

# ‘WHAT ABOUT THE MENZ?’

LOW EMPLOYER ATTACHMENT AND INELIGIBILITY  
FOR PARTNER PARENTAL LEAVE



An analysis using Integrated Data Infrastructure data.  
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# 1. Executive summary

In 2018, the Social Wellbeing Agency (SWA) in collaboration with The Southern Initiative (TSI) used Integrated Data Infrastructure (IDI) data to describe what was going on for families 'Having a Baby in South Auckland' (HaBiSA). One of the study's findings was that income gaps for low-income fathers in the birth month as they took unpaid leave or quit their jobs, seemed under-researched, despite the potential impact of precarious household income or a lack of paid leave during this crucial period.

Parental leave taken by secondary caregivers, especially when paid, is associated with better outcomes for children, families, and even the gender pay gap. However, secondary caregivers in New Zealand are not eligible for paid parental leave (unless 'transferred' from the primary caregiver), and they only qualify for two weeks of unpaid parental leave if they have been with one employer consistently for at least 12 months.

In this study TSI, with the support of SWA, carried out longitudinal and time series analysis of IDI income data for the fathers of a cohort of 53,000 New Zealand babies one year on either side of birth. We looked at how income and occupation affected peoples' ability to take time off at all – as indicated by dips in income around the time of birth. We also estimated how many dads were eligible for parental leave around the time of their baby's birth – as measured by their length of attachment to their main employer.

We found that for dads who worked for wages, one in six might be missing out on eligibility for any partner parental leave from their main employer when their babies were born, as eligibility in New Zealand depends on continuous attachment to a single employer for at least six months. For Māori and Pasifika this was more like one in four wage-earning dads.

Precarious, casual or seasonal jobs and the big industries that rely on them, like construction, agriculture and admin temp agencies, appear to contribute to dads missing out on parental leave entitlements. Māori or Pasifika dads are more affected due to their concentration in these types of jobs and lower pay on average. South Auckland dads were, on the face of it, more likely than those in the rest of the country to miss out on leave. But once controlling for age and ethnic group this South Auckland disadvantage was no longer statistically significant – it was fully accounted for by the demographic concentration of socioeconomic disadvantage.

We also found that the richest dads have the biggest and longest income dips around the time of a baby's birth, while low-income working dads have shallower and shorter dips. It seemed likely that low-paid dads were less likely to be able to afford to take time off paid work to support babies and partners, given that secondary caregiver parental leave in New Zealand is unpaid.

However, for the lowest-income dads, the birth of a baby was not simply a vulnerable time but a potentially transformative period, as they increased rather than decreased their income. Expected arrival of a baby seemed to be a strong motivating factor to get income into the household, either through entering the workforce or increasing working hours.

This study provides clear evidence to support changing the eligibility requirements for secondary caregiver parental leave, and for providing paid parental leave support for secondary caregivers.

## 2. Background

In 2018, the Social Wellbeing Agency (SWA) in collaboration with The Southern Initiative (TSI) used Integrated Data Infrastructure (IDI) data to describe what was going on for families 'Having a Baby in South Auckland' (HaBiSA) around the time of birth. One of the findings noticed dips in male wage-earners' incomes below the equivalent of a full-time minimum wage in the birth month. In iterative qualitative research based on these findings, South Auckland families hypothesized that low-income dads were often likely to simply quit their jobs for a period when babies were born, and pick up work later, given the lack of paid or unpaid leave entitlements for them in casualised industries and occupations (The Southern Initiative & Social Wellbeing Agency, 2020).

Around 83% of working dads take some kind of leave around the time that a baby is born (Centre for Longitudinal Research, 2017; Department of Labour, 2007). This is typically a combination of paid annual leave they have 'saved up', unpaid parental leave, and for a few, paid parental leave; although parents who were ineligible for leave were likely to be the most socioeconomically vulnerable (Growing up in New Zealand, 2014).

In New Zealand, parents who are not the primary caregiver are eligible for two weeks unpaid leave if they have been with an employer for at least a year, and one week of unpaid leave for those who have been with an employer for at least six months (Employment New Zealand, n.d.). Paid annual leave accumulates incrementally, and eligibility depends on the job.

This project investigates the occupations, industries, income trajectories, and employer stability of fathers who may be vulnerable due to a lack of leave entitlements at the birth of their child, including those who dipped below the equivalent full-time minimum wage in birth month. The purpose of this is to set the scene for developing policy responses to improve support for households with new babies.

## 3. Why focus on secondary caregivers (or 'the menz') in birth month?

After a historically limited focus in the social sciences on paternal occupational class as a driver of child outcomes, in more recent decades child-focused studies, welfare policies and interventions as a whole have focused more on support for primary carers, mainly mothers. However, ultimately, income and influences from all potential parental and household sources are important for a child, especially in the first 1000 days of life. There is a wealth of evidence setting out the need to support fathers and secondary caregivers to take parental leave, showing that it benefits children, mums, and whole families. Much of this research is possible because the vast majority of OECD countries provide some form of paid parental leave for

fathers and secondary caregivers (OECD Family Database, 2019). Despite longstanding recommendations (National Advisory Council on the Employment of Women, 2008), New Zealand is one of the very few OECD countries that does not provide any ringfenced paid leave for secondary caregivers.

Studies that focused on dads have shown that higher levels of involvement from all possible parents is good for children's development and long-term outcomes (Cabrera et al., 2018; Rohner & Veneziano, 2001; Sarkadi et al., 2008). The mental health and stress levels of primary caregivers improves with higher levels of co-parenting responsibilities taken on by partners (Mallette et al., 2020), while the maternal wage penalty lessens (Farré & González, 2019). Greater partner involvement also protects children from the impact of poor maternal mental health (Petts & Knoester, 2018; Sarkadi et al., 2008). Fathers who take parental leave have higher levels of engagement and involvement throughout childhood (Knoester et al., 2019; Petts & Knoester, 2018; Tamm, 2019), and changes in state-mandated eligibility for partner parental leave encourages take-up of leave by dads (Bartel et al., 2017; Druedahl et al., 2019; Patnaik, 2019; Tamm, 2019). There is mounting evidence that the act of taking paternity leave itself, regardless of pre-existing attitudes and involvement during the pregnancy, gets fathers used to doing hands-on tasks early on in the care of their babies. This seems to have a knock-on effect of more direct involvement in childcare and family decision-making from fathers later on, including for low-income and non-resident fathers (Centre for Longitudinal Research, 2017; Farré & González, 2019; Pryor et al., 2014; Tamm, 2019).

In short, partner parental leave – especially when paid – is a social good. It is good for children, dads, mums, and family functioning as a whole. It is also increasingly seen as a private good by fathers, even if unpaid. New Zealand research has highlighted how the current cohort of fathers has a much higher expectation and intention of involvement in child-raising and new baby support than previous generations (Centre for Longitudinal Research, 2017; Department of Labour, 2007), reflecting international trends (Cabrera et al., 2004; Cooper, 2017; Kane et al., 2015; Knoester et al., 2019).

Although fathers are more emotionally and practically engaged than they used to be, not all have the same opportunities for early involvement in hands-on baby care. The opportunity for secondary caregivers to take parental leave in New Zealand is limited by employment eligibility, and is unpaid, meaning it is skewed towards families who can afford it. It is currently inevitable that low-income fathers and other partners of primary caregivers are missing out on the opportunity to spend as much time with their babies and children as they would like.

Qualitative research in South Auckland as part of the HaBiSA project highlighted the urge among Māori and Pasifika fathers to prioritise time with baby and mother around the birth, despite precarity of income sources. It is well documented that low-income fathers, including those not living permanently with their children, try to provide the best kinds of support that they can afford (Berentson-Shaw, 2017; Cooper & Stewart, 2013, 2015, 2020; Walsh et al., 2020). But ultimately, low-paid parents in casual work arrangements are forced to make financial trade-offs around a baby's birth that may impact their later relationships with their children, partners and families, because statutory paid partner parental leave is not available in New Zealand. Moreover, a substantial amount of statutory support for new parents, including for primary caregivers, is in large part dictated by employment conditions. While there has

been recent expansion of parent entitlements in New Zealand<sup>1</sup>, there has been no expansion or creation of either universal or paid leave entitlement for partner parental leave, despite its typically short duration and evidence of its positive impacts.

There is currently a grey area in government or policy responsibilities, between conditions governed by employer-related entitlements; and the experiences of gaps in entitlements for employees and their families, driven by disconnection from employers.

In terms of wider concerns about income and inequalities, the lack of access to parental leave entitlements for partners may perpetuate cycles of insecure or precarious work, which typically holds back wage and career progression (Statistics New Zealand, 2019). Employer change or job-to-job transition is an indicator of career progression for those with higher socioeconomic status (Ball et al., 2020); while the flipside is precarious or fluctuating employment in casualised occupations without consistent employer relationships. We know that higher proportions of young people, Pasifika people, and workers in labouring occupations, sales and personal services, are in temporary or casual labour (Auckland Council, 2020; NZIER, 2016), and are therefore more likely miss out on statutory parental leave.

South Auckland is an intersection of these labour market vulnerabilities, with community development aiming to raise the quality of jobs and conditions. Included in this analysis will be the consideration of South Auckland as a point of descriptive comparison with other typical geographic indicators. South Auckland is often subsumed within Auckland in national-level quantitative analysis of labour market inequalities, despite the socioeconomic picture of it as a city apart that does not benefit from the Auckland advantage of lower unemployment and higher income (Auckland Council, 2020; NZIER, 2016).

## Research questions

### 1. Context: What is the overall income trajectory for fathers one year either side of a baby's birth?

- a) What is the general pattern on average?
- b) What is the pattern for key subgroups, such as Māori & Pasifika, South Auckland, and different industries and occupations?
- c) Do factors associated with lower socioeconomic status independently predict income trajectories over the different periods around a baby's birth?

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<sup>1</sup> Recent New Zealand government policies increasing support for families, such as the extension of paid parental leave for primary carers, and the Families Package (Campbell, 2018; Hannif & Lamm, 2005; Laß, 2020; Pacheco et al., 2016; Plum et al., 2019; Plum & Pacheco, 2019; Standing, 2011; Tucker, 2002) are premised on evidence that more money in the home is better for children, especially in the crucial early years, where it protects parents from a range of stressors that end up impacting children's brains, bodies and behaviours; while increasing capacity for the time and resource investment that nurtures them (Arnesen & Wilson, 2019; Berentson-Shaw, 2017; Cooper & Stewart, 2013, 2020).



## 2. Minimum-wage dads: What are the characteristics of fathers dipping below the full-time minimum wage threshold around the birth of a child?

- a) Is there anything unique about the fathers this happens to in the birth month, versus any other time?
- b) Is this group meaningfully different from other fathers who cross the 'threshold' in the other direction or who are more consistently below the full-time minimum wage threshold?

## 3. Systemic vulnerabilities and gaps: How many parents are missing out on partner parental leave due to casualised labour patterns?

- a) What proportion of fathers have less than twelve and less than six months work history with their main employer, at the month of their baby's birth?
- b) What predicts low employer attachment, and are there different effects for different subgroups, occupations and industries?

# 4. Methodology

## Data sources

Our analysis included data from various sources from the Statistics New Zealand's Integrated Data Infrastructure (IDI). 'Fathers' were extracted from Department of Internal Affairs' Life events data. Dependent and independent variables of interest were derived from following data sources:

- a. Inland Revenue – EMS Records
- b. Statistics New Zealand – Census 2018
- c. Ministry of Education – School Enrolments, Tertiary Enrolments, Industry Training and Qualifications data.
- d. Fabling-Maré Labour Tables – This is a derived table based on EMS records (Fabling & Maré, 2015).
- e. DIA Life Events – Birth Records and Marriage Records
- f. Statistics New Zealand Derived Tables – Address Notifications, Personal Details and Estimated Resident Population Table.
- g. Ministry of Business, Innovation & Employment – Visa Records
- h. Ministry of Social Development – Benefits Data

### Statistics New Zealand disclaimer

*Access to the data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the author, not Stats NZ or individual data suppliers. These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI please visit*

<https://www.stats.govt.nz/integrated-data/>.

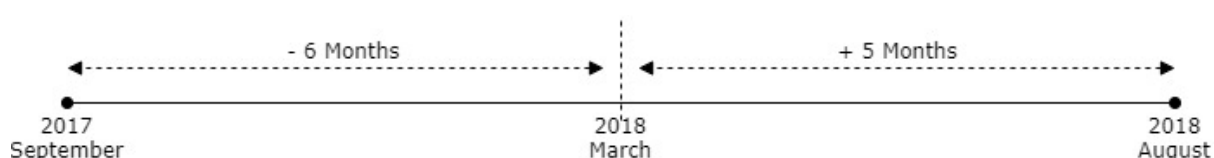
*The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.*



## Sample

Policymakers working on parental leave issues should be interested in conditions for all partners of primary caregivers having babies in New Zealand, and all secondary caregivers of babies being born, regardless of whether they are partnered with the primary caregivers. The Centre for Longitudinal Research's expansive definition of 'dads' as including "biological fathers, step-fathers, co-mums, foster and adoptive parents as well as other family members who have a father role" is a good one (Centre for Longitudinal Research, 2017). However, due to data limitations, the study is limited for the most part to males registered as a parent on birth certificates, and is thus limited by a heteronormative approach. This excludes many possible kinds of 'dads', while including biological fathers not co-habiting with their babies or partnered with the mothers. A further key limitation with the IDI is the lack of information identifying households in administrative data. Currently the only source available on a population level is Census 2018. Given the uncertainty in knowing who the actual caregivers were, we decided to not conduct household-based analysis.

For our subject population, we chose to use one year of birth cohort with Census Month (March 2018) as the centre and six months on either side of the Census date.

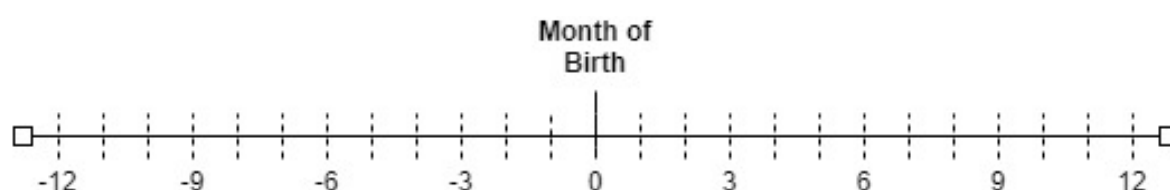


During this period, there were around 56,361 births, and around 53,346 fathers on birth certificates, which includes some double-counting of fathers who had more than one child in this period (less than 1%).

For estimates of household income, we only used birth parents as a proxy for household due to limitations of finding other caregivers in the IDI. We attempted to find other potential caregivers like Step-Father, Step-Mother, Caregiver – MSD, Caregiver – Visa Records, Caregivers/Grandparent in caregiver role from Census – however due to the small time-period of interest after birth of the child and the small numbers of other caregivers, we chose to not use these in our analysis.

We explored a period of 25 months (1 year on either side of birth) for most of the variables of interest.

Variables that were derived from the Census do not change throughout this period of interest, but variables from administrative data have monthly frequency.



# Variables

## Dependent variables:

Income-derived measures made up most of the dependant variables. Income variables were derived using Statistics New Zealand's Income tables, Ministry of Social Development Tier 2 and Tier 3 Payments and Inland Revenue Income Tax Records. We did not include income from student loans and recoverable benefits in this analysis.

For income derived variables, we explored:

- Individual Income from Wages – Taxed Income earned from Wages & Salaries
- Individual Income from Wages and Self-Employment – Total Income earned from Wages & Salaries and Self-Employed Income (from sole-trader, shareholder salary, director salary, etc.)
- Individual Total Income from all sources – Total Income earned from Wages & Salaries, Self-Employment and Benefits.

To get an estimate of income fluctuation and gaps, we looked at two key variables:

- Income below full-time Minimum Wage – this variable was used in the HaBiSA study.
  - This was derived using the respective minimum wage at the income month x 40 hours x 4 Weeks. With this definition, there are only 2 states you can be in – below or above the threshold.
- Income fluctuation below full-time minimum wage – This was a new variable developed to track movement around the threshold, while separating out those with stable income below or above the threshold, and highlight the groups fluctuating around the threshold. There were 4 states an individual could be in every month:
  - Consistently below the threshold – If an individual is under the threshold in current month and last month.
  - Dip below the threshold – If an individual is above the threshold in the previous month but dropped below in the current month.
  - Rise above the threshold – If an individual is below the threshold in the previous month but rose above in current month.
  - Consistently above the threshold – If an individual is above the threshold in current month and last month.
- Eligibility for Partner Parental Leave – We used the Fabling- Maré labour tables to get employment spells. The majority of individuals only had one employer each month, however for those with multiple employers we looked at the most consistently paying employer from past 12 months who is also currently paying the individual. With this approach, we could filter out secondary employers. The length of employment was determined based on how long the current employer has been paying in individual. Once the length of employment was derived, we classified eligibility as:
  - Two Weeks – If an individual was earning consistently from same employer for at least 12 months at the month of interest.

- One Week – If an individual was earning consistently from same employer for more than 6 months but less than 12 months at the month of interest.
- No Leave – If an individual was earning consistently from same employer for less than 6 months at the month of interest.
- No Eligibility – If an individual is not earning income at month of interest.
- Employer Change Flag – A binary variable indicating if the individual has changed employer in current month based on the definition for employer as above.

## Independent variables of interest:

We are interested in focusing on occupation and industry in the analysis, as this may provide some useful insights for labour market policy. The variable for occupation is used with caveats, in that it is provided by the 2018 Census, with substantial missing data even after Statistics NZ post-Census imputation. Occupation imputation for the 2018 Census has been found to have high inaccuracy at more detailed levels, particularly for Māori and Pasifika ethnic groups, and the broadest possible occupational groupings, which has performed better in analysis, is therefore used. Dads for whom there was no occupation imputed are included as their own category of ‘no occupation recorded’. The industry of the main employer of dads was used from Inland Revenue (IR) data, and is therefore of higher quality, although of course excludes fathers not in employment and some who were self-employed when used in analysis.

South Auckland was included as dummy variable in all models. It is generally assumed that South Auckland disadvantages are driven by ethnic inequities, particularly in educational qualifications, occupation status and employment. Whether there is a South Auckland labour market or economic developmental ‘penalty’ beyond the accumulation of structural ethnic inequality has generally not been tested in quantitative models.

Ethnic group is analysed as total ethnic group, meaning that dummy variables are included for each of the six StatsNZ derived ethnic categories, with some examination of interactions specifically for Māori, Pasifika and Pākehā ethnic groups. Given the smaller sample sizes for key dependent variables, specific ethnic groups within the Pasifika category are unfortunately not analysed in this study.

Other control variables include age, educational qualifications (three categories), sibling order for the child, and whether the father was on a benefit that month or self-employed (both of which mediate consistent payment from an ‘employer’).

## Analytical approach

Simple descriptive statistics were used to examine the personal characteristics, occupations, and industries associated with monthly income, low-wage fluctuation, and likely eligibility for parental leave. Stepwise longitudinal regression modelling, and cross-sectional logistic regressions, were used to test the extent to which various characteristics and conditions mediate, confound, or ‘explain’ the overall picture.

The models used were:

- Income model (Random effects model, month set as time varying) (See table at Appendix A)
- ‘Dippers’ vs ‘Risers’ models (Binary logistic regression model - cross-sectional) (See table at Appendix B)
- ‘Dippers’ vs ‘Risers’ random effects model, month set as time varying (See table at Appendix B)
- Parental leave eligibility cross-sectional model (Binary logistic regression model - cross-sectional) (See table at Appendix C)
- Parental leave eligibility random effects model, month set as time varying (See table at Appendix C)

The outcomes being measured are those of fathers; however the regression analysis is based on the child. This means some fathers are counted multiple times, once for each baby born in the sampled period. Our conclusions should be interpreted as being child-centred in that sense – e.g., babies born in our cohort had fathers with particular characteristics. All findings are for the full New Zealand population of dads, unless stated otherwise.

## 5. Findings

### 5.1 Context: What is the overall income trajectory for fathers one year either side of a baby’s birth?

In this section we look at time-series plots for the total sample, and for subgroups, of parental income and income-related data over a 25 month period, 12 months either side of a baby’s birth. Of particular interest are a) the period before pregnancy, b) pregnancy, c) the month of childbirth, d) the post-birth period up to the end of the 26-week paid parental leave entitlement for the primary caregiver.

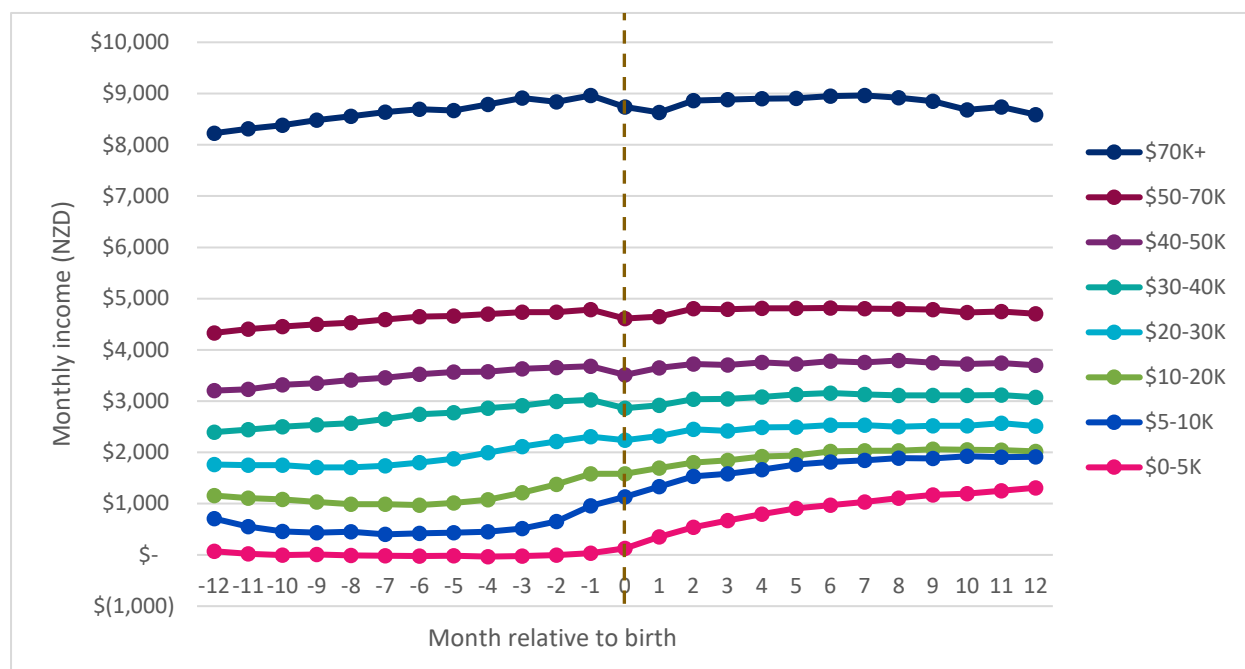
When interpreting income change, we should consider that dips in income could be seen as both ‘good’ and ‘bad’.

Temporary decreases in income could be seen as bad because having less income in the household in general could mean additional stressors for the family. At the same time, dips in income could be an indicator that a family can afford for parents to take time off to spend with a new baby, or that they are prioritising family time around the birth of a baby, all of which can also reduce family stress and improve child and family outcomes.

- Income ‘dips’ in general appear to be a sign of being able to afford time off work.
- High income dads can afford to take the most unpaid time off around a baby’s birth.
- The very lowest income dads are motivated to enter the workforce to start earning more money around the time of birth – they don’t have ‘dips’ and their income only increases from point of birth.
- Low-to-middle income dads try to earn more in the leadup to birth, to be able to afford to take unpaid time off around baby’s arrival, but return to work fairly quickly.
- Māori and Pasifika dads, despite low average income, on don’t follow the pattern of returning to work quickly on average.
- But there are some signs that Māori dads in the most precarious occupational groups are more likely to ‘work through’ the birth month.

From the summary descriptive data, we can see that there is a trend of a gradual increase in fathers' income leading up to birth month, with a dip around the month of birth of a baby, indicating short periods of unpaid parental leave or other time off working. This is followed by a trend post-birth back to pre-conception levels.

**Figure 1: Fathers' income trajectories around baby's birth, by annual total income segment**

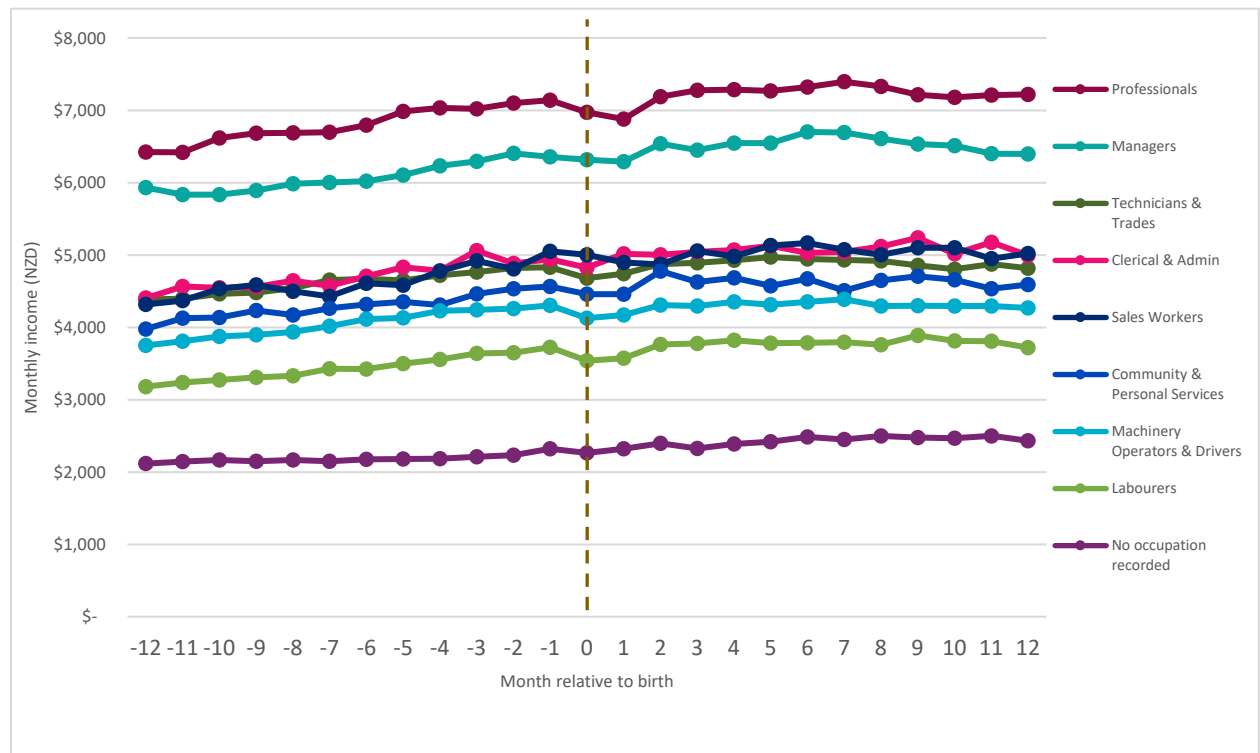


Source: Statistics NZ Derived Tax Records, MSD Benefit Dynamic Database, Working For Families.

When looking at how this affects dads at different parts of the income distribution, we can see that the highest paid dads have a two-month dip in income, and then another dip around the ten-month mark, suggesting that they can afford to take unpaid time off around the birth, and then more time off later to support partners returning to work. We must of course note that any unpaid time off taken by a higher-earning dad, would result in a deeper 'dip' in income than for the same amount of missed wages for a dad on a lower monthly income.

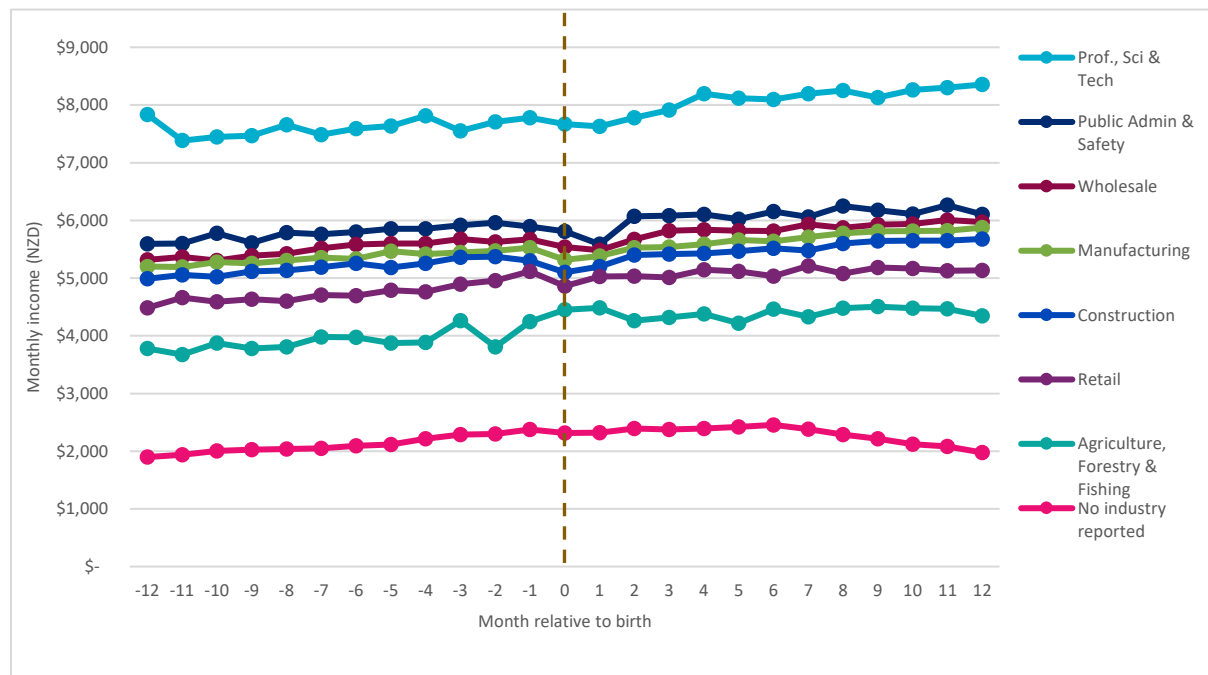
Even taking this into account however, low to middle-income dads seem more likely to take less unpaid time off around birth; their dips in income appear to affect only one month. But at the lowest income brackets (those who earned less than \$20,000 in the 12 months prior to birth, around 17% of dads in the sample), we see a pattern of incomes starting to take off in the leadup to birth and after birth; as non-working dads or part-time workers, are motivated to earn more income to support their babies. The lowest income bracket represents dads who were mainly not working in the 12 months prior to birth, nearly 7% of the dads in the sample.

**Figure 2: Fathers' income trajectories around baby's birth, by 2018 Census occupation**



Source: Census 2018

**Figure 3: Fathers' income trajectories around baby's birth, by seven biggest industry sector employers plus 'no industry'**



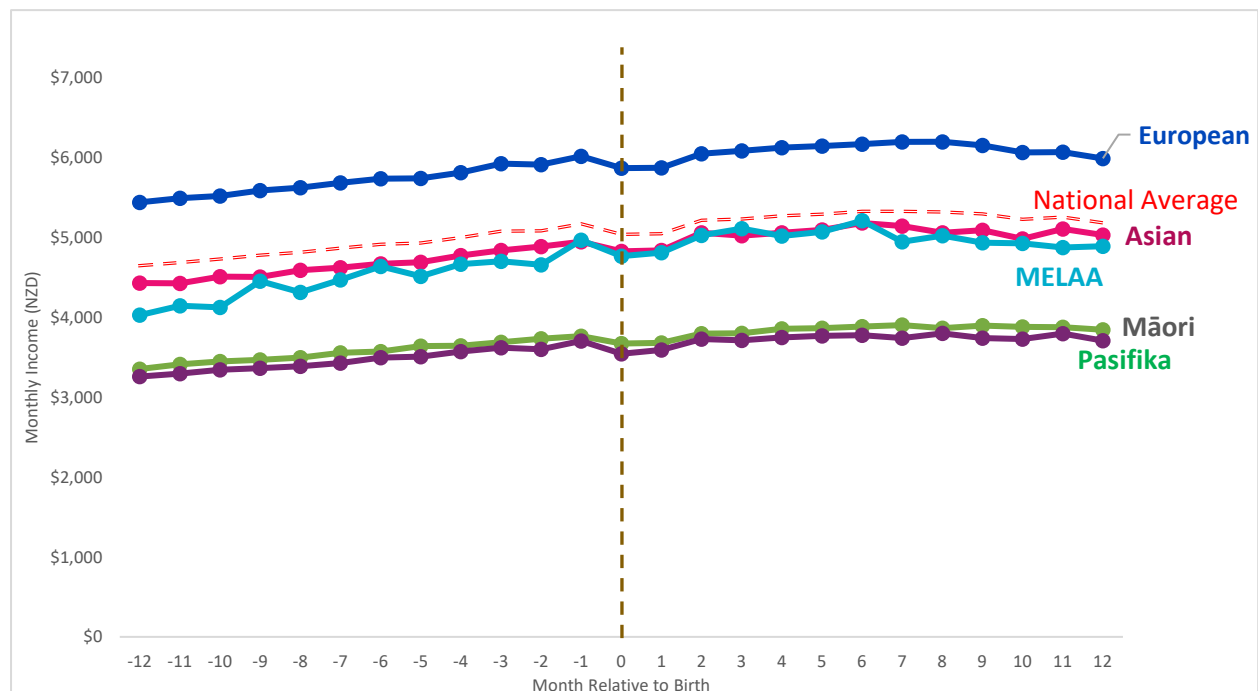
Source: Statistics NZ Derived Tax Records, Fabling-Maré Labour Tables

When examining trends by 2018 Census occupation, professionals (who are likely to afford more time off) and more casualised occupations seem to take longer periods of unpaid time off or reduced hours, with those more flexible occupations where workers can ‘get the hours in’ also having steeper increases in income in the leadup to birth as well as steeper drop-offs around birth – such as sales, labourers, machine operators and drivers, and tradies. Meanwhile, clerical/admin jobs seem to have less of a clear trajectory, suggesting that these types of jobs have less flexibility to increase hours or to put time and leave aside. Managers do not have any noticeable income dip at all in birth month, suggesting a reliance on paid leave, or a lack of leave-taking, in contrast with professionals.

When examining industry sectors of main employers, the two biggest low-income sectors (retail and agriculture, forestry & fisheries) have minimal income dips around birth month. Working in the lowest paid sectors may mean these dads feel they cannot take any time off earning income, even when their babies are born. Alternately, there may be particular obstacles to do with the nature of working in agriculture (e.g. rigid seasonal work requirements) or retail that prevents them from taking time off.

Even those on slightly higher average pay in construction and manufacturing still have distinct income dips in birth month. The higher paying professional, scientific & technical sector, and the public administration & safety sectors dip more in the month after birth. This may be due to being able to draw on paid leave entitlements in the birth month due to more stable or unionised occupations, and then taking unpaid leave the following month.

**Figure 4: Fathers’ income trajectories around baby’s birth, by five 2018 Census ethnic group categories and the national average**



Source: Statistics NZ Derived Personal Details Table.



The income inequalities between the different ethnic groups are painfully clear when looking at income trajectories. However, a key finding that is interesting to compare with general patterns for income and occupation above, is that trajectories around birth across the main ethnic categories are fairly similar despite big differences in average income. For example, although they are the lowest earning ethnic groups on average, Māori and Pasifika dads have a similar pattern overall to other ethnic groups, and to higher income dads in general, not rushing back to work on average. This supports qualitative findings of the HaBiSA report which emphasised the cultural importance of being present for baby and new mums among Māori and Pasifika dads, even when it might be tough on family finances to take time off work. Despite being the lowest-earning group in the country, it is notable that Pasifika dads on average have a similar pattern to high income dads, with a distinct two-month dip pattern, and indications of further dipping around the 9-12 month mark – potentially indicating reduced work hours and increasing family involvement to support partners easing back into the workforce.

### **Did the patterns hold when we controlled for demographics and socioeconomic status?**

Using longitudinal random effects regression modelling of total monthly income from all sources, we estimated fathers' income trajectories, controlling for a range of independent variables, across different periods for comparison.

The models broadly mirrored the descriptive findings, but highlighted significantly different patterns for labourer occupations compared with other jobs when controlling for all other variables. These differences kicked in during the pregnancy period, and around the birth month, with significant interaction terms between the month leading up to birth and occupation (See Appendix A).

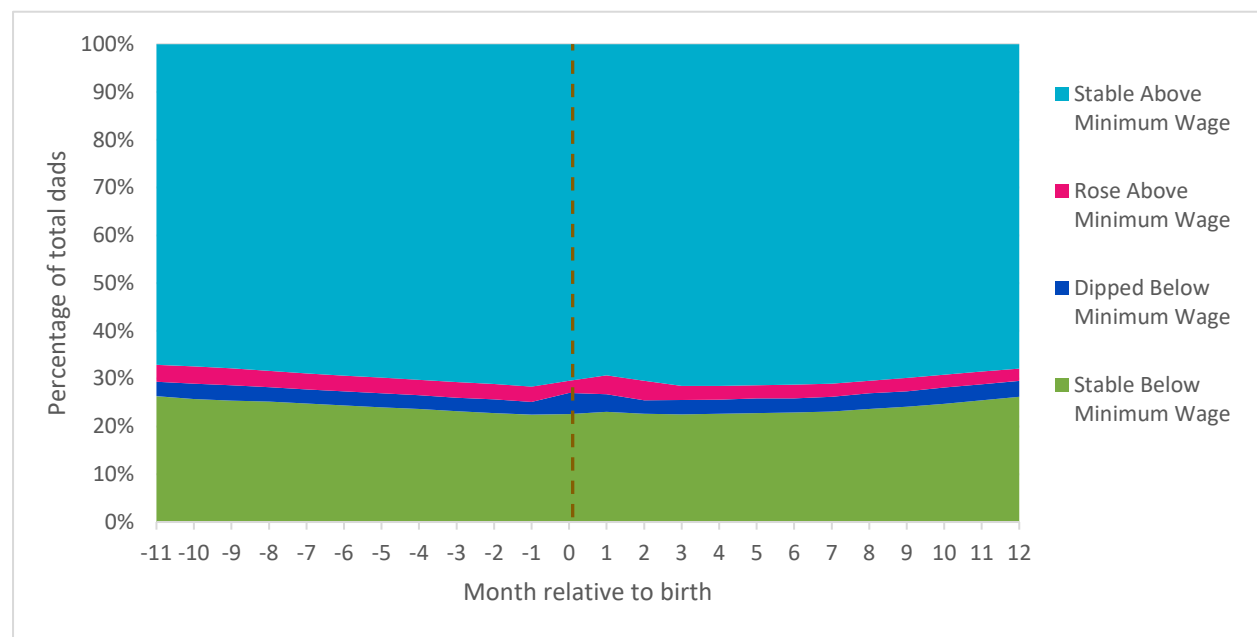
When controlling for background factors, the steeper estimated income climb during pregnancy for labouring occupations – being more casualised and also starting from one of the lowest income starting points – stood out when compared with other occupations. We could interpret this as being related to how much more casualised labouring occupations are, meaning that dads are able to more flexibly get in extra hours of work to 'feather the nest' in lead-up to birth compared with similar dads in other types of jobs, in preparation for a steeper drop-off in income around birth. These patterns were reflected in the overall trends for low-income dads in other casualised occupations.

## 5.2 Minimum-wage dads: What are the characteristics of fathers dipping below the full-time minimum wage threshold around the birth of a child?

The HaBiSA study included some analysis of dips in income below a minimum threshold of a monthly full-time minimum wage for 2018 (which was set to around \$2,640 per month for HaBiSA analysis). Although most New Zealand babies' fathers take short periods of parental leave (Centre for Longitudinal Research, 2017) and thus experience dips in income around the birth month, this threshold focused on babies whose fathers are at the lower end of the income distribution.

- Income dipping below the full-time minimum wage threshold signals a gap in work or reduction of hours for minimum wage workers. This spikes in birth month, then quickly subsides as dads return to work, given that low income working dads have shorter periods off work.
- 'Dippers' are similar to dads whose income hovers around the minimum wage threshold at any time – i.e. any minimum-wage worker in a casualised low-paid occupation or industry.
- Again, there are signs that Māori dads in low-paid labouring and machinist/driving jobs are more likely to 'work through', and are less likely to 'dip' than Māori dads in other occupations.

**Figure 5: Income in relation to the full time minimum wage threshold, by month**

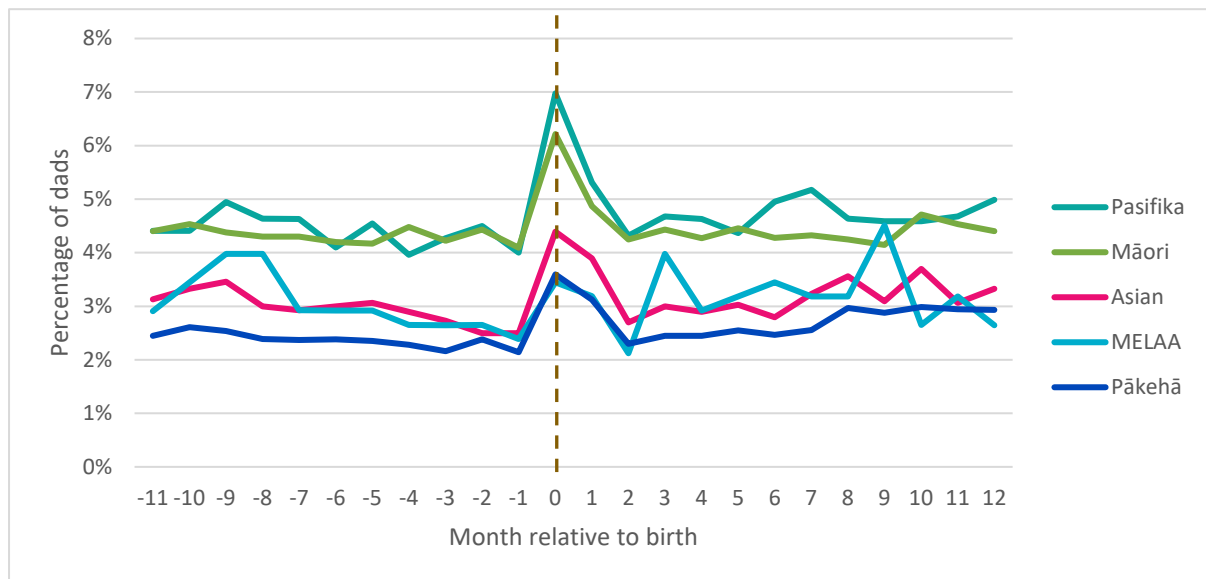


Source: Statistics NZ Derived Tax Records, Fabling-Maré Labour Tables.

In Figure 5 above, we can see that the population of dads who are typically below the full time minimum wage from month to month far outweigh the proportion of dads who are crossing the threshold either by 'dipping below' or 'rising above' it from month to month. These 'dippers' and 'risers' are substantially the same group of low income workers with occasionally fluctuating income.

In the context of this fluctuation, 25% of dads had at least one 'dip' below this threshold in the year leading up to their baby's birth. This jumped to 40% in the year following the birth, reflecting the more universal experience across the income range of taking time off for family reasons (This highlights the importance of comparing 'dipper' or 'riser' characteristics at multiple time points). We can also see that increases in 'dippers' at birth month (the bump in the dark blue band) is then followed by a correction into 'risers' the following month (the blip in the pink band).

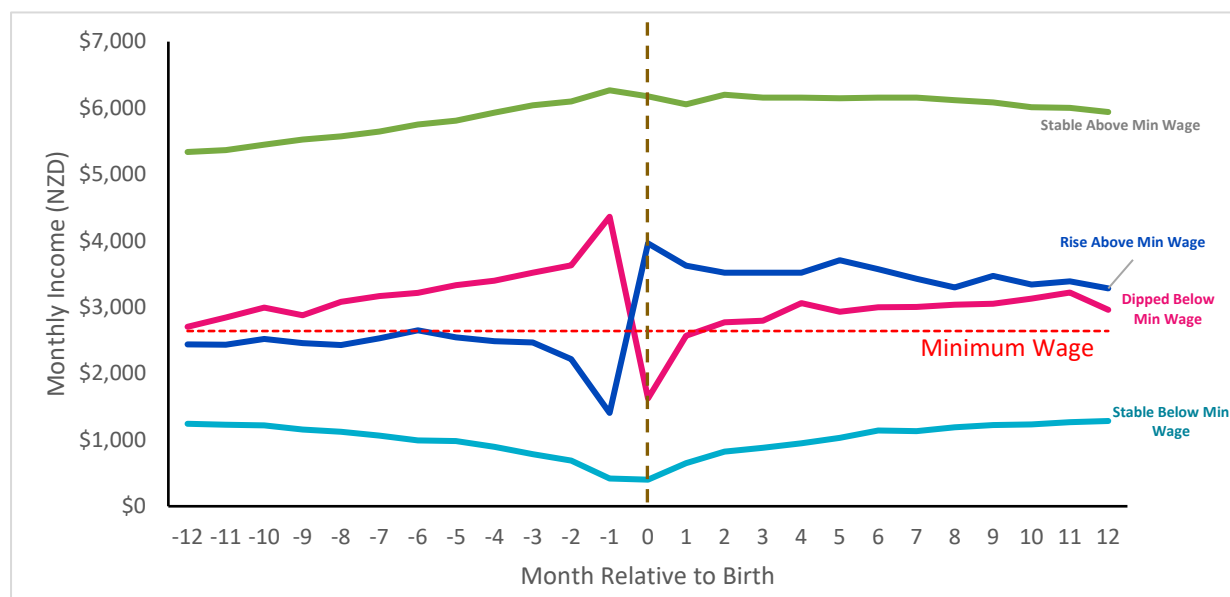
**Figure 6: Percentage of dads who dipped below the full time minimum wage threshold each month, by five 2018 Census ethnic group categories**



Source: Census 2018, Statistics NZ Derived Tax Records, Fabling-Maré Labour Tables.

In Figure 6 above, we see the extent to which different ethnic groups dip below the full time minimum wage threshold at any time. As we would expect, this reflects general ethnic income inequalities and low pay for Māori and Pasifika dads.

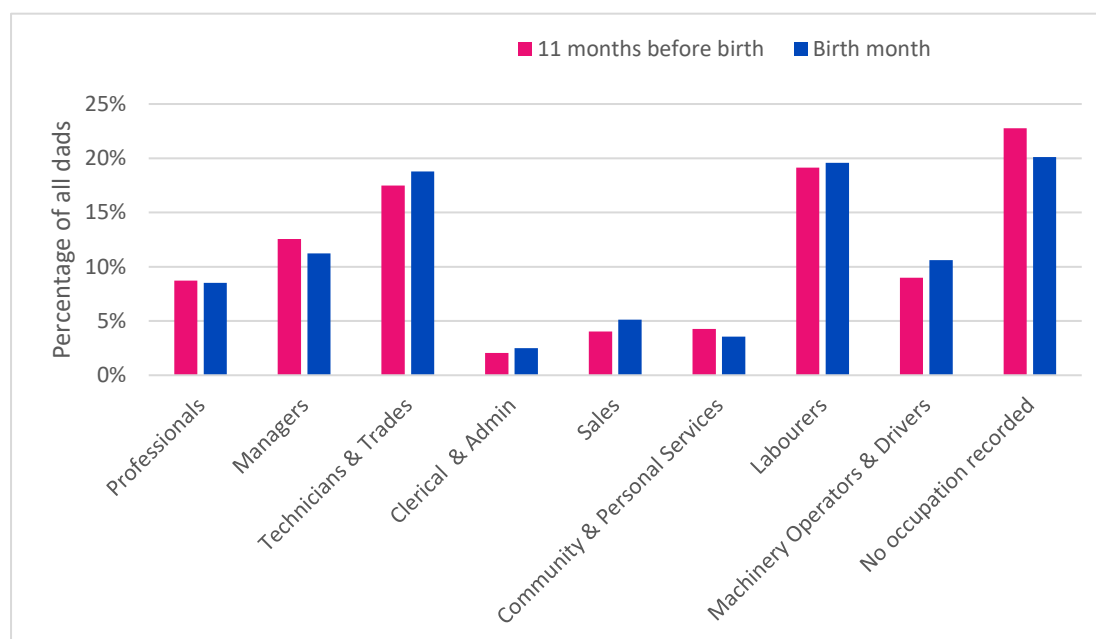
**Figure 7: Income trajectories of those who ‘dipped below’, ‘rose above’, were ‘stable below’ and ‘stable above’ the full time minimum wage threshold in birth month**



Source: Statistics NZ Derived Tax Records, MSD Benefit Dynamic Database, Working for Families.

Dads whose waged income dropped below full-time minimum wage in the month of birth, were, in the overall picture, substantially similar to fathers whose wages fluctuated above the minimum wage threshold. As we can see from Figure 7 above, the distinction between ‘dippers’ and ‘risers’ in birth month itself appears mainly to be the difference between dads in a similar income range who either ‘feathered the nest’ in leadup to birth then took time off in birth month, and the smaller number of dads who did not increase their income in leadup to birth, and took time off in late-pregnancy instead (including for births that were expected earlier) – but then got straight back into work at higher rates – potentially reflecting the contexts of dads who didn’t plan in the same way for the baby’s arrival. The income trajectories of both groups appear likely to converge again further down the line.

**Figure 8: Distribution of ‘dipper’ dads across occupations in birth month compared with 11 months prior to birth**



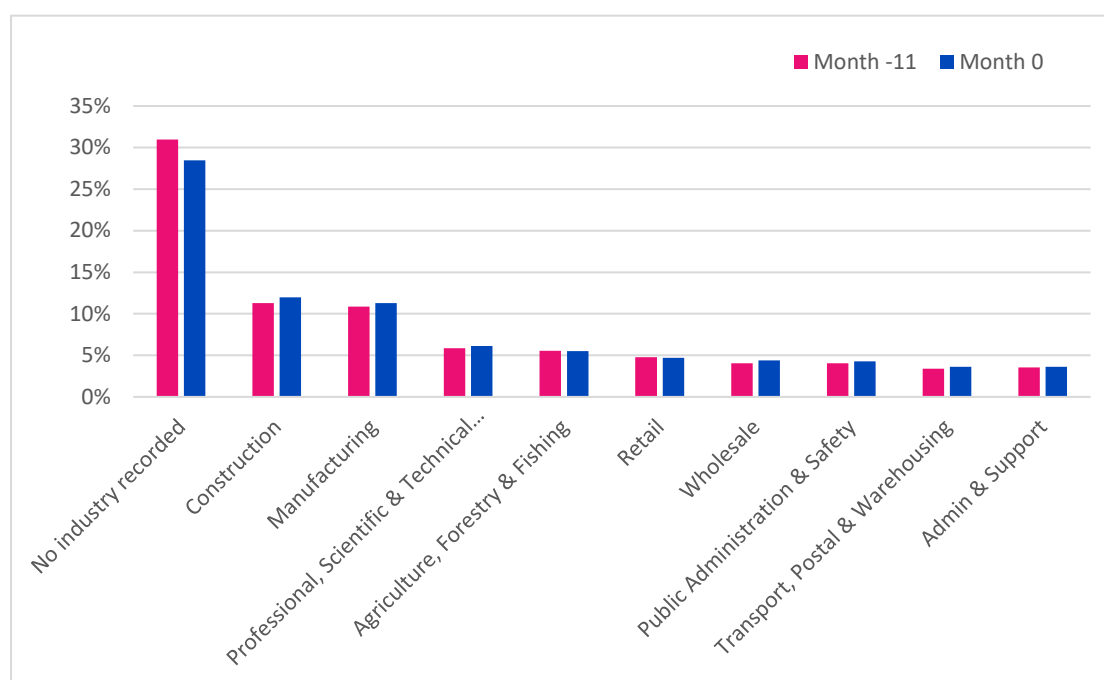
Source: Census 2018, Fabling-Maré Labour Tables.

‘Dippers’ and ‘risers’ had broadly the same demographic and occupational characteristics. (See descriptive statistics at Appendix E). Occupations that had slightly higher levels of ‘dippers’ than ‘risers’ in birth month were more likely to be associated with higher skilled jobs and probably reflected the pattern of being able to afford to take so much time off work, that monthly income fell below the threshold. Similarly, the lower-paid occupations had slightly more ‘risers’ than ‘dippers’ which may have been related to the need to ‘work through’ during this crucial time for the family as observed in the previous sections, or even reflect the greater vulnerability to income gaps at that inconveniently timed point a month before the birth. The exception was the machine operators and drivers category.

Ultimately, the ‘dip’ below a minimum full-time wage is a trait of low-paid workers in mainly manual or low-level occupations, or those who had no reported occupation in the Census, who earn around the minimum wage anyway. These types of workers can fluctuate over or under the threshold throughout the year due to gaps in waged work.

The three categories of dads clustered around the minimum wage threshold at any time are quite similar to each other demographically, compared to those consistently above the minimum wage. The population that is persistently below the full time minimum wage is much larger than ‘dippers’ or ‘risers’ combined, and includes dads who are mainly not working.

**Figure 9: Distribution of ‘dipper’ dads across biggest industries in birth month compared with 11 months prior to birth**



Source: Statistics NZ Derived Tax Records, Fabling-Maré Labour Tables.

Jobs and industries that were generally overrepresented as ‘dippers’, were similarly overrepresented during the birth month, with the highest absolute spikes in the most low-paid and insecure occupations, as expected (see Figure 8 & Figure 9). Industries with notable increases in their total share of ‘dippers’ in birth month were construction, manufacturing, warehousing, and wholesale, mirroring the occupational picture for labourers, machine operators/drivers and tradies. Notably, the group for whom no industry was recorded via IRD, nor occupation recorded, i.e. who were not receiving regular wages and likely including the lowest income and non-working dads, were one of the few groups with a distinct decrease in their share of ‘dippers’ in birth month. This seemed to reflect the fact that dads were making up more of the ‘dipper’ numbers than usual in birth month due to taking time off work, and also potentially the situation of the lowest-income dads in Figure 1 for whom a baby’s birth seems to spark some income growth.

For a more fine-grained analysis of what conditions and industries predict low-wage ‘dipping’ rather than ‘rising’ specifically in month of birth, given the similarity of these two groups at any other time, binary logistic regression models comparing just these two groups to each other were fitted. This model controlled for demographic, socioeconomic, and industry/occupation variables, and was analysed for birth month (where dipping becomes widespread and therefore significant drivers are obscured), and 11 months prior to birth (where both dipping and rising are part of general fluctuation) (see regression tables at Appendix B).

Reflecting the occupational effects highlighted in the previous section, labourers were significantly more likely to be rising across the full-time minimum wage threshold, compared with other low-paid occupations (such as machinists and drivers) in the pregnancy period

overall, and also as the birth month approached, when controlling for all other variables in the model.

Being older, Pākehā, and better educated were also independently associated with rising rather than dipping during the pregnancy period. Despite their higher likelihood on average of being ‘dippers’, Māori dads were significantly less likely than other ethnic groups to be ‘dippers’ in birth month when controlling for age, sibling order, and region. This was fully mediated or ‘explained’ in the model by a significant and substantial negative interaction between Māori dads and labouring and machinery operator/driver jobs, suggesting that Māori dads with these low-paid jobs are more likely to be ‘working through’ in the birth month compared with similar non-Māori dads in the same jobs. This ethnic interaction was not significant for Pasifika dads.

In the longitudinal ‘pregnancy period’ model, which interacted time with occupations and industries, machinery operator/ driver, and clerical/admin occupations were both significantly more likely to be dippers than labourers in the leadup to birth month. These make intuitive sense as other precarious low wage occupations and industries vulnerable to dipping below full-time minimum wage income, but which may be less ‘flexible’ in getting extra work in compared with labourers. As was noticed in the income analysis in the first section, white collar clerical workers in our data are paid more on average than labourers, but their income may be unable to have as much relative increase month to month before birth as there is less flexibility in their conditions of work to earn more income. In birth month, the interaction again flips as labourer income takes a relative dive.

Overall, ‘dippers’ around the birth are very similar in profile to ‘dippers’ and ‘risers’ at any time, as being near the minimum wage threshold itself is an indicator of general socioeconomic precarity, which is in itself not strongly predicted by the timing of a baby’s birth. Our general analysis revealed that income dips in many cases could be seen as a ‘good thing’, that is, an indicator of conditions that allow dads to take time off to focus on their families. As such, the more notable finding arising from the ‘dipper’ analysis is the fact that low-paid fathers in general are persistently at risk of fluctuating in and out of full-time work (as indicated by the constant crossing of the full-time minimum wage threshold) which has a crucial impact on parental leave policy and eligibility for taking that time off at all. As such, this study constructed an indicator for eligibility for parental leave – the length of time of being continually paid by a single employer, which we will term ‘employer attachment’.



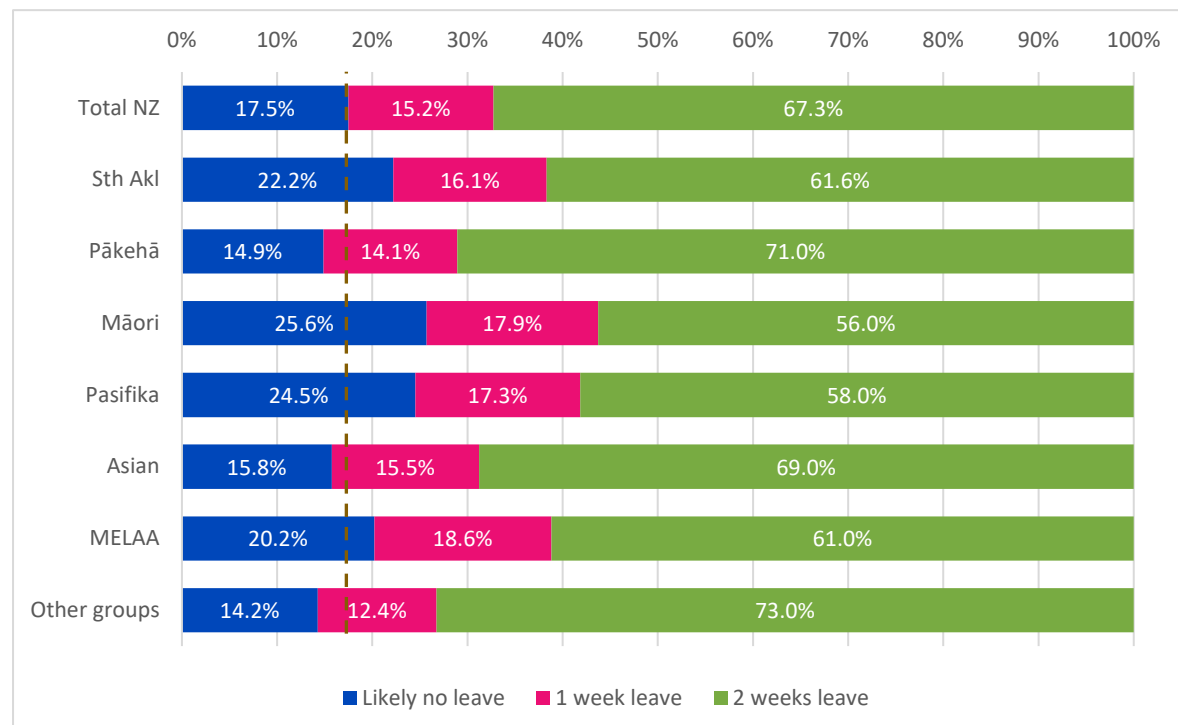
## 5.3 Systemic vulnerabilities and gaps: How many parents are missing out on partner parental leave due to casualised labour patterns?

We examined continuity of payment from a 'main employer' as a proxy for eligibility for parental leave.

Secondary caregivers are eligible for one week of unpaid parental leave if they have worked for at least 10 hours a week for the same employer for the previous 26 weeks. They are eligible for two weeks of unpaid parental leave if they have worked at least 10 hours a week for the same employer for 52 weeks. Most dads only had one employer each month, but for those with multiple employers, we took the employer who paid them the most consistently in the leadup to birth and categorised this as their main employer.

- Around one in six working dads may not be eligible for even one week of unpaid parental leave due to short periods of time with their employers. This affects low income dads the most.
- This affects around one in four Māori or Pasifika dads, and one in five 'Middle-Eastern, Latin American or African' dads.
- Being unable to qualify for partner parental leave is driven by conditions of low-paid, casualised and insecure work.
- Asian dads have higher employer attachment than other ethnic groups, regardless of the context.
- Although they have lower income and employer attachment on average, the better Pasifika and Māori dads are paid, the more attached they are to their employers compared with other groups.

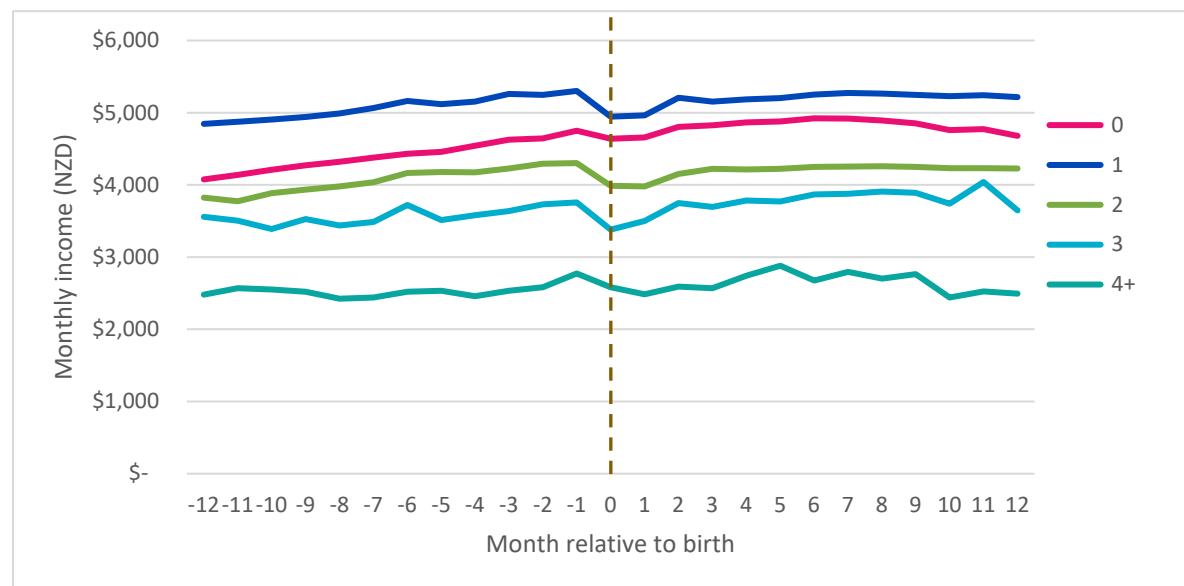
**Figure 10: Level of attachment to a main employer**



Source: Fabling-Maré Labour Tables.

Of dads receiving income from employers, around 17.5% in birth month have not been receiving income from their main employer for six months. Taking this as an indicator of continuous employment, this would not be enough to qualify for a single week's unpaid parental leave. The figures are worse, as would be expected, for groups of dads who are more likely to be in casualised and low-paid work. 26% of Māori dads, 24% of Pasifika dads, and 20% of dads in the MELAA category did not meet the threshold of 6-months of pay from a main employer in birth month.

**Figure 11: Income trajectories by number of employer changes**

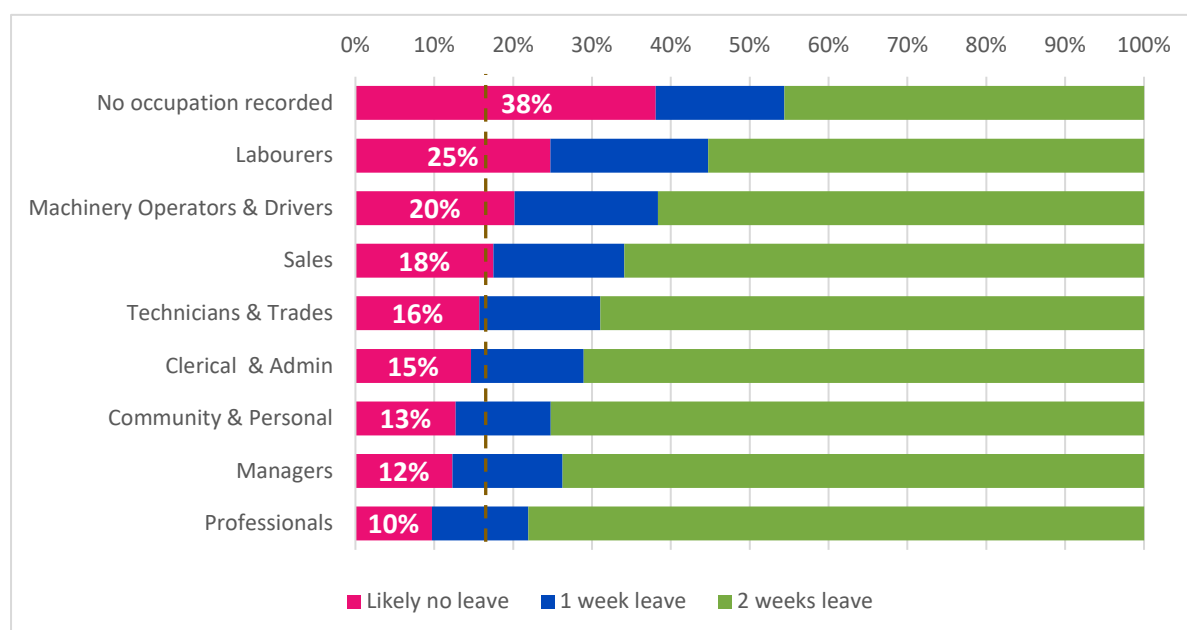


Source: Statistics NZ Derived Tax Records, Fabling-Maré Labour Tables.

Employer change is associated with both low income and high income, but to different degrees. In Figure 11 above, we see those who had one change of main employer in this period were the highest paid - indicating those professional-managerial workers who can take advantage of job transitions every few years to get pay progression.

The most stable with no employer change are the second most highly paid, and these comprise around 83% of the sample. Those with two or more employer change represent smaller and increasingly low-paid segments, indicating more precarious labour situations.

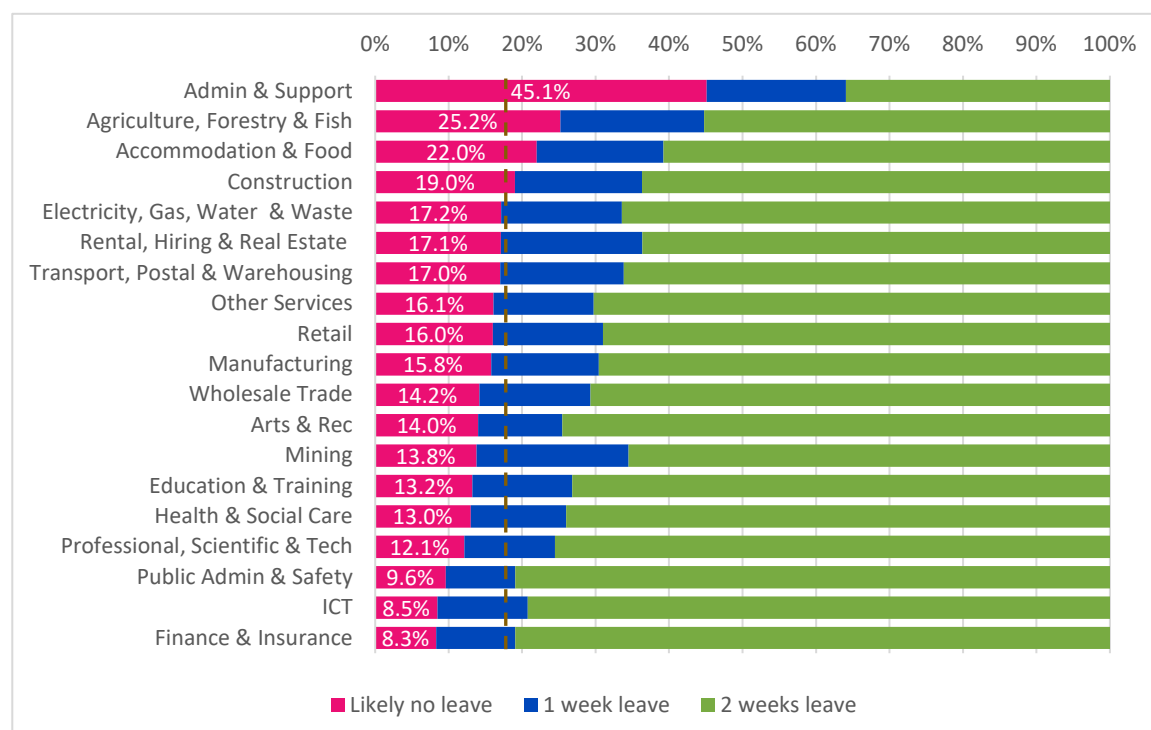
**Figure 12: Employer attachment by occupation**



Source: Census 2018, Fabling-Maré Labour Tables.

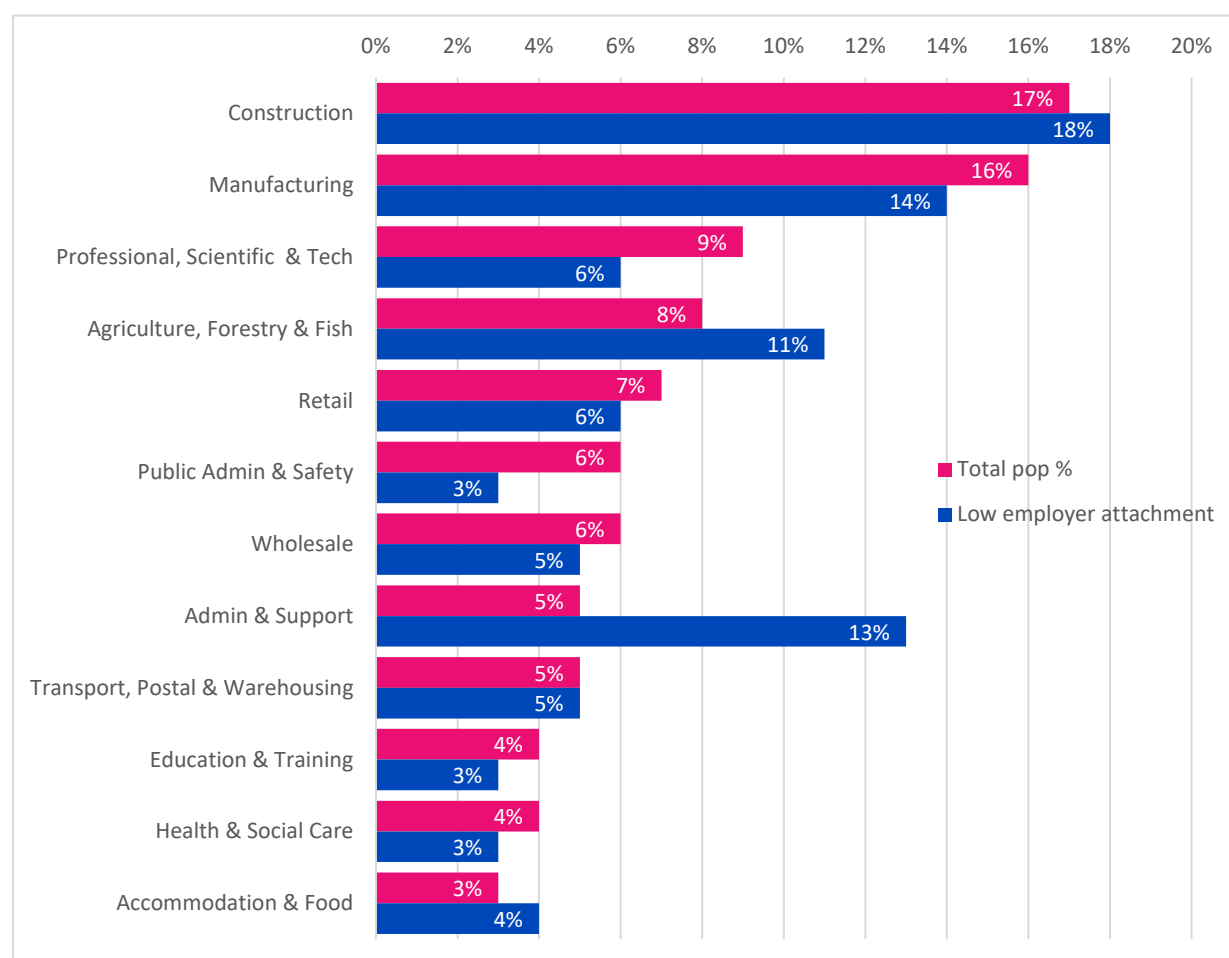
Those who are more likely to have lower employer attachment at birth month or at any time, are also more likely to be in the lower paid occupations known for casualised labour that have been highlighted in the rest of the report, i.e. labouring and machinist-driver occupations.

**Figure 13: Employer attachment by industry**



Source: Statistics NZ Derived Tax Records, Fabling-Maré Labour Tables.

**Figure 14: Distribution of waged dads across biggest industries, by employer attachment**



Source: Statistics NZ Derived Tax Records, Fabling-Maré Labour Tables.

In contrast to occupation, the industry sector that was the most overrepresented was not construction or manufacturing, but administrative support services. Dads employed by businesses in the admin support sector comprised a small percentage of working dads (5%) but a substantial percentage of those with low employer attachment (13%) (See Figure 14 above and Appendix D). This likely reflects the industry context of temping agencies (as opposed to dads working in clerical roles in other sectors), and highlights a particular category of working dads that are often missed out in a focus on male dominated industries.

## Regression analysis

As shown at Figure 10 above, South Aucklanders on the face of it are more likely to have shorter periods of employer attachment. This inequality is fully 'explained' in nested regression models by demographic concentration of socioeconomic disadvantage - that is, once controlling for age and ethnic group, the South Auckland disadvantage was no longer statistically significant (see Appendix C).

The strongest and most consistent predictor of less stable employment in the full models was younger age. Other significant predictors were lower levels of education, low pay, and the occupations and industries already discussed.

Also as shown in Figure 10, Māori fathers have the lowest employer attachment at birth month. This holds even in the nested model controlling for demographic factors such as age and birth order. In the full model including socioeconomic factors, this low attachment is entirely driven by conditions of low pay, and occupations and industries relying on casual or insecure labour (See Appendix C).

The models also reinforce insights from the Pacific People's Workforce Challenge on Pasifika people's exceptional loyalty to workplaces (The Southern Initiative & Ministry of Business Innovation and Employment, 2018). Pasifika dads have the second-lowest average employer attachment on the face of it, and like Māori dads, still have similarly low estimates in the regression model taking demographics into account. However, when taking the precarity of low paid occupations into account and holding all else equal, Pasifika dads were estimated to be more likely to have *longer* periods of employer attachment than non-Pasifika by the time of their baby's birth, although the coefficient is not statistically significant. In an alternative model that looked at attachment to *all* employers, rather than just the 'main' employer, findings of Pasifika dads having longer attachment were more pronounced and statistically significant. This is likely due to the well-established phenomenon of Pasifika workers being more likely than other ethnic groups to have more than one regular job at a time. However, as discussed earlier, being eligible for unpaid leave from one part-time job does not allow you to spend most of your time at home in the birth month.

**Figure 15: Chances of missing out on (unpaid) parental leave when baby is born, for low, middle and high income dads from different ethnic group categories**

*Predicted probabilities from ethnic group/income interaction model at Appendix C*

Working in South Auckland part time as a minimum wage construction labourer...



Working as a technician in a freezing works for around the 2019 living wage...



A South Auckland health professional earning \$150,000...



	Working in South Auckland part time as a minimum wage construction labourer...	Working as a technician in a freezing works for around the 2019 living wage...	A South Auckland health professional earning \$150,000...
<b>Pasifika dad</b>	61%	22%	2%
<b>Māori dad</b>	58%	23%	3%
<b>Pākehā dad</b>	53%	23%	4%
	<i>Marginal statistical significance for Pasifika vs Pākehā</i>	<i>Not statistically significant difference</i>	<i>Statistically significant difference for Pasifika vs Pākehā</i>

In the model controlling for socioeconomic factors including income, only Asian dads had significantly higher odds of longer employer attachment. No other ethnic group was statistically significantly associated with longer or shorter periods of being with an employer. However, when interacting income with ethnic group, a significant interaction affected both Māori and Pasifika dads in the same way, in contrast to Pākehā. The very lowest incomes are associated with shorter employer spells for Māori and Pasifika dads compared with other ethnic groups, while higher incomes are more stabilising for Māori and Pasifika employer attachment than for other ethnic groups.

It appears that not only Pasifika, but also Māori dads, become relatively more attached than other ethnic groups, to workplaces where they have the opportunity for higher-paid and stable employment. This may also mean that employers are getting away with paying less for Māori and Pasifika staff loyalty and retention than for workers of other ethnic groups (The Southern Initiative & Ministry of Business Innovation and Employment, 2018).

## 6. Conclusions

Income dips in general around birth month are more likely to be an indicator of a stronger or more stable socioeconomic resource base that allows dads to ‘afford’ time off. In fact, it is the lack of income dips that most clearly marks out groups who cannot ‘afford’ to take time off for their new baby. A simple analysis of income bands provided a picture of income trajectories that essentially holds throughout this report, which is that the richest dads have the biggest and longest ‘dips’ because they can afford it, low-income dads have shallower and shorter dips because they cannot afford it, and that the arrival of a baby spurs the lowest income dads into the workforce. It is important to highlight that the birth of a baby is not simply a vulnerable time for struggling families but a potentially transformative period.

Although this research was spurred by the phenomenon of fathers ‘dipping’ below a full time minimum wage threshold in the month of their baby’s birth, more comprehensive data analysis has suggested that ‘dipping’ is not uniquely revealing as an indicator in birth month. More notable is the fact that low-paid fathers in general are persistently at risk of fluctuating in and out of full-time work as is indicated by the constant crossing of the full-time minimum wage threshold, which needs to be taken into account in parental leave policy.

As such, this study constructed an indicator for likely eligibility for partner parental leave due to at least six months income from a main employer. We found that a substantial proportion of waged employees were likely not meeting the employer attachment threshold, and that precarious, casual or seasonal jobs and the big industries that rely on them, like construction, agriculture and admin temp agencies, are likely contributing to dads missing out on entitlements – and these are only entitlements to unpaid leave.

There are clear policy implications of these findings. Fathers on low incomes and in precarious occupations are being excluded from eligibility for partner parental leave. Precarious or insecure attachment to employers is essentially a symptom of the overall structure of the New Zealand economy and the labour market, meaning that the current policy settings based on continuity of employment with a single employer are not adequate, and the gap in entitlements

cannot be bridged with micro-level solutions. Laws, policies, and funding are needed to incentivise the universal uptake of partner parental leave due to the strong social and wellbeing outcomes it supports, as per primary-caregiver parental leave.

## 7. Recommendations

This analysis highlights clear opportunities to better support whānau around the birth of a baby through targeted policy and legislative changes that would help make New Zealand the best place in the world for children and young people (Department of the Prime Minister and Cabinet, 2019). New Zealand is one of only six OECD countries that offers no paid partner parental leave or support for secondary caregivers; which is partly why it is also the third-lowest OECD spender on any parental leave or support around the birth of a child (OECD Family Database, 2019). Providing financial support that enables people to take partner parental leave would have a powerful impact on improving wellbeing, particularly for low-income Māori and Pasifika whānau currently experiencing the greatest weight of inequity and disadvantage.

**Recommendation 1: Explore options for universal or targeted entitlement to partner/secondary caregiver parental leave, which could comprise:**

**a) A minimum two weeks statutory leave period entitlement that is not dependent on having had continuous employment with an employer.**

- This would allow secondary caregivers the same eligibility conditions for parental leave as primary caregivers. It would eliminate the inequality of eligibility for the many dads working in jobs and industries heavily dependent on casualised, temporary, or seasonal work.

**b) A minimum of two weeks direct state payment with no stand-down period, and if employed, linked to taking statutory parental leave.**

- Creating a statutory payment entitlement administered by the state rather than by employers will alleviate administrative and financial costs falling on employers, and administrative burden falling on employees, increasing access to parental leave or support for secondary caregivers.
- Payment could also potentially be provided universally via MSD to families directly or via employers, following examples of the Wage Subsidy implementation, although if dependent on employers, strong policy, legal settings, and delivery design are required.
- This may initially take the form of targeted income support to low-income fathers.

The overall aim of timing and eligibility conditions should be to support secondary caregivers to be present in the home at the same time as the primary caregiver in the birth month, rather than 'shared leave' policies which seek to shift primary caregiving from one parent to another without expanding the amount of entitlements available. Entitlements could be dependent upon application by or consent from the primary caregiver. If extending



entitlements to universal payments, equivalent universal support needs to be considered for primary caregivers.

**Recommendation 2: Explore opportunities for better supporting the transformative potential of the birth of a baby for low-income fathers through holistic support, including workforce/career development and training pathways. Key elements of support design and delivery that we recommend based on evaluative and practice-based evidence are:**

- To provide specific forms of support via MSD for low-income fathers not in work, that can support time with family while also offering genuinely flexible opportunities for career pathway development and decent work rather than ‘any work’.
- The integration of upskilling and job-brokerage services into family-based culturally competent integrated services such as Whanau Ora.
- Incentivising stronger engagement from employers in supporting upskilling and career development for low-income parents that can take advantage of this period of transition and opportunity.

### **Recommendation 3: Directions for further research**

This research opens up questions that would benefit from further qualitative research with employers and employees, particularly in occupations and industries highlighted in the report and with Māori and Pasifika employees, to see how to best support access to partner parental leave. South Auckland would be a likely choice as a place-based case study where these factors all intersect.

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# Appendices

## Appendix A

### Model 1: Income model (Random effects model, month set as time varying)

Formula: LOG TOTAL MONTHLY INCOME = a + MONTH + SOUTHAKL + AGE + NUMBER OF SIBLINGS + PĀKEHĀ + MĀORI + PASIFIKA + ASIAN + MELAA + OTHER ETHNIC GROUP + HIGHEST QUAL + BENEFIT FLAG + SOLE TRADER FLAG + OCCUPATION (dummies, baseline=labourers) + INDUSTRY (dummies, baseline=construction) + MONTH\*OCC

NESTED MULTIPLE LINEAR REGRESSION MODEL WITH RANDOM EFFECTS: INCOME GROWTH DURING PREGNANCY PERIOD

	(1) Month & South Auckland	(2) Demography and birth order	(3) SES	(4) Interactions of occupation* month
<b>MONTH RELATIVE TO BIRTH</b>	0.00878*** (29.11)	0.00879*** (29.14)	0.00826*** (27.61)	0.0116*** (8.91)
<b>SOUTH AUCKLAND</b>	-0.200*** (-17.79)	-0.00536 (-0.50)	0.00944 (0.97)	0.00939 (0.96)
<b>PARENT AGE AT BIRTH</b>		0.0304*** (57.27)	0.0199*** (42.26)	0.0199*** (42.27)
<b>FIRST BABY</b>		0 (.)	0 (.)	0 (.)
<b>SECOND BABY</b>		0.0440*** (6.83)	0.0515*** (9.07)	0.0515*** (9.07)
<b>THIRD BABY</b>		-0.000808 (-0.09)	0.0435*** (5.70)	0.0436*** (5.71)
<b>FOURTH OR MORE BABY</b>		-0.165*** (-16.04)	-0.0388*** (-4.26)	-0.0388*** (-4.26)
<b>PĀKEHĀ DAD</b>		0.227*** (23.45)	0.140*** (16.23)	0.140*** (16.23)
<b>MĀORI DAD</b>		-0.216*** (-27.03)	-0.122*** (-17.17)	-0.122*** (-17.17)
<b>PASIFIKA DAD</b>		-0.104*** (-8.79)	-0.0472*** (-4.46)	-0.0473*** (-4.47)
<b>ASIAN DAD</b>		0.0158 (1.32)	-0.0675*** (-6.18)	-0.0675*** (-6.17)
<b>MIDDLE EASTERN, LATIN AMERICAN OR AFRICAN DAD</b>		-0.0552* (-2.09)	-0.0594** (-2.70)	-0.0595** (-2.71)
<b>OTHER ETHNIC GROUP DAD</b>		0.0171 (0.96)	-0.0101 (-0.64)	-0.0102 (-0.64)
<b>NCEA 3 AND BELOW</b>			0 (.)	0 (.)
<b>NCEA 4-6</b>			0.121*** (20.62)	0.121*** (20.62)

DEGREE AND ABOVE	0.245***	0.245***
	(29.27)	(29.28)
DAD RECEIVING MAIN BENEFIT	-0.187***	-0.187***
	(-13.32)	(-13.31)
DAD RECEIVING SOLE TRADER INCOME	0.161***	0.161***
	(13.83)	(13.84)
CLERICAL & ADMIN	0.0718***	0.0495**
	(5.03)	(3.11)
COMMUNITY & PERSONAL SERVICES	0.00471	-0.0115
	(0.26)	(-0.56)
LABOURERS	0	0
	(.)	(.)
MACHINERY OPERATORS & DRIVERS	0.0848***	0.0628***
	(7.93)	(4.91)
MANAGERS	0.295***	0.278***
	(31.66)	(26.25)
PROFESSIONALS	0.282***	0.265***
	(25.51)	(21.86)
SALES	0.0319*	0.0126
	(2.13)	(0.74)
TECHNICIANS & TRADES	0.102***	0.0867***
	(11.26)	(8.28)
NO OCCUPATION RECORDED	-0.176***	-0.204***
	(-14.42)	(-13.91)
ACCOMMODATION & FOOD	-0.276***	-0.272***
	(-11.97)	(-10.69)
ADMIN & SUPPORT	-0.267***	-0.241***
	(-17.36)	(-12.73)
AGR. FORESTS & FISH	-0.143***	-0.139***
	(-9.77)	(-8.89)
ARTS & RECREATION	-0.125***	-0.111**
	(-3.67)	(-3.06)
CONSTRUCTION	0	0
	(.)	(.)
EDUCATION & TRAINING	-0.281***	-0.281***
	(-12.32)	(-11.86)
POWER & UTILITIES	0.114***	0.133***
	(3.85)	(4.35)
FINANCE & INSURANCE	0.182***	0.176***
	(9.01)	(8.02)
HEALTH & SOCIAL CARE	-0.00306	0.00742
	(-0.14)	(0.33)
ICT & MEDIA	0.00990	0.00561
	(0.38)	(0.20)
MANUFACTURING	0.0494***	0.0439***
	(4.74)	(3.89)
MINING	0.314***	0.307***

	(8.64)	(7.56)
OTHER SERVICES	-0.113***	-0.121***
	(-6.09)	(-6.39)
PROFESSIONAL, SCIENTIFIC & TECHNICAL	0.0581***	0.0604***
	(4.34)	(4.29)
PUBLIC ADMIN & SAFETY	0.0445*	0.0443*
	(2.55)	(2.42)
RENTAL & REAL ESTATE	0.0189	0.0259
	(0.80)	(0.98)
RETAIL	-0.0799***	-0.0752***
	(-5.57)	(-4.81)
TRANSPORT POSTAL & WAREHOUSING	0.0305†	0.0361†
	(1.75)	(1.95)
WHOLESALE	0.0182	0.0186
	(1.31)	(1.28)
CLERICAL & ADMIN * MONTH		-0.00501**
		(-2.78)
COMMUNITY & PERSONAL SERVICES * MONTH		-0.00364†
		(-1.74)
LABOURERS * MONTH		0
		(.)
MACHINERY OPERATORS & DRIVERS * MONTH		-0.00499**
		(-3.16)
MANAGERS * MONTH		-0.00384**
		(-2.99)
PROFESSIONALS * MONTH		-0.00381**
		(-2.77)
SALES WORKERS * MONTH		-0.00436*
		(-2.23)
TECHNICIANS & TRADES * MONTH		-0.00353**
		(-2.66)
NO OCCUPATION RECORDED * MONTH		-0.00625***
		(-3.31)
ACCOMMODATION & FOOD * MONTH		0.00104
		(0.45)
ADMIN & SUPPORT * MONTH		0.00587*
		(2.44)
AGR. FORESTS & FISH * MONTH		0.000800
		(0.54)
ARTS & RECREATION * MONTH		0.00297
		(1.08)
CONSTRUCTION * MONTH		0
		(.)
EDUCATION & TRAINING * MONTH		0.000179
		(0.10)
POWER & UTILITIES * MONTH		0.00463†
		(1.76)



FINANCE & INSURANCE * MONTH				-0.00152
				(-0.90)
HEALTH & SOCIAL CARE * MONTH				0.00228
				(1.30)
ICT & MEDIA * MONTH				-0.00112
				(-0.55)
MANUFACTURING * MONTH				-0.00121
				(-1.24)
MINING * MONTH				-0.00201
				(-0.52)
OTHER SERVICES * MONTH				-0.00197
				(-1.37)
PROFESSIONAL, SCIENCE & TECH * MONTH				0.000391
				(0.34)
PUBLIC ADMIN & SAFETY * MONTH				-0.0000933
				(-0.07)
RENTAL & REAL ESTATE * MONTH				0.00143
				(0.62)
RETAIL * MONTH				0.00103
				(0.80)
TRANSPORT POSTAL & WAREHOUSING * MONTH				0.00117
				(0.77)
WHOLESALE* MONTH				0.0000451
				(0.04)
CONSTANT	8.515***	7.439***	7.604***	7.619***
	(2467.35)	(383.41)	(399.75)	(387.96)
OBSERVATIONS	282678	282678	282678	282678

## Appendix B

### Model 2: 'Dippers' vs 'Risers' models (Binary logistic regression model - cross-sectional)

*With Māori\*Occupation interaction and Pasifika\*Occupation interaction*

**Formula :** LOG ODDS OF BEING DIPPER VS RISER IN BIRTH MONTH = a + SOUTHAKL + AGE + NUMBER OF SIBLINGS + PĀKEHĀ + MĀORI + PASIFIKA + ASIAN + MELAA + OTHER ETHNIC GROUP + HIGHEST QUAL + BENEFIT FLAG + SOLE TRADER FLAG + OCCUPATION (dummies, baseline=labourers) + INDUSTRY (dummies, baseline=construction) + [Māori or Pasifika] \*OCCUPATION + e

NESTED BINARY LOGISTIC REGRESSION MODELS, ESTIMATING LOG ODDS OF DIPPING BELOW RATHER THAN RISING ABOVE THE FULL TIME MINIMUM WAGE THRESHOLD

	(1) South Auckland	(2) Demography and birth order	(3) SES	(4) Māori*occupation interaction	(5) Pasifika*occupation interaction
<b>SOUTH AUCKLAND</b>	0.977 (-0.18)	1.035 (0.25)	1.041 (0.28)	1.031 (0.21)	1.026 (0.17)
<b>PARENT AGE AT BIRTH</b>		0.99 (-1.48)	0.989 (-1.52)	0.99 (-1.46)	0.989 (-1.59)
<b>FIRST BABY</b>		1 (.)	1 (.)	1 (.)	1 (.)
<b>SECOND BABY</b>		0.851 (-1.60)	0.861 (-1.45)	0.858 (-1.47)	0.867 (-1.37)
<b>THIRD BABY</b>		0.863 (-1.16)	0.894 (-0.86)	0.878 (-0.99)	0.906 (-0.75)
<b>FOURTH OR MORE BABY</b>		0.775 (-1.93)	0.813 (-1.51)	0.814 (-1.48)	0.819 (-1.44)
<b>PĀKEHĀ DAD</b>		1.101 (0.87)	1.08 (0.67)	1.089 (0.73)	1.091 (0.76)
<b>MĀORI DAD</b>		0.816 <sup>+</sup> (-1.89)	0.831 (-1.66)	1.153 (0.71)	0.842 (-1.54)
<b>PASIFIKA DAD</b>		0.895 (-0.83)	0.847 (-1.20)	0.815 (-1.46)	0.935 (-0.29)
<b>ASIAN DAD</b>		0.986 (-0.09)	0.999 (-0.00)	1.032 (0.19)	1.014 (0.08)
<b>MIDDLE EASTERN, LATIN AMERICAN OR AFRICAN DAD</b>		1.257 (0.61)	1.326 (0.74)	1.37 (0.84)	1.338 (0.77)
<b>OTHER ETHNIC GROUP DAD</b>		0.93 (-0.21)	0.914 (-0.25)	0.933 (-0.19)	0.925 (-0.22)
<b>NCEA 3 AND BELOW</b>			1 (.)	1 (.)	1 (.)
<b>NCEA 4-6</b>			1.081 (0.75)	1.101 (0.93)	1.074 (0.68)
<b>DEGREE AND ABOVE</b>			0.978 (-0.15)	0.974 (-0.18)	0.967 (-0.23)

<b>DAD RECEIVING MAIN BENEFIT</b>	0.484***	0.487***	0.482***
	(-4.69)	(-4.57)	(-4.71)
<b>DAD RECEIVING SOLE TRADER INCOME</b>	0.583*	0.570*	0.580*
	(-2.09)	(-2.14)	(-2.10)
<b>CLERICAL &amp; ADMIN</b>	0.781	0.769	0.896
	(-0.99)	(-0.84)	(-0.39)
<b>COMMUNITY &amp; PERSONAL SERVICES</b>	0.997	0.953	1.046
	(-0.01)	(-0.17)	(0.17)
<b>LABOURERS</b>	1	1	1
	(.)	(.)	(.)
<b>MACHINERY OPERATORS &amp; DRIVERS</b>	1.081	1.413	0.994
	(0.48)	(1.54)	(-0.03)
<b>MANAGERS</b>	0.969	0.755	0.924
	(-0.19)	(-1.41)	(-0.46)
<b>PROFESSIONALS</b>	1.349	1.054	1.444
	(1.48)	(0.22)	(1.69)†
<b>SALES</b>	1.162	0.819	1.103
	(0.68)	(-0.78)	(0.41)
<b>TECHNICIANS &amp; TRADES</b>	1.297†	0.973	1.361*
	(1.86)	(-0.15)	(1.98)
<b>NO OCCUPATION RECORDED</b>	0.891	0.661*	0.872
	(-0.89)	(-2.36)	(-0.93)
<b>ACCOMMODATION &amp; FOOD</b>	0.925	0.916	0.922
	(-0.37)	(-0.42)	(-0.39)
<b>ADMIN &amp; SUPPORT</b>	1.017	1.016	1.019
	(0.11)	(0.1)	(0.12)
<b>AGR. FORESTS &amp; FISH</b>	0.789	0.762†	0.782
	(-1.49)	(-1.68)	(-1.54)
<b>ARTS &amp; RECREATION</b>	0.872	0.836	0.848
	(-0.37)	(-0.48)	(-0.44)
<b>CONSTRUCTION</b>	1	1	1
	(.)	(.)	(.)
<b>EDUCATION &amp; TRAINING</b>	0.605†	0.63†	0.599
	(-1.84)	(-1.68)	(-1.88)
<b>POWER &amp; UTILITIES</b>	1.341	1.428	1.366
	(0.55)	(0.65)	(0.58)
<b>FINANCE &amp; INSURANCE</b>	1.713	1.837	1.817
	(0.79)	(0.86)	(0.85)
<b>HEALTH &amp; SOCIAL CARE</b>	0.777	0.756	0.77
	(-0.86)	(-0.94)	(-0.88)
<b>ICT &amp; MEDIA</b>	0.818	0.78	0.814
	(-0.45)	(-0.56)	(-0.46)
<b>MANUFACTURING</b>	1.337*	1.332*	1.323†
	(2.03)	(2.00)	(1.95)
<b>MINING</b>	1	1	1
	(.)	(.)	(.)
<b>OTHER SERVICES</b>	0.762	0.757	0.758
	(-1.11)	(-1.15)	(-1.13)

PROFESSIONAL, SCIENTIFIC & TECHNICAL	0.585*	0.607†	0.591*
	(-2.07)	(-1.91)	(-2.02)
PUBLIC ADMIN & SAFETY	0.977	1.028	0.991
	(-0.08)	(0.10)	(-0.03)
RENTAL & REAL ESTATE	0.666	0.697	0.645
	(-1.31)	(-1.16)	(-1.44)
RETAIL	0.787	0.79	0.783
	(-1.22)	(-1.18)	(-1.25)
TRANSPORT POSTAL & WAREHOUSING	0.802	0.793	0.817
	(-1.02)	(-1.06)	(-0.93)
WHOLESALE	2.000**	1.979**	2.033**
	(2.87)	(2.78)	(2.94)
MĀORI DAD * CLERICAL & ADMIN		0.432	
		(-1.56)	
MĀORI DAD * COMMUNITY & PERSONAL SERVICES		0.477	
		(-1.58)	
MĀORI DAD * LABOURERS		0.519*	
		(-2.54)	
MĀORI DAD * MACHINERY OPERATORS & DRIVERS		0.272***	
		(-4.03)	
MĀORI DAD * MANAGERS		1.003	
		(0.01)	
MĀORI DAD * PROFESSIONALS		1.037	
		(0.09)	
MĀORI DAD * SALES WORKERS		1.906	
		(1.22)	
MĀORI DAD * TECHNICIANS & TRADES		1.075	
		(0.25)	
MĀORI DAD * NO OCCUPATION RECORDED		1	
		(.)	
PASIFIKA DAD * CLERICAL & ADMIN			0.499
			(-1.15)
PASIFIKA DAD * COMMUNITY & PERSON SERVICES			0.721
			(-0.61)
PASIFIKA DAD * LABOURERS			0.911
			(-0.31)
PASIFIKA DAD * MACHINERY OPERATORS & DRIVERS			1.19
			(0.49)
PASIFIKA DAD * MANAGERS			1.57
			(0.86)
PASIFIKA DAD * PROFESSIONALS			0.535
			(-1.25)
PASIFIKA DAD * SALES WORKERS			1.252
			(0.39)
PASIFIKA DAD * TECHNICIANS & TRADES			0.691
			(-1.09)
PASIFIKA DAD * NO OCCUPATION RECORDED			1
			(.)
OBSERVATIONS	2619	2619	2619

**Model 3:** Random effects model, month set as time varying

**Formula:** LOG ODDS OF BEING A DIPPER/RISER DURING A) PRE-PREGNANCY PERIOD; B) PREGNANCY PERIOD; C) IN MONTH OF BIRTH = a + MONTH + SOUTHAKL + AGE + NUMBER OF SIBLINGS + PĀKEHĀ + MĀORI + PASIFIKA + ASIAN + MELAA + OTHER ETHNIC GROUP + HIGHEST QUAL + BENEFIT FLAG + SOLE TRADER FLAG + OCCUPATION (dummies, baseline=labourers) + INDUSTRY (dummies, baseline=construction) + MONTH\*OCCUPATION + MONTH+INDUSTRY + ui + eij

	(A)	(B)	(C)
	Pre-pregnancy	Pregnancy	Month before/Birth month
MONTH RELATIVE TO BIRTH	0.00593 (1.86)	0.0116*** (8.91)	-0.0723*** (-8.22)
SOUTH AUCKLAND	0.0168 (1.67)	0.00939 (0.96)	0.010856 (1.04)
PARENT AGE AT BIRTH	0.0215*** (42.78)	0.0199*** (42.27)	0.01795*** (36.51)
FIRST BABY	0 (.)	0 (.)	0 (.)
SECOND BABY	0.0637*** (10.70)	0.0515*** (9.07)	0.05014*** (8.48)
THIRD BABY	0.0602*** (7.52)	0.0436*** (5.71)	0.04528*** (5.71)
FOURTH OR MORE BABY	-0.0277** (-2.86)	-0.0388*** (-4.26)	-0.03588** (-3.56)
PĀKEHĀ DAD	0.145*** (15.32)	0.140*** (16.23)	0.13400*** (14.40)
MĀORI DAD	-0.117*** (-15.27)	-0.122*** (-17.17)	-.10483 (-13.90)
PASIFIKA DAD	-0.0641*** (-5.64)	-0.0473*** (-4.47)	-0.04282*** (-3.86)
ASIAN DAD	-0.0551*** (-4.78)	-0.0675*** (-6.17)	-0.06171*** (-5.46)
MIDDLE EASTERN, LATIN AMERICAN OR AFRICAN DAD	-0.0715** (-3.12)	-0.0595** (-2.71)	-0.040339† (-1.74)
OTHER ETHNIC GROUP DAD	0.0185 (1.15)	-0.0102 (-0.64)	-0.03011 (-1.58)
NCEA 3 AND BELOW	0 (.)	0 (.)	0 (.)
NCEA 4-6	0.125*** (20.17)	0.121*** (20.62)	0.10742*** (17.19)
DEGREE AND ABOVE	0.236*** (27.86)	0.245*** (29.28)	0.24253*** (28.45)
DAD RECEIVING MAIN BENEFIT	-0.227*** (-12.39)	-0.187*** (-13.31)	-0.38252*** (-18.24)
DAD RECEIVING SOLE TRADER INCOME	0.155*** (9.20)	0.161*** (13.84)	.09668*** (5.02)

CLERICAL & ADMIN	0.158** (3.09)	0.0495** (3.11)	0.06524*** (3.92)
COMMUNITY & PERSONAL SERVICES	0.0439 (0.76)	-0.0115 (-0.56)	0.00482 (0.22)
LABOURERS	0 (.)	0 (.)	0 (.)
MACHINERY OPERATORS & DRIVERS	0.114** (2.68)	0.0628*** (4.91)	0.06628*** (5.13)
MANAGERS	0.329*** (9.38)	0.278*** (26.25)	0.31339*** (28.09)
PROFESSIONALS	0.339*** (8.98)	0.265*** (21.86)	0.27110*** (21.34)
SALES	0.0883 (1.58)	0.0126 (0.74)	0.06425*** (3.73)
TECHNICIANS & TRADES	0.114** (3.09)	0.0867*** (8.28)	0.09915*** (8.94)
NO OCCUPATION RECORDED	-0.108* (-2.19)	-0.204*** (-13.91)	-0.09215*** (-6.01)
ACCOMMODATION & FOOD	-0.341*** (-5.81)	-0.272*** (-10.69)	-0.33367*** (-15.23)
ADMIN & SUPPORT	-0.343*** (-4.87)	-0.241*** (-12.73)	-0.27704*** (-13.30)
AGR. FORESTS & FISH	-0.173*** (-4.05)	-0.139*** (-8.89)	-0.11443 (-8.43)
ARTS & RECREATION	-0.0335 (-0.38)	-0.111** (-3.06)	-0.01362 (-0.35)
CONSTRUCTION	0 (.)	0 (.)	0 (.)
EDUCATION & TRAINING	-0.389*** (-5.91)	-0.281*** (-11.86)	-0.29058*** (-14.12)
POWER & UTILITIES	0.0456 (0.50)	0.133*** (4.35)	0.11813*** (3.87)
FINANCE & INSURANCE	0.203*** (3.63)	0.176*** (8.02)	0.25538*** (13.62)
HEALTH & SOCIAL CARE	-0.0523 (-1.04)	0.00742 (0.33)	0.01047 (0.53)
ICT & MEDIA	0.166* (2.46)	0.00561 (0.20)	0.09578*** (4.10)
MANUFACTURING	0.0547 (1.91)	0.0439*** (3.89)	0.04048*** (4.14)
MINING	0.482*** (4.03)	0.307*** (7.56)	0.43782*** (10.21)
OTHER SERVICES	-0.198*** (-4.97)	-0.121*** (-6.39)	-0.15368*** (-9.04)
PROFESSIONAL, SCIENTIFIC & TECHNICAL	0.0127 (0.37)	0.0604*** (4.29)	0.11007*** (8.32)
PUBLIC ADMIN & SAFETY	0.0215 (0.52)	0.0443* (2.42)	0.05542*** (3.64)
RENTAL & REAL ESTATE	0.0593	0.0259	0.03299

	(0.80)	(0.98)	(1.20)
RETAIL	-0.0950*	-0.0752***	-0.09938***
	(-2.55)	(-4.81)	(-7.91)
TRANSPORT POSTAL & WAREHOUSING	-0.000697	0.0361†	0.09891***
	(-0.02)	(1.95)	(6.82)
WHOLESALE	-0.0554	0.0186	0.02849*
	(-1.50)	(1.28)	(2.13)
CLERICAL & ADMIN * MONTH	0.0102*	-0.00501**	0.02976*
	(2.15)	(-2.78)	(2.32)
COMMUNITY & PERSONAL SERVICES * MONTH	0.00397	-0.00364†	0.01510
	(0.75)	(-1.74)	(0.97)
LABOURERS * MONTH	0	0	0
	(.)	(.)	(.)
MACHINERY OPERATORS & DRIVERS * MONTH	0.00319	-0.00499**	0.02453*
	(0.81)	(-3.16)	(4.98)
MANAGERS * MONTH	0.00467	-0.00384**	0.04468***
	(1.46)	(-2.99)	(4.98)
PROFESSIONALS * MONTH	0.00776*	-0.00381**	0.02620**
	(2.27)	(-2.77)	(2.71)
SALES WORKERS * MONTH	0.00456	-0.00436*	0.03413**
	(0.90)	(-2.23)	(2.60)
TECHNICIANS & TRADES * MONTH	0.00190	-0.00353**	0.14840
	(0.57)	(-2.66)	(1.60)
NO OCCUPATION RECORDED * MONTH	0.00219	-0.00625***	-0.0016
	(0.49)	(-3.31)	(-0.09)
ACCOMMODATION & FOOD * MONTH	0.000272	0.00104	0.00183
	(0.05)	(0.45)	(0.12)
ADMIN & SUPPORT * MONTH	-0.00523	0.00587*	-0.00777
	(-0.83)	(2.44)	(-0.49)
AGR. FORESTS & FISH * MONTH	-0.00190	0.000800	0.02712*
	(-0.49)	(0.54)	(2.47)
ARTS & RECREATION * MONTH	0.00606	0.00297	0.05169*
	(0.78)	(1.08)	(2.30)
CONSTRUCTION * MONTH	0	0	0
	(.)	(.)	(.)
EDUCATION & TRAINING * MONTH	-0.00560	0.000179	0.02276
	(-0.97)	(0.10)	(1.62)
POWER & UTILITIES * MONTH	-0.00440	0.00463†	0.01529
	(-0.54)	(1.76)	(0.71)
FINANCE & INSURANCE * MONTH	-0.00158	-0.00152	0.02605†
	(-0.31)	(-0.90)	(1.71)
HEALTH & SOCIAL CARE * MONTH	-0.00442	0.00228	0.0187
	(-0.98)	(1.30)	(0.85)
ICT & MEDIA * MONTH	0.00826	-0.00112	0.02584
	(1.33)	(-0.55)	(1.62)
MANUFACTURING * MONTH	-0.000613	-0.00121	0.00351
	(-0.24)	(-1.24)	(0.46)
MINING * MONTH	0.0127	-0.00201	-0.01676
	(1.20)	(-0.52)	(-0.54)

OTHER SERVICES * MONTH	-0.00555	-0.00197	.02161†
	(-1.61)	(-1.37)	(1.78)
PROFESSIONAL, SCIENCE & TECH * MONTH	-0.00679*	0.000391	0.01846**
	(-2.25)	(0.34)	(3.05)
PUBLIC ADMIN & SAFETY * MONTH	-0.00224	-0.0000933	0.01846†
	(-0.59)	(-0.07)	(1.69)
RENTAL & REAL ESTATE * MONTH	0.00557	0.00143	0.01486
	(0.85)	(0.62)	(0.76)
RETAIL * MONTH	0.00225	0.00103	0.02928**
	(0.67)	(0.80)	(3.14)
TRANSPORT POSTAL & WAREHOUSING * MONTH	-0.00348	0.00117	0.02934**
	(-0.87)	(0.77)	(2.71)
WHOLESALE* MONTH	-0.00578	0.0000451	0.00118
	(-1.77)	(0.04)	(0.12)
CONSTANT	7.544***	7.619***	7.632***
	(191.83)	(387.96)	(377.41)
SIGMA_U	.47379236	.4695508	.44571185
SIGMA_E	.30901095	.30708454	.29053632
RHO	.70156992	.7004217	.70180086
OBSERVATIONS	138924	282678	71,283



## Appendix C

### Model 4: Parental leave eligibility/employer attachment model (Binary logistic regression model - cross-sectional)

**Formula:** LOG ODDS OF HAVING LESS THAN 6 MONTHS ATTACHMENT TO EMPLOYER IN BIRTH MONTH =  $a + \text{SOUTHAKL} + \text{AGE} + \text{NUMBER OF SIBLINGS} + \text{PĀKEHĀ} + \text{MĀORI} + \text{PASIFIKA} + \text{ASIAN} + \text{MELAA} + \text{OTHER ETHNIC GROUP} + \text{HIGHEST QUAL} + \text{BENEFIT FLAG} + \text{SOLE TRADER FLAG} + \text{OCCUPATION (dummies, baseline=labourers)} + \text{INDUSTRY (dummies, baseline=construction)} + \text{LOG\_ANNUAL\_INCOME} + \text{LOG\_ANNUAL\_INCOME} \times \text{PĀKEHĀ} + \text{LOG\_ANNUAL\_INCOME} \times \text{MĀORI} + \text{LOG\_ANNUAL\_INCOME} \times \text{PASIFIKA} + e$

	(1)	(2)	(3)	(4)	(5)
	STH AKL	DEMOG	SES	INCOME	ETHNIC-INCOME INTERACTIONS
<b>SOUTH AUCKLAND</b>	0.294***	0.00595	-0.0336	-0.00823	-0.00569
	(6.35)	(0.12)	(-0.62)	(-0.14)	(-0.10)
<b>PARENT AGE AT BIRTH</b>		-0.0600***	-0.0397***	-0.00982***	-0.00908**
		(-21.10)	(-13.92)	(-3.51)	(-3.23)
<b>FIRST BABY</b>		0	0	0	0
		(.)	(.)	(.)	(.)
<b>SECOND BABY</b>		-0.177***	-0.194***	-0.0358	-0.0377
		(-5.15)	(-5.43)	(-0.95)	(-1.00)
<b>THIRD BABY</b>		0.0247	-0.0617	0.0719	0.0788
		(0.56)	(-1.34)	(1.48)	(1.61)
<b>FOURTH OR MORE BABY</b>		0.297***	0.0489	0.0677	0.0819
		(6.07)	(0.94)	(1.24)	(1.48)
<b>PĀKEHĀ DAD</b>		-0.384***	-0.182***	0.0161	-0.742
		(-8.92)	(-3.97)	(0.33)	(-0.97)
<b>MĀORI DAD</b>		0.341***	0.185***	-0.0193	3.082***
		(9.01)	(4.59)	(-0.44)	(3.66)
<b>PASIFIKA DAD</b>		0.0907	0.0578	-0.0743	4.977***
		(1.75)	(1.05)	(-1.28)	(4.40)
<b>ASIAN DAD</b>		-0.170**	-0.0381	-0.133*	-0.0916
		(-2.96)	(-0.62)	(-2.05)	(-1.35)
<b>MIDDLE EASTERN, LATIN AMERICAN OR AFRICAN DAD</b>		0.268*	0.227†	0.108	0.144

	(2.47)	(1.94)	(0.84)	(1.12)
OTHER ETHNIC GROUP DAD	-0.110	-0.0231	-0.0541	-0.0447
	(-1.06)	(-0.21)	(-0.47)	(-0.39)
NCEA 3 AND BELOW		0	0	0
		(.)	(.)	(.)
NCEA 4-6		-0.200***	-0.0181	-0.0223
		(-5.48)	(-0.47)	(-0.58)
DEGREE AND ABOVE		-0.160**	0.140**	0.124*
		(-3.25)	(2.68)	(2.38)
DAD RECEIVING SOLE TRADER INCOME		0.629***	0.598***	0.607***
		(7.04)	(6.21)	(6.34)
DAD RECEIVING MAIN BENEFIT		2.017***	1.112***	1.086***
DAD'S OCCUPATION		(20.85)	(10.88)	(10.46)
CLERICAL & ADMIN		-0.206*	-0.0857	-0.0786
		(-2.31)	(-0.92)	(-0.84)
COMMUNITY & PERSONAL SERVICES		-0.418***	-0.511***	-0.514***
		(-4.39)	(-5.07)	(-5.05)
LABOURERS		0	0	0
		(.)	(.)	(.)
MACHINERY OPERATORS & DRIVERS		-0.0419	0.142*	0.153*
		(-0.68)	(2.19)	(2.33)
MANAGERS		-0.448***	0.000264	-0.0115
		(-8.01)	(0.00)	(-0.19)
PROFESSIONALS		-0.559***	-0.0907	-0.106
		(-8.55)	(-1.32)	(-1.53)
SALES		-0.0783	-0.0189	-0.0249
		(-0.95)	(-0.21)	(-0.28)
TECHNICIANS & TRADES		-0.269***	-0.0673	-0.0642
		(-4.96)	(-1.20)	(-1.13)
NO OCCUPATION RECORDED		0.601***	0.435***	0.426***
DAD'S INDUSTRY		(11.09)	(7.57)	(7.30)
ACCOMMODATION & FOOD		0.330***	-0.190*	-0.180†
		(3.79)	(-2.01)	(-1.89)
ADMIN & SUPPORT		0.973***	0.631***	0.599***

	(15.21)	(8.97)	(8.38)
AGR. FORESTS & FISH	0.290***	0.206***	0.201**
	(4.94)	(3.35)	(3.26)
ARTS & RECREATION	0.0399	-0.147	-0.157
	(0.29)	(-0.93)	(-0.98)
CONSTRUCTION	0	0	0
	(.)	(.)	(.)
EDUCATION & TRAINING	0.154	-0.377***	-0.360***
	(1.61)	(-3.49)	(-3.35)
POWER & UTILITIES	0.0524	0.236	0.220
	(0.35)	(1.49)	(1.39)
FINANCE & INSURANCE	-0.513***	-0.129	-0.158
	(-4.18)	(-1.03)	(-1.26)
HEALTH & SOCIAL CARE	0.105	0.0653	0.0622
	(1.08)	(0.62)	(0.59)
ICT & MEDIA	-0.455**	-0.276†	-0.296†
	(-3.00)	(-1.71)	(-1.85)
MANUFACTURING	-0.305***	-0.220***	-0.222***
	(-5.83)	(-4.12)	(-4.14)
MINING	-0.188	0.452†	0.417†
	(-0.79)	(1.90)	(1.78)
OTHER SERVICES	0.0225	-0.251**	-0.249**
	(0.26)	(-2.70)	(-2.69)
PROFESSIONAL, SCIENTIFIC & TECHNICAL	-0.0206	0.141†	0.114
	(-0.28)	(1.79)	(1.45)
PUBLIC ADMIN & SAFETY	-0.467***	-0.327***	-0.334***
	(-5.10)	(-3.56)	(-3.62)
RENTAL & REAL ESTATE	0.107	0.112	0.114
	(0.87)	(0.86)	(0.87)
RETAIL	-0.151*	-0.336***	-0.330***
	(-2.15)	(-4.47)	(-4.39)
TRANSPORT POSTAL & WAREHOUSING	-0.173*	-0.0924	-0.0994
	(-2.27)	(-1.14)	(-1.21)
WHOLESALE	-0.281***	-0.274***	-0.284***

				(-3.76)	(-3.45)	(-3.56)
LOG TOTAL CUMULATIVE INCOME					-1.653***	-1.562***
					(-45.66)	(-23.28)
PĀKEHĀ * INCOME						0.0719
						(1.00)
MĀORI * INCOME						-0.289***
						(-3.66)
PASIFIKA * INCOME						-0.472***
						(-4.42)
CONSTANT	-1.538***	0.562***	0.0828		16.75***	15.72***
	(-106.07)	(5.85)	(0.79)		(43.47)	(21.99)
OBSERVATIONS	35673	35673	35673		35673	35673



**Model 5:** Parental leave eligibility/employer attachment random effects model (longitudinal), MONTH set as time varying

**Formula:** LOG ODDS OF HAVING LESS THAN SIX MONTHS WITH MAIN EMPLOYER AT A) PRE-PREGNANCY PERIOD; B) PREGNANCY PERIOD; C) BIRTH MONTH = a + MONTH + SOUTHAKL + AGE + NUMBER OF SIBLINGS + PĀKEHĀ + MĀORI + PASIFIKA + ASIAN + MELAA + OTHER ETHNIC GROUP + HIGHEST QUAL + BENEFIT FLAG + SOLE TRADER FLAG + OCCUPATION (dummies, baseline=labourers) + INDUSTRY (dummies, baseline=construction) + MONTH\*OCCUPATION + MONTH\*INDUSTRY + ui + ej

	(A)	(B)	(C)
	Pre-pregnancy	Pregnancy	Month before/Birth month
<b>MONTH RELATIVE TO BIRTH</b>	3.096***	1.404***	1.189***
	(10.73)	(14.22)	(12.95)
<b>SOUTH AUCKLAND</b>	0.741*	0.877	0.997
	(-2.53)	(-1.63)	(-0.03)
<b>PARENT AGE AT BIRTH</b>	0.945***	0.984***	0.984***
	(-9.66)	(-4.25)	(-4.40)
<b>FIRST BABY</b>	1	1	1
	(.)	(.)	(.)
<b>SECOND BABY</b>	0.618***	0.768***	1.143**
	(-7.17)	(-5.26)	(2.86)
<b>THIRD BABY</b>	0.761**	0.897	1.161*
	(-3.01)	(-1.65)	(2.41)
<b>FOURTH OR MORE BABY</b>	0.898	0.981	1.347***
	(-0.97)	(-0.25)	(4.20)
<b>PĀKEHĀ DAD</b>	0.487***	0.803**	0.934
	(-6.38)	(-3.18)	(-1.07)
<b>MĀORI DAD</b>	1.496***	1.071	0.904†
	(4.73)	(1.16)	(-1.80)
<b>PASIFIKA DAD</b>	0.628***	0.697***	0.735***
	(-3.62)	(-4.36)	(-3.99)
<b>ASIAN DAD</b>	0.420***	0.596***	0.694***
	(-6.33)	(-5.71)	(-4.40)
<b>MIDDLE EASTERN, LATIN AMERICAN OR AFRICAN DAD</b>	1.795*	1.646**	1.109
	(2.11)	(2.93)	(0.65)
<b>OTHER ETHNIC GROUP DAD</b>	0.613*	0.690*	1.067
	(-2.57)	(-2.49)	(0.49)
<b>NCEA 4-6</b>	0.674***	0.953	1.098†
	(-5.36)	(-0.93)	(1.94)
<b>DEGREE AND ABOVE</b>	1.648***	1.686***	1.537***
	(5.20)	(7.32)	(6.43)
<b>DAD RECEIVING SOLE TRADER INCOME</b>	6.265***	2.903***	2.692***
	(8.02)	(9.04)	(9.40)
<b>DAD RECEIVING MAIN BENEFIT</b>	268.0***	3.943***	4.423***
	(7.56)	(11.10)	(13.69)
<b>CLERICAL &amp; ADMIN</b>	1.733	0.858	0.723†

	(0.35)	(-0.70)	(-1.81)
<b>COMMUNITY &amp; PERSONAL SERVICES</b>	1.117	0.279***	0.248***
	(0.07)	(-5.34)	(-6.99)
<b>LABOURERS</b>	1	1	1
	(.)	(.)	(.)
<b>MACHINERY OPERATORS &amp; DRIVERS</b>	1.926	1.504**	1.245†
	(0.58)	(2.69)	(1.77)
<b>MANAGERS</b>	1.293	1.259	1.414**
	(0.27)	(1.72)	(3.20)
<b>PROFESSIONALS</b>	1.003	0.976	0.83
	(0.00)	(-0.16)	(-1.44)
<b>SALES</b>	0.646	1.019	0.843
	(-0.28)	(0.09)	(-1.01)
<b>TECHNICIANS &amp; TRADES</b>	0.836	0.863	0.791*
	(-0.18)	(-1.12)	(-2.22)
<b>ACCOMMODATION &amp; FOOD</b>	3.404	0.638†	0.470***
	(0.78)	(-1.82)	(-3.56)
<b>ADMIN &amp; SUPPORT</b>	176.4***	2.691***	1.234
	(3.74)	(5.33)	(1.24)
<b>AGR. FORESTS &amp; FISH</b>	3.789	1.608**	0.844
	(1.19)	(2.78)	(-1.14)
<b>ARTS &amp; RECREATION</b>	2.637	0.833	0.637
	(0.40)	(-0.45)	(-1.33)
<b>CONSTRUCTION</b>	1	1	1
	(.)	(.)	(.)
<b>EDUCATION &amp; TRAINING</b>	4.275	0.525*	0.622*
	(0.89)	(-2.36)	(-2.13)
<b>POWER &amp; UTILITIES</b>	140.1	1.404	2.493*
	(1.56)	(0.83)	(2.38)
<b>FINANCE &amp; INSURANCE</b>	0.0287	1.158	0.591†
	(-1.67)	(0.46)	(-1.78)
<b>HEALTH &amp; SOCIAL CARE</b>	0.343	0.901	0.592*
	(-0.63)	(-0.38)	(-2.19)
<b>ICT &amp; MEDIA</b>	0.185	0.402*	0.456*
	(-0.68)	(-2.01)	(-2.30)
<b>MANUFACTURING</b>	0.467	0.774†	0.710**
	(-0.77)	(-1.70)	(-2.68)
<b>MINING</b>	5392.2	2.214	2.958†
	(1.94)	(1.28)	(1.87)
<b>OTHER SERVICES</b>	0.130	0.856	0.519**
	(-1.15)	(-0.59)	(-3.06)
<b>PROFESSIONAL, SCIENTIFIC &amp; TECHNICAL</b>	0.350	1.188	1.557*
	(-0.81)	(0.84)	(2.46)
<b>PUBLIC ADMIN &amp; SAFETY</b>	0.361	0.885	0.913
	(-0.64)	(-0.49)	(-0.44)
<b>RENTAL &amp; REAL ESTATE</b>	1.121	0.914	0.863
	(0.06)	(-0.25)	(-0.50)
<b>RETAIL</b>	0.477	0.586**	0.397***
	(-0.58)	(-2.59)	(-5.53)

TRANSPORT POSTAL & WAREHOUSING	0.611	1.039	0.968
	(-0.35)	(0.17)	(-0.17)
WHOLESALE	1.216	0.751	0.654*
	(0.15)	(-1.36)	(-2.40)
CLERICAL & ADMIN * MONTH	1.145	1.056	0.933**
	(0.89)	(1.40)	(-2.97)
COMMUNITY & PERSONAL SERVICES * MONTH	1.164	0.999	1.016
	(0.92)	(-0.03)	(0.70)
LABOURERS * MONTH	1	1	1
	(.)	(.)	(.)
MACHINERY OPERATORS & DRIVERS * MONTH	1.074	1.053†	0.977
	(0.65)	(1.95)	(-1.49)
MANAGERS * MONTH	1.063	1.014	0.995
	(0.66)	(0.59)	(-0.41)
PROFESSIONALS * MONTH	1.059	1.024	1.018
	(0.53)	(0.90)	(1.20)
SALES WORKERS * MONTH	1.027	1.036	1.006
	(0.18)	(0.98)	(0.28)
TECHNICIANS & TRADES * MONTH	1.046	1.042†	0.999
	(0.47)	(1.78)	(-0.09)
ACCOMMODATION & FOOD * MONTH	1.195	1.148***	1.063**
	(1.16)	(3.56)	(2.64)
ADMIN & SUPPORT * MONTH	1.408*	1.141***	1.082***
	(2.47)	(3.88)	(4.04)
AGR. FORESTS & FISH * MONTH	1.142	1.097***	1.066***
	(1.22)	(3.40)	(3.97)
ARTS & RECREATION * MONTH	1.152	1.156*	1.066
	(0.60)	(2.20)	(1.67)
CONSTRUCTION * MONTH	1	1	1
	(.)	(.)	(.)
EDUCATION & TRAINING * MONTH	1.259	1.045	1.001
	(1.45)	(1.07)	(0.06)
POWER & UTILITIES * MONTH	1.752†	0.971	0.909*
	(1.76)	(-0.43)	(-2.29)
FINANCE & INSURANCE * MONTH	0.699†	1.037	1.116***
	(-1.78)	(0.73)	(3.54)
HEALTH & SOCIAL CARE * MONTH	0.897	1.102*	1.029
	(-0.67)	(2.30)	(1.16)
ICT & MEDIA * MONTH	0.859	0.974	1.083*
	(-0.63)	(-0.40)	(2.01)
MANUFACTURING * MONTH	1.020	1.082***	0.994
	(0.21)	(3.29)	(-0.40)
MINING * MONTH	2.099	0.99	0.925
	(1.59)	(-0.10)	(-1.22)
OTHER SERVICES * MONTH	0.917	1.107*	1.016
	(-0.51)	(2.39)	(0.66)
PROFESSIONAL, SCIENCE & TECH * MONTH	0.898	1.047	1.002
	(-0.87)	(1.45)	(0.10)
PUBLIC ADMIN & SAFETY * MONTH	1.053	1.082*	1.019

	(0.34)	(2.02)	(0.84)
<b>RENTAL &amp; REAL ESTATE * MONTH</b>	0.884	0.999	1.006
	(-0.62)	(-0.01)	(0.18)
<b>RETAIL * MONTH</b>	1.037	1.130***	1.016
	(0.30)	(3.82)	(0.81)
<b>TRANSPORT POSTAL &amp; WAREHOUSING * MONTH</b>	0.934	1.043	1.031
	(-0.51)	(1.18)	(1.42)
<b>WHOLESALE* MONTH</b>	1.086	1.019	1.012
	(0.63)	(0.56)	(0.60)
<b>LOG TOTAL CUMUJLATIVE INCOME</b>	0.0147***	0.0177***	0.0226***
	(-29.11)	(-60.11)	(-57.14)
/			
<b>LNSIG2U</b>	55.65***	13.13***	11.62***
	(73.93)	(143.10)	(138.48)
<b>SIGMA_U</b>	7.459936		
<b>RHO</b>	0.944183		
<b>OBSERVATIONS</b>	94071	256365	378987



## Appendix D: Cross-tabulations of leave eligibility categories by analytic variables

Domain		Total		Not earning Wages (Self-Employed or Unemployed)		Total Earning Wages		Earning wages but likely not eligible for parental leave (low employer attachment)			Likely eligible for 1 week leave			Likely eligible for 2 weeks leave		
	Population Counts (n)	53352		15174		38178		6687			5811			25680		
		Count	% Total Pop	Count non wage-earners	% of non-wage earners	Count wage-earners	% wage-earners	Count likely ineligible	% of total likely ineligible	% of wage-earners	Count likely 1 wk	% of total likely eligible 1 wk	% of wage-earners	Count likely 2 wks	% of total likely eligible 2 wks	% of wage-earners
Population	Percent of Population (%)	53352	100.0%	15174	100.0%	38178	100.0%	6687	100.0%	17.5%	5811	100.0%	15.2%	25680	100.0%	67.3%
South Auckland	South Auckland	4866	9.1%	1479	9.7%	3387	8.9%	753	11.3%	2.0%	546	9.4%	1.4%	2088	8.1%	5.5%
Age Groups	<20	1032	1.9%	501	3.3%	531	1.4%	297	4.4%	0.8%	138	2.4%	0.4%	96	0.4%	0.3%
	20-30	17517	32.8%	4662	30.7%	12855	33.7%	3039	11.3%	8.0%	2358	40.6%	6.2%	7458	29.0%	19.5%
	30-40	27855	52.2%	7446	49.1%	20409	53.5%	2748	4.4%	7.2%	2757	47.4%	7.2%	14904	58.0%	39.0%
	40-50	6237	11.7%	2208	14.6%	4029	10.6%	555	45.4%	1.5%	510	8.8%	1.3%	2964	11.5%	7.8%
	50+	711	1.3%	360	2.4%	351	0.9%	48	41.1%	0.1%	48	0.8%	0.1%	255	1.0%	0.7%
Ethnicity*	Pākehā	32649	61.2%	8862	58.4%	23787	62.3%	3534	8.3%	9.3%	3348	57.6%	8.8%	16905	65.8%	44.3%
	Māori	11595	21.7%	3954	26.1%	7641	20.0%	1956	0.7%	5.1%	1371	23.6%	3.6%	4314	16.8%	11.3%
	Pasifika	6675	12.5%	1932	12.7%	4743	12.4%	1161	52.8%	3.0%	819	14.1%	2.1%	2763	10.8%	7.2%
	Asian	9027	16.9%	2337	15.4%	6690	17.5%	1056	29.3%	2.8%	1038	17.9%	2.7%	4596	17.9%	12.0%
	MELAA	1143	2.1%	384	2.5%	759	2.0%	153	17.4%	0.4%	141	2.4%	0.4%	465	1.8%	1.2%
	Other	1122	2.1%	300	2.0%	822	2.2%	117	15.8%	0.3%	102	1.8%	0.3%	603	2.3%	1.6%

Highest Qualification	Secondary School	15129	28.4%	4371	28.8%	10758	28.2%	1605	2.3%	4.2%	1530	26.3%	4.0%	7623	29.7%	20.0%
	Certificates and Diploma	13065	24.5%	2610	17.2%	10455	27.4%	1152	1.7%	3.0%	1317	22.7%	3.4%	7986	31.1%	20.9%
	Degree and Above	25158	47.2%	8193	54.0%	16965	44.4%	3930	24.0%	10.3%	2958	50.9%	7.7%	10077	39.2%	26.4%
Occupation	Clerical and Administrative Workers	1707	3.2%	255	1.7%	1452	3.8%	213	17.2%	0.6%	207	3.6%	0.5%	1032	4.0%	2.7%
	Community and Personal Service Workers	2133	4.0%	363	2.4%	1770	4.6%	225	58.8%	0.6%	213	3.7%	0.6%	1332	5.2%	3.5%
	Labourers	5601	10.5%	1101	7.3%	4500	11.8%	1113	3.2%	2.9%	900	15.5%	2.4%	2487	9.7%	6.5%
	Machinery Operators and Drivers	3981	7.5%	666	4.4%	3315	8.7%	669	3.4%	1.8%	603	10.4%	1.6%	2043	8.0%	5.4%
	Managers	9759	18.3%	2727	18.0%	7032	18.4%	864	16.6%	2.3%	984	16.9%	2.6%	5184	20.2%	13.6%
	Technicians and Trades Workers	8835	16.6%	1989	13.1%	6846	17.9%	1077	10.0%	2.8%	1050	18.1%	2.8%	4719	18.4%	12.4%
	Professionals	9171	17.2%	1494	9.8%	7677	20.1%	744	12.9%	1.9%	939	16.2%	2.5%	5994	23.3%	15.7%
	Sales Workers	2079	3.9%	399	2.6%	1680	4.4%	294	16.1%	0.8%	279	4.8%	0.7%	1107	4.3%	2.9%
	Not Available	10086	18.9%	6180	40.7%	3906	10.2%	1488	11.1%	3.9%	636	10.9%	1.7%	1782	6.9%	4.7%
Industry	Accommodation and Food Services	1215	2.3%	0	0.0%	1215	3.2%	267	4.4%	0.7%	210	3.6%	0.6%	738	2.9%	1.9%
	Administrative and Support Services	1929	3.6%	0	0.0%	1929	5.1%	870	22.3%	2.3%	366	6.3%	1.0%	693	2.7%	1.8%
	Agriculture, Forestry and Fishing	2949	5.5%	0	0.0%	2949	7.7%	744	4.0%	1.9%	576	9.9%	1.5%	1629	6.3%	4.3%
	Arts and Recreation Services	471	0.9%	0	0.0%	471	1.2%	66	13.0%	0.2%	54	0.9%	0.1%	351	1.4%	0.9%
	Construction	6390	12.0%	0	0.0%	6390	16.7%	1215	11.1%	3.2%	1107	19.1%	2.9%	4068	15.8%	10.7%
	Education and Training	1431	2.7%	0	0.0%	1431	3.7%	189	1.0%	0.5%	195	3.4%	0.5%	1047	4.1%	2.7%
	Electricity, Gas, Water and Waste Services	402	0.8%	0	0.0%	402	1.1%	69	18.2%	0.2%	66	1.1%	0.2%	267	1.0%	0.7%
	Financial and Insurance Services	1086	2.0%	0	0.0%	1086	2.8%	90	2.8%	0.2%	117	2.0%	0.3%	879	3.4%	2.3%
	Health Care and Social Assistance	1362	2.6%	0	0.0%	1362	3.6%	177	1.0%	0.5%	177	3.0%	0.5%	1008	3.9%	2.6%



	Information Media and Telecommunications	636	1.2%	0	0.0%	636	1.7%	54	1.3%	0.1%	78	1.3%	0.2%	504	2.0%	1.3%
	Manufacturing	6021	11.3%	0	0.0%	6021	15.8%	951	2.6%	2.5%	882	15.2%	2.3%	4188	16.3%	11.0%
	Mining	174	0.3%	0	0.0%	174	0.5%	24	0.8%	0.1%	36	0.6%	0.1%	114	0.4%	0.3%
	Other Services	1191	2.2%	0	0.0%	1191	3.1%	192	14.2%	0.5%	162	2.8%	0.4%	837	3.3%	2.2%
	Professional, Scientific and Technical Services	3264	6.1%	0	0.0%	3264	8.5%	396	0.4%	1.0%	402	6.9%	1.1%	2466	9.6%	6.5%
	Public Administration and Safety	2283	4.3%	0	0.0%	2283	6.0%	219	2.9%	0.6%	216	3.7%	0.6%	1848	7.2%	4.8%
	Rental, Hiring and Real Estate Services	561	1.1%	0	0.0%	561	1.5%	96	5.9%	0.3%	108	1.9%	0.3%	357	1.4%	0.9%
	Retail Trade	2526	4.7%	0	0.0%	2526	6.6%	405	3.3%	1.1%	378	6.5%	1.0%	1743	6.8%	4.6%
	Transport, Postal and Warehousing	1941	3.6%	0	0.0%	1941	5.1%	330	1.4%	0.9%	327	5.6%	0.9%	1284	5.0%	3.4%
	Wholesale Trade	2346	4.4%	0	0.0%	2346	6.1%	333	6.1%	0.9%	354	6.1%	0.9%	1659	6.5%	4.3%
	Not Available	15174	28.4%	15174	100.0%	0	0.0%	0	4.9%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
Number of Full Siblings	No Siblings	28206	52.9%	7704	50.8%	20502	53.7%	4086	5.0%	10.7%	3558	61.2%	9.3%	12858	50.1%	33.7%
	1 Sibling	16617	31.1%	4623	30.5%	11994	31.4%	1713	0.0%	4.5%	1509	26.0%	4.0%	8772	34.2%	23.0%
	2 Siblings	5748	10.8%	1776	11.7%	3972	10.4%	606	61.1%	1.6%	498	8.6%	1.3%	2868	11.2%	7.5%
	3 or More Siblings	2781	5.2%	1071	7.1%	1710	4.5%	282	25.6%	0.7%	246	4.2%	0.6%	1182	4.6%	3.1%
Total Annual Income (All Sources)	0-5000	3675	6.9%	3411	22.5%	264	0.7%	252	9.1%	0.7%	6	0.1%	0.0%	6	0.0%	0.0%
	5001-10000	1521	2.9%	1125	7.4%	396	1.0%	351	4.2%	0.9%	36	0.6%	0.1%	9	0.0%	0.0%
	10001-20000	4122	7.7%	2736	18.0%	1386	3.6%	1050	3.8%	2.8%	234	4.0%	0.6%	102	0.4%	0.3%
	20001-30000	3264	6.1%	1425	9.4%	1839	4.8%	948	5.2%	2.5%	564	9.7%	1.5%	327	1.3%	0.9%
	30001-40000	3936	7.4%	1032	6.8%	2904	7.6%	870	15.7%	2.3%	918	15.8%	2.4%	1116	4.3%	2.9%
	40001-50000	5568	10.4%	966	6.4%	4602	12.1%	807	14.2%	2.1%	966	16.6%	2.5%	2829	11.0%	7.4%

	50001-70000	11979	22.5%	1551	10.2%	10428	27.3%	1167	13.0%	3.1%	1467	25.2%	3.8%	7794	30.4%	20.4%
	70001+	19287	36.2%	2928	19.3%	16359	42.8%	1242	12.1%	3.3%	1620	27.9%	4.2%	13497	52.6%	35.4%



## Appendix E: Cross-tabulations of minimum-wage categories by analytic variables

Domain	Variable	Month Relative to Birth									
		Birth month					11 months prior to birth				
		Stable below	Dippers	Risers	Stable above	Total	Stable below	Dippers	Risers	Stable above	Total
Population	Population Count (n)	12051	2355	1359	37587	53352	14046	1626	1878	35802	53352
	Percent of Population (%)	22.6%	4.4%	2.5%	70.5%	100%	26.3%	3.0%	3.5%	67.1%	100%
South Auckland	South Auckland	1506	258	150	2952	4866	1659	195	201	2814	4869
Age Groups	<20	660	78	54	237	1029	816	39	39	138	1032
	20-30	4734	1161	642	10977	17514	5628	774	855	10251	17508
	30-40	4944	900	516	21492	27852	5718	669	792	20673	27852
	40-50	1455	186	123	4461	6225	1608	120	171	4323	6222
	50+	252	27	15	411	705	267	15	15	408	705
Number of Full Siblings	No Siblings	6609	1452	792	19350	28203	8301	942	1131	17829	28203
	1 Sibling	3243	582	369	12423	16617	3423	432	492	12273	16620
	2 Siblings	1257	201	132	4161	5751	1353	171	156	4068	5748
	3 or More Siblings	945	123	66	1653	2787	969	84	102	1632	2787
Ethnicity	Pākehā	5670	1161	639	25176	32646	6681	813	921	24231	32646

	Māori	4191	720	432	6246	11589	4695	483	558	5850	11586
	Pasifika	2076	462	276	3864	6678	2415	297	327	3639	6678
	Asian	1965	399	234	6426	9024	2349	282	333	6057	9021
	MELAA	354	39	24	720	1137	432	33	42	633	1140
	Other	195	30	15	885	1125	213	39	39	834	1125
<b>Highest Qualification</b>	Secondary School	7869	1431	843	15015	25158	9072	1008	1062	14019	25161
	Certificates and Diploma	2628	591	318	11583	15120	2907	399	471	11343	15120
	Degree and Above	1554	333	192	10986	13065	2064	219	342	10440	13065
<b>Occupation</b>	Clerical and Admin	243	57	42	1368	1710	243	57	42	1368	1710
	Community & Personal Services	378	81	51	1626	2136	378	81	51	1626	2136
	Labourers	1266	456	270	3606	5598	1266	456	270	3606	5598
	Machinery Operators & Drivers	609	249	126	2994	3978	609	249	126	2994	3978
	Managers	1143	270	150	8193	9756	1143	270	150	8193	9756
	Not Available	6306	462	300	3012	10080	6306	462	300	3012	10080
	Professionals	669	201	108	8190	9168	669	201	108	8190	9168
	Sales Workers	351	120	72	1527	2070	351	120	72	1527	2070
	Technicians and Trades Workers	1077	453	234	7062	8826	1077	453	234	7062	8826
<b>Industry</b>	Accommodation and Food Services	198	96	51	876	1221	240	84	84	912	1320
	Administrative and Support	441	210	162	1119	1932	483	141	186	1077	1887

	Agriculture, Forestry and Fishing	309	180	135	2325	2949	369	144	186	2274	2973
	Arts and Recreation Services	51	24	15	387	477	60	24	24	384	492
	Construction	321	354	219	5490	6384	306	204	306	5205	6021
	Education and Training	123	45	39	1230	1437	138	36	69	1134	1377
	Electricity, Gas, Water & Waste	18	15	9	360	402	21		9	327	357
	Financial and Insurance Services	9	12		1059	1080	15	6	18	1008	1047
	Health Care and Social Assistance	69	42	36	1218	1365	90	30	60	1125	1305
	Information Media and Telecoms	12	15	9	609	645	21		15	606	642
	Manufacturing	249	348	189	5235	6021	273	189	270	5076	5808
	Mining				171	171				144	144
	Not Available	9639	543	186	4809	15177	11322	489	240	4458	16509
	Other Services	87	54	39	1023	1203	90	33	51	981	1155
	Professional, Scientific & Technical	54	54	45	3126	3279	75	45	66	2946	3132
	Public Administration and Safety	69	48	30	2145	2292	69	21	45	2034	2169
	Rental, Hiring & Real Estate	30	30	24	483	567	30	24	24	462	540
	Retail Trade	180	120	78	2145	2523	234	81	117	2121	2553
	Transport, Postal and Warehousing	117	84	63	1683	1947	126	42	66	1584	1818
	Wholesale Trade	96	96	39	2115	2346	99	39	60	1968	2166
	0 / Unavailable	9636	543	186	4806	15171	486	237	4455	11319	16497

Length of Employment	1-3 Months	1068	366	579	2166	4179	237	768	2193	1278	4476
	4-5 Months	288	261	78	1869	2496	177	132	1998	297	2604
	6-11 Months	462	429	171	4740	5802	258	267	4713	477	5715
	12+ Months	591	747	336	23997	25671	462	465	22434	663	24024