variable categories on the other. These relationships are explored with reference to some basic framing questions in sections 3 and 4 of the report, and the key findings are summarised in these sections. Four high-level conclusions emerge from these analyses:

1) Average weekly gross incomes for seasonal workers begin to plateau and sometimes decline after four or more seasons of work in New Zealand suggesting that from the point of view of productivity (as measured by incomes generated while on contract rates) there is not a great deal to be gained from bringing back the same workers in successive seasons beyond the fourth or fifth season.
2) Older workers and workers who are married remit more frequently and send home larger aggregate sums than younger workers, and those who are single. This suggests that if remittances are considered to be a major "win" from participation in the RSE for families and communities in the islands then a focus on younger, single workers at the expense of older ones may not necessarily be the most desirable strategy for promoting development outcomes from the scheme.
3) While there is no consistent relationship between age group and marital status on the one hand, and average weekly gross incomes on the other, once remittances are taken into account, younger, single workers tend to have higher residual incomes than older, married ones and this may give them more flexibility when addressing the demands on their incomes while living in New Zealand. Because of a higher than expected incidence of average weekly residual incomes that equated to less than $30 a day being available to cover discretionary living costs in New Zealand, especially among the married and older Tongan workers, it is suggested that further research is carried out on the actual living costs for Pacific seasonal workers in New Zealand.
4) In all of the analyses carried out in this report statistical evidence of variability around averages or medians, the two main summary measures used for incomes and remittances, has been presented. This variability was not commented on in the initial reports on the 2014/15 survey and one of the main reasons for carrying out the additional statistical analysis was to make differences between workers and groups of workers more visible. It is clear from the discussion in this report that remittances

especially are highly variable, as are disposable incomes once tax, orchard deductions and remittances have been accounted for. This variability is summarised statistically in the various tables as a coefficient of variability (a percentage). Where the coefficient of variation is large (over 50 percent) the average to which it relates needs to be interpreted with caution – it is not necessarily expressing a quantity that is very representative of the group.

It is widely known that there is considerable interest among governments of many of the Pacific Forum countries in increasing their citizens' access to work in New Zealand and Australia. A long-debated Labour Mobility Arrangement, that sits outside the PACER Plus Agreement, is testimony to this interest. In light of this interest, and the expectations that Pacific workers have of their earnings and remittances when working in New Zealand and Australia, it is essential that good data on these are collected and analysed. The *RSE Remittance Pilot Project* collected some excellent data on earnings and remittances. This report has contributed to the analysis of these data and to uncovering some dimensions of earnings and remittances of Pacific seasonal workers in New Zealand that have previously not been able to be explored so systematically.

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# APPENDICES

## APPENDIX 1: SOME CHARACTERISTICS OF THE SURVEY POPULATIONS

**Appendix 1a: Number of seasons workers employed on RSE scheme**

| | Ni-Vanuatu | | Samoans | | Tongans* | |
|---|---|---|---|---|---|---|
| **Seasons** | **Number** | **%** | **Number** | **%** | **Number** | **%** |
| 1 season | 19 | 13.4 | 54 | 20.5 | 33 | 20.2 |
| 2 seasons | 24 | 16.9 | 57 | 21.6 | 40 | 24.5 |
| 3 seasons | 30 | 21.1 | 42 | 15.9 | 28 | 17.2 |
| 4 seasons | 25 | 17.6 | 31 | 11.7 | 15 | 9.2 |
| 5 seasons | 13 | 9.2 | 27 | 10.2 | 21 | 12.9 |
| 6 seasons | 19 | 13.4 | 21 | 8.0 | 8 | 4.9 |
| 7 seasons | 3 | 2.1 | 21 | 8.0 | 10 | 6.1 |
| 8 seasons | 8 | 5.6 | 6 | 2.3 | 6 | 3.7 |
| 9 seasons | 1 | 0.7 | 5 | 1.9 | 2 | 1.2 |
| **Total** | **142** | **100.0** | **264** | **100.0** | **163** | **100.0** |
| 1 or 2 seasons | 43 | 30.3 | 111 | 42.0 | 73 | 44.8 |
| 3 or 4 seasons | 55 | 38.7 | 73 | 27.7 | 43 | 26.4 |
| 5 or 6 seasons | 32 | 22.5 | 48 | 18.2 | 29 | 17.8 |
| 7 + seasons | 12 | 8.5 | 32 | 12.1 | 18 | 11.0 |

* One employer did not provide information on the seasons worked by his 60 Tongan workers

**Appendix 1b: Age and marital status group**

| | Ni-Vanuatu | | Samoans* | | Tongans** | |
|---|---|---|---|---|---|---|
| **Group** | **Number** | **%** | **Number** | **%** | **Number** | **%** |
| **Age** | | | | | | |
| 18-29 yrs | 33 | 23.2 | 83 | 50.6 | 137 | 62.3 |
| 30-39 yrs | 65 | 45.8 | 60 | 36.6 | 50 | 22.7 |
| 40+ yrs | 44 | 31.0 | 21 | 12.8 | 33 | 15.0 |
| **Total** | **142** | **100.0** | **164** | **100.0** | **220** | **100.0** |
| **Marital status** | | | | | | |
| Not married | 16 | 11.3 | 75 | 45.7 | 120 | 53.8 |
| Married/partner | 126 | 88.7 | 89 | 54.3 | 103 | 46.2 |
| **Total** | **142** | **100.0** | **164** | **100.0** | **223** | **100.0** |

* One employer did not provide information on the ages and marital status of his 100 Samoan workers

** Data on the ages of three Tongan workers were not provided

## APPENDIX 2: VARIABLES AND STATISTICS USED IN THE ANALYSIS

A range of variables were calculated from the data provided by the RSEs on earnings and deductions and by the workers on remittances. The main variables are listed below.

*Earnings*

1. Gross or total earnings
2. Average weekly gross earnings
3. Average weekly earnings after tax and other standard deductions (net income)
4. Average weekly earnings after tax, other standard deductions and remittance transfers (residual income)

*Deductions*

1. Total deductions including tax and other standard payments
2. Average weekly deductions

*Remittances*

1. Total remittances, including large transfers in the final week
2. Total regular remittances (excluding large transfers in the final week)
3. Total large transfers in the final week
4. Percentage of gross income remitted (including large transfers in the final week)
5. Number of weeks of regular remitting
6. Percentage of weeks available when funds were remitted on a regular basis
7. Average value of regular remittances
8. Average value of total remittances (including large transfers in the final week)

In some of the tables contained in section 3 the above variables have been derived for workers grouped by years of work experience as well as age and marital status. These 'profile variables' are as follows:

*Years of seasonal work experience*

1. Single years between 1 and 4 and grouped years 5-6 and 7+

*Age groups*

1. 18-29 years
2. 30-39 years
3. 40+ years

*Marital status*

1. Not married
2. Married

Not all of the RSEs provided data on work experience, age group or marital status for their Samoan and Tongan workers. This means that some of the tables contain data for smaller groups of Samoans and Tongans than others.

## Statistics used in the analysis

The statistics presented for each of the variables included in the re-analysis fall into two groups: *positional measures* (maximum, minimum, median, upper and lower quartiles, interquartile range) and *arithmetic measures* (average or mean, standard deviation, coefficient of variation, correlation coefficient and coefficient of determination). Where they are all presented in a particular table they are ordered as follows:

*Positional statistics*

1. Maximum value (the largest number)
2. Minimum value (the smallest number)

3. Upper quartile (the number above which a quarter of the values are located)
4. Median (the number above which half of the values are located)
5. Lower quartile (the number above which three-quarters of the values are located)
6. Interquartile range (the upper quartile minus the lower quartile)

*Arithmetic statistics*

7. Average or mean (the sum of all values divided by the number of values)
8. Standard deviation (the average deviation of each value from the mean)
9. Coefficient of variation (a percentage that expresses the relationship between the standard deviation and the mean)
10. Correlation coefficient (*r* - a measure of the strength of the relationship between two variables)
11. Coefficient of determination ($r^2$ – a measure of the extent to which variation in the values of one of the variables in the correlation analysis is explained statistically by variation in the values of the other variable in the analysis)

The positional and arithmetic statistics relate to three kinds of measures: central tendency, dispersion and association or relationships. These are described briefly below.

*Measures of central tendency*

There are three measures of central tendency: the median, the mean and the mode. Two of these, the *median* and the *mean*, are used in the analysis of the earnings and remittances data.

The *median* is the positional statistic which divides in half the distribution of values for people in the group that is the subject of the analysis. Half the values in a variable are above the median and half of them are below the median. It is a useful measure when you have quite

a bit of variation in values, including some extreme high values and low values, which can have a big effect on the arithmetic statistic of central tendency – the average or the mean.

The *average* or the *mean* is an arithmetic statistic that is derived by dividing the total or sum of the values for all the people in the group being analysed by the number of people in the group. It is a statistic that can be affected by unusually high or low values for the variable under consideration.

*Measures of dispersion*

Measures of dispersion give indications of the spread of values around the median or the average. Several of these measures are used in association with each other. The *maximum* and *minimum* specify the extremes in values for a particular variable. The *range*, which is not listed separately in the tables, is the difference between the maximum and minimum.

The *upper* and *lower quartiles* are positional statistics that divide off the top 25 percent (upper quartile) and the bottom 25 percent (lower quartile) of the values for a variable. The *interquartile range* is the difference between the upper and lower quartiles. A large interquartile range in relation to the median indicates a lot of variation in the values; a low interquartile range indicates a limited amount of variation.

The *standard deviation* is an arithmetic measure of dispersion and it can be best understood as another kind of average. It indicates the average difference between values for each person in a distribution and the value for the *average* or *mean* of the distribution. A high standard deviation in relation to the average or mean indicates a lot of variation in the distribution; a low standard deviation indicates a limited amount of variation.

The *coefficient of variation*, usually expressed as a percentage value, is derived by dividing the average (mean) by the standard deviation – it is a useful comparative statistic for summarizing the extent of variation in a distribution. The coefficients of variation for different distributions are directly comparable because the amounts of variation in the distributions being compared have all been expressed in terms of a statistic with a consistent range of values between 0 and 100. The smaller the percentage value for the coefficient of variation, the lower the amount of variation within the distribution.

Generally, where the coefficient of variation is under 20 percent then the standard deviation is quite small in relation to the mean and the amount of variation in the distribution is relatively modest. By contrast, where the coefficient of variation is over 50 percent then the standard deviation is quite high in relation to the mean and the amount of variation in the distribution is significant.

*Measures of association or relationship*

In some places in the text reference is made to *correlation coefficients*, and the associated *coefficient of determination* (also referred to as the percentage of explained variation), when commenting on the nature of a relationship between two variables relating to earnings and remittances.

The *correlation coefficient* (*r*) is an arithmetic measure of the strength of association or relationship between two variables – for example, total income earned and number of weeks employed, or total remittances sent home and number of weeks employed. Correlation coefficients range from 1.00 (perfect relationship) to 0.00 (no relationship). If the correlation coefficient has a negative sign associated with it, it means that there is an inverse relationship between the values in the two variables – as the values for one variable get larger, the values for the other variable get smaller.

The strength of an association or relationship between two variables that is expressed in a *correlation coefficient* can be measured statistically. The number of cases in the variables being compared has a big impact when determining the level of statistical significance of the relationship. Because quite large numbers of people are involved in the relationships being compared in this analysis (142 Ni-Vanuatu, 246 Samoan workers, 241 Tongan workers) most of the correlation coefficients cited in the tables and text in the report are statistically significant at or above the 95 percent probability level (<.005). This means there is no more than a 5 percent chance that the relationship summarized in the correlation coefficient is due to chance.

A related statistic, *the coefficient of determination* or $r^2$, provides a measure (usually expressed as a percentage) of the amount of variation in one of the variables in the analysis that is explained by the variation in the other variable in the analysis. In the text in this report, the coefficient of variation is sometimes referred to as “percentage of explained variation”.