Australian Government | Jobs and Skills Australia

New Perspectives on Old Problems

Gendered Jobs, Work and Pay

Contents

Introduction

This technical paper serves as a companion document to Paper 1 and provides information on the approach, methodology and principal data sources used in the Study. It also highlights some of the inherent data challenges and limitations in our study and provides additional analysis and tables on selected topics.

Principal data sources

In this study we have used a mixed methods approach and drawn on both qualitative and quantitative data and analysis. The qualitative research included expert forums (with policy experts, scholars, industry and advocacy groups), public submissions, and a series of focus groups and in-depth interviews.

- For the quantitative research, the principal data sources this study used were:

- Census and the Australian Census Longitudinal Dataset (ACLD)

- Personal Level Integrated Data Asset (PLIDA), including data commonly accessed in JSA's Skill Tracker dataset, particularly data from:

  - ATO Personal Income Tax Returns (PIT)

  - ATO Payment Summaries (PS).

Some of the key data limitations and challenges we have faced are around the distinct concepts of sex and gender, and appropriate data variables for race and/or culturally and linguistically diverse (CALD) cohorts. We have aimed to mitigate some of these limitations in the quantitative research through supplementing it with qualitative research, including a LGBTQIA+ focus group and a necessarily simple data proxy for CALD which is explained in detail in the next section.

For the qualitative research, this study commissioned qualitative research that conducted nine focus groups and 15 in-depth interviews to understand the 'on the ground' lived work, education and training experiences of Australians aged 18-55+ years across occupations of varying gender segregation intensity.

The research took place between 29 April and 29 May 2025 across three locations (Melbourne, Sydney and Bendigo) and involved 76 participants from diverse backgrounds—including different genders, CALD and culturally and racially marginalised (CARM) communities, migrants, age groups, and LGBTQIA+ identities. There were a mix of face-to-face and online focus groups and interviews.

Data limitations and challenges

Sex and gender data

Our consultation paper introduced the limitation in our study around sex and gender. It stated that the terms sex and gender are interrelated and often used interchangeably within the general community. However, they are two distinct concepts: Sex is understood in relation to sex characteristics. Sex recorded at birth refers to what was initially determined by sex characteristics observed at birth or infancy. Gender is about social and cultural identity, expression and experience. This Study seeks to appropriately use these terms, and according to whether data were collected in respect of sex or gender.

LGBTIQ+ data

LGBTIQ+ refers to those people who identify as lesbian, gay, bisexual, trans and gender diverse, intersex and queer, with ABS estimates in December 2024 showing that about 4.5% of all Australians aged 16 years and older describe their sexual orientation as LGBTIQ+ (ABS 2024). LGBTIQ+ persons may also identify with their sex recorded at birth—that sexual orientation doesn't equate to sex or gender identity.

Research from the Australian Workplace Equality Index (AWEI 2022) has shown that this intersectional cohort, in particular LGBTIQ+ women, face increased barriers to progression and promotion at work, higher levels of discrimination and sexual harassment, and are overrepresented in part-time work, contributing to the gender pay gap.

However, intersectional analysis of sexual orientation is unable to be conducted in the Study as this information is not currently available in the Census and detailed datasets that are integrated with it in PLIDA. Intersectional analysis of sexual orientation will be able to be conducted in the future as the 2026 Census will include questions on gender and sexual orientation for people aged 16 years and over (ABS 2024). Analysis of the ABS General Social Survey, once multiple waves are available will also be useful.

A necessarily simple data proxy for Culturally and Linguistically Diverse (CALD) people

Our consultation paper introduced the inherent challenges and limitations in constructing a CALD measure, from existing ABS CALD variables and debates around the term itself. However, to support intersectional analysis, this Study needed to identify CALD people across a range of data and develop an imperfect but reasonable proxy. We also needed to design this proxy to comply with the governance of Person Level Integrated Data Asset (PLIDA) by the ABS. PLIDA is a secure linked dataset that combines data on health, education, government payments, income and taxation, employment, and population demographics (including the Census) over time.

As noted previously, the ABS Standards for Statistics on Cultural and Language Diversity includes a Minimum Core Set of Cultural and Language Indicators that consists of four concepts:

- Country of Birth of Person

- Main Language Other Than English Spoken at Home

- Proficiency in Spoken English

- Indigenous Status

For this Study, we combine and adapt two of these variables to develop a reasonably rigorous proxy for the classification of CALD:

- Country of Birth of Person—BPLP: All Migrants (Main English Speaking Countries/Other Than Main English Speaking Countries)

- Language Used at Home—LANP: where the language used at home is not English

The ABS Census variables Country of Birth of Person (BPLP) is based on country names/codes in the Standard Australian Classification of Countries 2016 (SACC). Subsequent countries are further split into persons who are born in 'main English speaking countries' (MESC) and those who are not (OTMESC), see Table 1 below.

Table 1: List of Main English Speaking Countries (MESC)

SACC	Country name
1101	Australia
1201	New Zealand
1102	Norfolk Island
1199	Australian External Territories, nec
8102	Canada
8104	United States of America
9225	South Africa
2102	England
2103	Isle of Man
2104	Northern Ireland
2105	Scotland
2106	Wales
2107	Guernsey
2108	Jersey
2201	Ireland

OTMESC includes all other countries not listed above sourced from the Standard Australian Classification of Countries 2016.

Within our proxy, those from a non-MESC country, and those from a MESC country but speak a language other than English at home are considered CALD.

The Study fully acknowledges the challenges with this broader CALD proxy and the MESC/OTMESC variable specifically. MESC is a country and language-based classification, and so its ability to capture culture, ethnicity or race is limited.

For instance, someone born in a Main English Speaking Country and who uses English at home, may share more in common with people who would self-identify as CALD people, including their experiences across the jobs and skills systems, than someone who may have been born in another country (Other than Main English Speaking countries) who speaks English or another language at home.

Similarly, in the same way that a region of a person's birth has limitations, language also has limitations. For example, the CALD proxy likely excludes many children of migrants (or their children and subsequent generations) who speak English as a main language but face similar or greater challenges (including from racism) in the jobs and skills system than some people who have been included in the proxy.

Notwithstanding these limitations, the proxy provides useful insights into the broad occupation segregation differences and pay gaps between the CALD and total workforce in Australia.

Table 2: CALD proxy Census variables and short descriptions

Country of Birth of Person (BPLP - 4-digit level)	Language used at home (LANP - 2-digit level)	CALD determination
MESC (Main English Speaking Countries)	English	Non-CALD
	Other than English or Australian Indigenous Language	CALD
OTMESC (Other than Main English Speaking Countries)	English	CALD
	Other than English or Australian Indigenous Language	CALD
Not stated	English	Non-CALD
	Other than English or Australian Indigenous Language	CALD
Australia (including external territories)	English	Australian born
	Other than English or Australian Indigenous Language	Australian born

The inclusion of First Nations in non-CALD totals is also an inherent challenge of this approach, which focuses on where someone was born and the language they speak. It is therefore intentional that our Study uses a three-layer analytical approach—focusing on the whole population, CALD people, and First Nations people. We also include insights where possible on migrants who have arrived as a child or an adult to add an additional intersectional layer considering the CALD proxy's limitations.

For data analysis outside of PLIDA, we also use other variables such as proficiency in spoken English and MESC/OTMESC in contrast to the CALD proxy. For example, we will use MESC/OTMESC in our longitudinal Census analysis in Paper 2 and are currently exploring how to capture potential further disadvantage within the broader category of those born in a MESC country using the level of proficiency in spoken English as a third additional variable.

These insights are in line with the above ABS standard definition on Cultural and Language Diversity which highlight potential linguistic disadvantage and its possible flow on effects in terms of disparity in economic outcomes. An example of this designation would be 'those born in OTMESC with poor or no English proficiency'. The broader variable is defined as: Proficiency in Spoken English—ENGLP: Uses other language and speaks English: Not well; Uses other language and speaks English; Not at all.

The inclusion of this variable, where possible, also captures the difference in outcomes between poor/no English proficient individuals and those who speak English with skill which we know from initial qualitative data findings from the Study leads to discrimination in the workplace that intersects with sex discrimination.

Using ancestry, proficiency in Spoken English and other CALD related variables in future research and/or drawing on the Standard Australian Classification of Countries (SACC) variables for deeper case study, region or country-related intersectional analysis was also considered and would be of merit. JSA is continuing to explore how to better progress intersectional analysis for CALD populations and welcomes suggestions and collaborations on how to do this.

Part 1 Technical Detail: Occupational Segregation

Census Methodology

Census ANZSCO 4-digit occupation estimates methodology

All figures derived for the occupational segregation analysis that are based on 2006 and 2021 ABS, Census of Population of Housing data, are at the ANZSCO 4-digit occupation (OCCP) level.

Any reported aggregate numbers, such total workforce, including whether it be by whole economy, gender, cohort and age, are calculated as a sum of the ANZSCO 4-digit occupation, but do not include occupations classed as 'nfds'/'not further defined' at the 4-digit occupation level in the summation. Aggregated figures also do not include counts for 'Inadequately described', 'Not stated', and 'Not applicable'.

This method is also true for any denominators where percentages (whether it be for an occupation or a range of occupations) are given as a proportion of total workforce, including whether it be by whole economy, gender, cohort, or age.

Occupation shortages methodology

Occupation shortages are based on the Jobs and Skills Australia Occupation Shortage List. Occupations assessed as being in 'Shortage' or 'Regional Shortage' at the national level are classified as being in shortage. It is important to note that not all occupations are assessed for shortage. This exclusion includes all skill level 5 occupations. As such, of the 358 ANZSCO 4-digit occupations used in the analysis of this report, 311 have been assessed.

For more information on the Occupation Shortage List and the underlying methodology please visit the Occupation Shortage Analysis page.

International examples of occupational segregation

A New Zealand analysis of Census data from 1991 to 2013 analysed occupational gender segregation at ANZSCO 3-digit (Stats NZ 2015). With 98 occupations classified at this less detailed level, 18 occupations were highly feminised (over 70% women) and 46 were highly masculinised (over 70% men). Therefore, like Australian findings, two-thirds of occupations in New Zealand are highly gendered, with over 70% of one gender in that occupation, indicating a highly gendered workforce.

Canadian 2021 Census data tells a similar story, classified at their equivalent 4-digit occupational level. When coding Canadian Census data (Statistics Canada 2021) to our GSIS, 20% of occupations are classified as 'Almost completely gendered' (Statistics Canada 2021). These findings aligned with our findings on Australia's workforce at the 4-digit occupational level, where 21% of occupations are almost completely gendered.

'Top growing occupations' methodology

To capture the full picture of occupational change between 2006 and 2021, we looked at how occupations have grown from two perspectives. First growth by pace (i.e. 'fastest growing') and second growth by size (i.e. 'largest number of extra workers'). These two complementary methods were used together to identify the 'top growing occupations'.

First, occupations were ranked by percentage growth to identify the fastest growing occupations relative to their 2006 size. The top 10% of occupations by count (36 out of 358) were selected for analysis using this approach.

Second, occupations were ranked by numeric growth—the absolute increase in the number of people employed over the same period, and the top 10% by count were again selected. Including both metrics is important because each highlights different labour market dynamics.

Percentage growth emphasises rapid expansion, drawing attention to emerging or rapidly growing occupations that may have started from a small base. In contrast, numeric growth captures occupations that have added the largest number of workers overall, reflecting broader structural shifts in the workforce. Analysing both provides a more holistic view of occupational change and ensures that both momentum and scale are considered in assessing workforce trends.

To identify the largest occupations for analysis, three cutoffs in the 2021 workforce distributions were evaluated—75th percentile (top 25%), 90th percentile (top 10%) and 95th percentile (top 5%). These cut-offs were applied to the ranked list of occupations, not to the cumulative share of total workforce. That is, occupations were sorted from largest to smallest based on the number of people employed, and the top 10% of occupations by count, that is, the 36 highest ranking occupations out of a total of 358, were selected. This group was chosen as it strikes a balance between breadth and focus: the top 25% is too broad for deep insight and the top 5% is too narrow to reveal patterns. Selecting the top 10% by occupation count provides a manageable and meaningful subset that represents the most influential occupations in terms of workforce composition and gender distribution.

Table 3: Occupations in the top growing occupations that changed segregation intensity from 2006 to 2021

Occupation	Segregation intensity 2006	Segregation intensity 2021
Advertising and Sales Managers	Moderately male dominated	Gender Balanced
Advertising and Marketing Professionals	Gender balanced	Moderately female dominated
Management and Organisation Analysts	Moderately male dominated	Gender Balanced
Storepersons	Highly male dominated	Moderately male dominated
Secondary School Teachers	Gender balanced	Moderately female dominated
Bar Attendants and Baristas	Gender balanced	Moderately female dominated
Other Specialist Managers	Moderately male dominated	Gender balanced
Generalist Medical Practitioners	Moderately male dominated	Gender balanced
Kitchenhands	Moderately female dominated	Gender balanced
Commercial Cleaners	Moderately female dominated	Gender balanced

Source: ABS, Census of Population and Housing, 2006 and 2021.

Supplementary tables and analysis

Skill Level segregation

Females now account for more of the Skill Level 1 workforce than males (51% and 49%). Despite females accounting for 49% of the total workforce, they account for most of the workforce within each of the skill levels, aside from Skill Level 3, for which 68% of the workforce is male.

While Skill Level 3 only accounts for 15% of the total workforce, most occupations at this skill level are in shortage, meaning that greater uptake of Skill Level 3 occupation by females will be important into the future. Female representation is greatest in Skill Level 2 and 4 occupations.

Table 4: Occupational skill levels as a proportion of the total workforce in 2021, the proportion of each skill level male and female, and proportion of occupations within skill level that are in national shortage

Skill Level	% of ALL workforce	% ALL workforce Male	% ALL workforce Female	% of occupations in shortage
ALL workforce	**100%**	**51%**	**49%**	**28%**
Skill Level One	33%	49%	51%	34%
Skill Level Two	13%	46%	54%	20%
Skill Level Three	15%	68%	32%	54%
Skill Level Four	24%	46%	54%	19%
Skill Level Five	15%	49%	51%	0%

Source: ABS, Census of Population and Housing, 2021

Changes over time

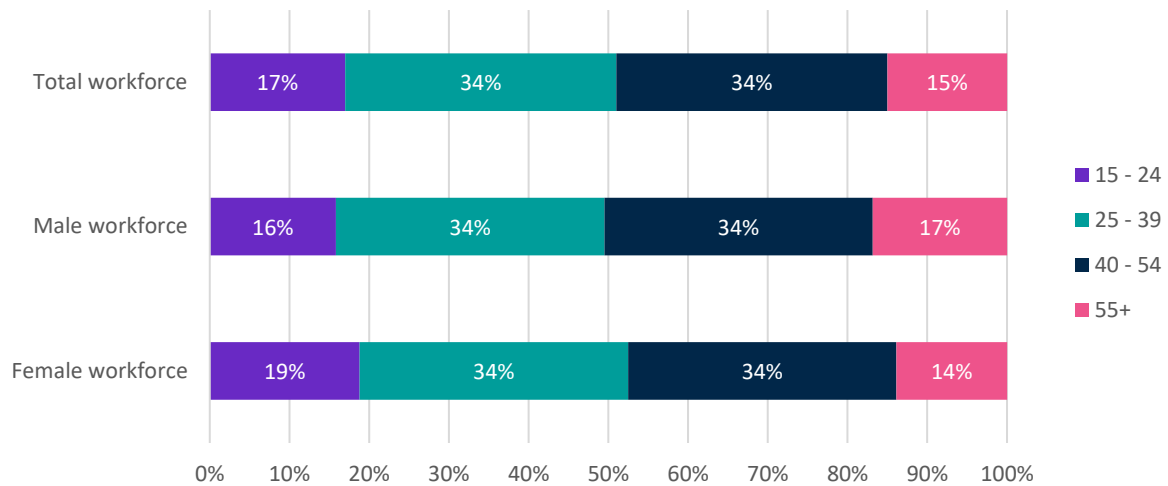A total of 18 occupations shifted from a gender balanced segregation category in 2006 to being female dominated in 2021.

Table 5: Occupations that shifted from gender balanced to female dominated

Occupation	Gender segregation intensity 2006	% female workforce 2006	Gender segregation intensity 2021	% female workforce 2021
Fashion, Industrial and Jewellery Designers	Gender balanced	59%	Female dominated	60%
Secondary School Teachers	Gender balanced	59%	Female dominated	62%
Food Trades Assistants	Gender balanced	58%	Female dominated	62%
Advertising and Marketing Professionals	Gender balanced	57%	Female dominated	62%
Bar Attendants and Baristas	Gender balanced	57%	Female dominated	62%
Other Education Managers	Gender balanced	57%	Female dominated	63%
Other Accommodation and Hospitality Managers	Gender balanced	56%	Female dominated	62%
Intelligence and Policy Analysts	Gender balanced	58%	Female dominated	64%
Human Resource Managers	Gender balanced	54%	Female dominated	62%
Pharmacists	Gender balanced	56%	Female dominated	64%
Visual Arts and Crafts Professionals	Gender balanced	55%	Female dominated	64%
Judicial and Other Legal Professionals	Gender balanced	51%	Female dominated	61%
Optometrists and Orthoptists	Gender balanced	51%	Female dominated	63%
Dental Hygienists, Technicians and Therapists	Gender balanced	52%	Female dominated	65%
School Principals	Gender balanced	50%	Female dominated	65%
Animal Attendants and Trainers	Gender balanced	56%	Female dominated	72%
Veterinarians	Gender balanced	46%	Female dominated	67%
Other Sales Support Workers	Gender balanced	45%	Female dominated	73%

Source: ABS, Census of Population and Housing, 2006 and 2021.

Changes across the life course - age cohort

Figure 1: Age distribution of male, female, and total workforce, 2006

Total workforce: 17% (15 - 24), 34% (25 - 39), 34% (40 - 54), 15% (55+)
Male workforce: 16% (15 - 24), 34% (25 - 39), 34% (40 - 54), 17% (55+)
Female workforce: 19% (15 - 24), 34% (25 - 39), 34% (40 - 54), 14% (55+)

Legend: 15 - 24, 25 - 39, 40 - 54, 55+

Source: ABS Census of Population and Housing, 2006.

Figure 2: Age distribution of male, female, and total workforce, 2021

Total workforce: 14% (15 - 24), 34% (25 - 39), 31% (40 - 54), 20% (55+)
Male workforce: 14% (15 - 24), 35% (25 - 39), 31% (40 - 54), 21% (55+)
Female workforce: 15% (15 - 24), 34% (25 - 39), 31% (40 - 54), 19% (55+)

Legend: 15 - 24, 25 - 39, 40 - 54, 55+
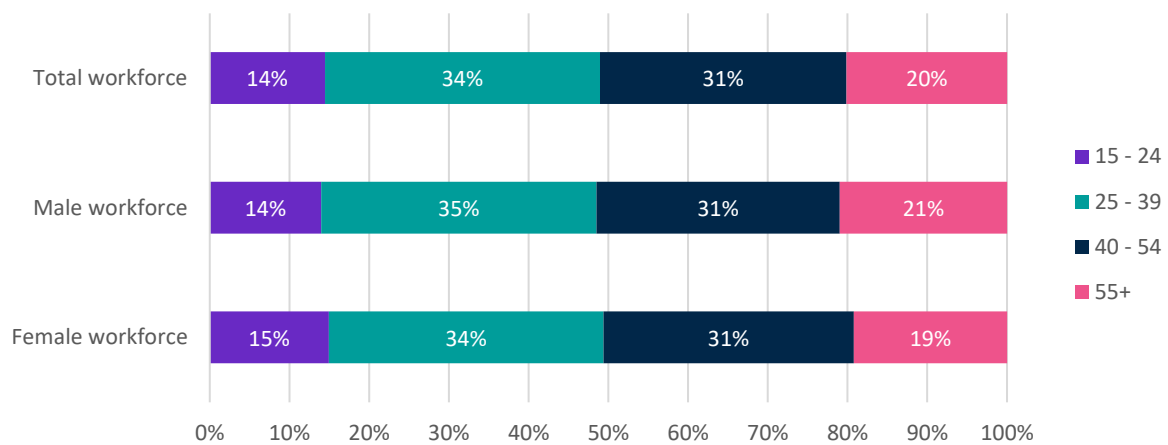
Source: ABS Census of Population and Housing, 2021.

Table 6: Shifts in ANZSCO 4-digit occupation gender segregation intensity by age group from 2006 to 2021

Age cohort	Gender segregation intensity	Occupation count (Census '06)	Occupation count (Census '21)	% change
15 - 24	Gender balanced	20%	22%	2%
	Moderately male or female dominated	27%	35%	8%
	Highly male or female dominated	27%	26%	-1%
	Almost completely male or female dominated	26%	18%	-8%
25 - 39	Gender balanced	19%	22%	3%
	Moderately male or female dominated	27%	27%	No change
	Highly male or female dominated	28%	30%	2%
	Almost completely male or female dominated	25%	21%	-4%
40 - 54	Gender balanced	15%	18%	3%
	Moderately male or female dominated	27%	29%	2%
	Highly male or female dominated	28%	28%	No change
	Almost completely male or female dominated	30%	25%	-5%
55+	Gender balanced	12%	15%	3%
	Moderately male or female dominated	25%	25%	No change
	Highly male or female dominated	28%	30%	2%
	Almost completely male or female dominated	35%	30%	-5%

Source: ABS Census of Population and Housing, 2006 and 2021.

Part 2 Technical Detail: Gender Pay Gaps

How the JSA gender pay gap measures complement those produced by WGEA and the ABS

What are the similarities and differences in how WGEA and ABS report gender pay gaps?

Australia is fortunate in having a range of organisations that regularly collect and publish gender pay gap information, including the Workplace Gender Equality Agency (WGEA) and the Australian Bureau of Statistics (ABS). A key difference in our gender pay gap analysis in this study is that it uses different data—integrated administrative and Census data that is well suited to detailed occupational and intersectional analysis—to generate new insights.

As the below table shows, this complements the existing high quality and more timely gender pay gap measures produced by WGEA and the ABS, by focusing on data and analysis for very detailed occupations and demographic characteristics (e.g. for First Nations people, based on their direct responses in Census data). The longitudinal linkages of person-level administrative and Census data also enable a range of unique analysis, including accumulated pay gaps over time.

Table 7: JSA Gender Economic Equality Study, WGEA, and ABS gender pay gap measures

	Gender pay gap measures in this JSA study	WGEA gender pay gap measures	ABS gender pay gap measures
Data source	Person Linked Integrated Data Asset (PLIDA) - mainly tax data and Census data - including longitudinal linkages	Annual reporting by employers to WGEA	ABS employer surveys
Main focus of data and analysis	Very detailed occupations and demographic characteristics (e.g. for First Nations people)	Industries and employer level information, including major groupings of occupations, including some age information	Industries and major groupings of occupations, including some age information
Period(s) that pay reflects	Annual amounts recorded in tax data from all employers and employment	Annualised amounts, using information provided directly by employers	Weekly and hourly amounts
Type(s) of pay	Total employment income, from tax data	Total pay and base/ordinary pay	Total pay and base/ordinary pay
Working arrangements and other related job characteristics	Limited to hours of work from Census	A range of information to support more like-for-like comparisons	A range of information to support more like-for-like comparisons

Methodology used in this Study

Annualisation

Our Study has leveraged personal income and PAYG tax data to produce detailed occupation and intersectional gender pay gaps. This comes with some limitations, as only limited 'annualisation' of the data is possible. Annualisation for gender pay gap analysis is usually when the income of those who do not work full-time is adjusted to calculate their salary if they did work full time, and to present this as an annual figure, in respect of an entire financial year. This allows for a like-for-like comparison against full time workers with those that work part time, as well as people who worked for part of the year with people who worked for the whole of the year.

This means the Study's gender pay gaps are calculated differently to those from the Workplace Gender Equality Agency, who annualise their data both for different working hours and different periods of time through the year, while this Study has only been able to do the latter (which is why median hours worked data is included to provide important supporting context). See methodological summary below.

Exclusion of self-employed and people with no income

In our pay gap calculations, we exclude people with nil/zero income because $0 income values have the potential to skew the data. This aligns with other pay gap calculation approaches, such as WGEA's. Private Sector Employer Gender Pay Gap Technical Guide 2024

ATO income tax return data, also does not capture all self-employed individuals which operate as a business and meeting the Personal Services Business Test. Business owners of this type submit a Company Tax Return and there is no requirement for them to report an occupation to the tax office.

Occupations included in pay gap analysis

Not all ANZSCO 6-digit occupations were able to be analysed in this Study. Occupations classified as 'not further defined'/'nfd', as well as those with a workforce size less than 1,000 employees were excluded from analysis. Additionally, occupations that had no income for females (i.e., a 100% gender pay gap) were excluded from analysis. This left a total of 688 ANZSCO 6-digit occupational median annual gender pay gaps included in this Study.

Classifying 'neutral' gender pay gaps

Aligning with WGEA's approach, this Study classified a pay gap as being 'neutral' when it was 5% or below. 2% of occupations had a median annual gender pay gap equal to or less than 5% and were considered 'neutral' pay gaps, with two occupations having pay gaps in favour of women: Project Builders (-12.0%) and Earthmoving Plant Operators (-6.2%). These two occupations also had pay gaps in favour of women over a decade ago in 2010-11.

This Study does not delve into these occupational pay gaps in favour of women, but with Project Builders being a large employing occupation in a male dominated construction industry, further investigation into its pay gap being in favour of women is warranted.

Occupational gender pay gaps over time

To assess changes in occupational median annual gender pay gaps over time, we calculated gaps at four time points in 2010-11, 2013-14, 2016-17 and 2018-19. As noted in the main paper, both the total workforce and occupational gender pay gaps decreased over time. However, there was a slight increase in the number of occupations that had a gender pay gap in favour of males. In 2010-11, 93% of occupational gender pay gaps were in favour of males but in 2022-23 this increased to 98%.

Many of the occupations that have seen the largest differences in gender pay gaps over this time are seasonal and/or highly casualised jobs, such as University Tutors, Out of School Hours Care Workers, and Fruit or Nut Pickers. Gender pay gap data is impacted by seasonality of some occupations because the workforce can rapidly increase or decrease, making it difficult to capture a representative picture of annual income. Regardless, JSA suggests in future work that large differences in gender pay gaps over time warrant further investigation.

10-year accumulated gender pay gaps

We calculated our 10-year accumulated gender pay gap figures by collecting the annual combined income for 10 years for individuals who earned a non-zero income in each year for the 2010-11 Cohort. The median 10-year accumulated income for an occupation was then compared to two male benchmarks: an 'ALL males' and 'non-CALD male' comparison. The non-CALD male benchmark is based on the CALD proxy outlined earlier in this technical paper.

One limitation of this 10-year accumulated pay gap is that we only know the occupation of the 2010-11 cohort for the first year in the data, and as we follow them over time to calculate the accumulated 10-year gender pay gaps we cannot identify or monitor any occupation changes. While on one hand this could be considered a limitation, particularly if we were solely looking at occupational accumulated 10-year gender pay gaps, on the other hand it does have an advantage in automatically accounting for job mobility or career changes and highlights the long-term earnings experiences of people in those occupations. See the supplementary tables and analysis in the next section on findings in relation to this.

A second limitation is that some people, particularly women, may take more than a full financial year's worth of unpaid leave (thereby not having any employment income in that financial year) and will therefore not be included in this analysis. However, this is a very small proportion of employed people.

Occupational median hours worked gaps

Alongside occupational gender pay gaps, this Study also presents occupational median hours worked gaps for ANZSCO 6-digit occupations. This is to assist in interpreting pay gap data, particularly related to gender differences in working arrangements.

Sometimes these differences are important for considering gender pay gaps, when trying to account for them in 'like-for-like' comparisons, but in other instances the gaps in earnings - including the gaps in working arrangements - are important for assessing gender economic inequality. For instance, this is why our 10-year accumulated gender pay gaps are important, for understanding the accumulated differences in income over time, based on the full range of factors that contribute to these differences.

Occupational median hours worked gaps were calculated in this Study based off reported hours of work per the 2021 ABS Census. This was calculated using an averaged weighted approach, as individuals respond to the hours worked Census question by indicating a single number (i.e. 40 hours) of how much they worked in the past week.

It is important to note that occupational median hours worked in the 2021 Census could be impacted by various parts of Australia being in stages of COVID-19 lockdown at this time, and so median hours worked results related to occupations that were impacted by lockdowns need to be interpreted with caution.

However, median measures are less susceptible to these impacts, which are more likely to affect the high and low ends of the hours distribution. Also, the gaps between males and females are less likely to be impacted, given the impacts from lockdowns were more likely to be correlated occupation-level effects (that is, changes in the hours that people were working across the occupation, more than profound difference for males and females).

Occupational median hours worked gaps were calculated using same approach as gender pay gaps, with the difference between males and females median hours worked in an occupation expressed as a percentage of males' occupational median hours worked. For example, if males worked 40 hours a week in an occupation, and females worked 38 hours, this would be expressed as an occupational median hours worked gap of 5%.

Supplementary tables and analysis

Headline gender pay gap ranges

Table 8: Range classifications of occupational median annual gender pay gaps

Occupational median annual gender pay gap range	ANZSCO 6-digit Occupation count	ANZSCO 6-digit Occupation %
Gender pay gap above 35%	28	4%
Between 30% and 35%	26	4%
Between 25% and 30%	72	11%
Between 20% and 25%	106	15%
Between 15% and 20%	187	27%
Between 10% and 15%	167	24%
Between 5 and 10%	84	12%
Gender pay gap 5% and below	18	3%

Source: Person Level Integrated Data Asset (PLIDA), ABS DataLab. Findings based on use of PLIDA data.

Note: For simplicity the ranges are labelled as "Between 30% and 35%" but this is actually "Greater than 30% but less than or equal to than 35%".

Occupational gender pay gaps over time ranges

Table 9: ANZSCO 6-digit occupational median annual gender pay gaps by ranges, over time

Occupational median annual gender pay gap range	2010-11 ANZSCO 6-digit Occupations (%)	2022-23 ANZSCO 6-digit Occupations (%)
Gender pay gap above 35%	8%	4%
Gender pay gap between 31% and 35%	7%	4%
Gender pay gap between 26% and 30%	13%	10%
Gender pay gap between 21% and 25%	20%	16%
Gender pay gap between 16% and 20%	22%	27%
Gender pay gap between 11% and 15%	13%	24%
Gender pay gap between 6% and 10%	8%	12%
Gender pay gap 5% and below	8%	3%

Source: Person Level Integrated Data Asset (PLIDA), ABS DataLab. Findings based on use of PLIDA data.

10-year accumulated gender pay gap ranges

Table 10: Distribution of ANZSCO 6-digit point in time and 10-year accumulative gender pay gaps

Occupational gender pay gap range	Point in time occupational median annual gender pay gaps (%)	10-year accumulative occupation gender pay gaps (%)
Gender pay gap above 35%	4%	7%
Between 30% and 35%	4%	10%
Between 25% and 30%	11%	18%
Between 20% and 25%	15%	28%
Between 15% and 20%	27%	21%
Between 10% and 15%	24%	12%
Between 5% and 10%	12%	5%
Gender pay gap 5% and below	3%	1%

Source: Person Level Integrated Data Asset (PLIDA), ABS DataLab. Findings based on use of PLIDA data.

10-year gender pay gaps for ANZSCO 6-digit occupations show some similar trends to point in time pay gaps, with 99% of occupations having a 10-year median gender pay gap in favour of males. However, typically 10-year occupational gender pay gaps are much larger. For example, the percentage of ANZSCO 6-digit occupations with a 10-year gender pay gap above 35% almost doubles when compared to occupational pay gaps at point in time (7% and 4% respectively).

Despite the methodological limitation above, JSA recommends future analysis on these 10-year gender pay gaps at the ANZSCO 6-digit level to gather further occupational insights on gender economic equality across Australia's workforce especially in occupations where we know there is long tenure.

Gender pay gaps and occupational median hours worked and paid

There are many factors that drive gender pay gaps, and while it has been established that part-time work is a contributing factor, both Australian and international research has demonstrated repeatedly that the primary drivers of the gender pay gap are structural, not individual. Gender discrimination; years out of the workforce due to unpaid care and other work; gendered norms that drive career choice and reinforce gendered occupational segregation; and pay gaps *within* occupations—even when males and females have the same qualifications and skills—are most significant. The gender pay gap drivers are summarised at the opening of Part 2 of the main paper.

Below we explore how controlling for gender differences in hours worked and paid for can assist in identifying occupations where pay gaps are notably high and driven by factors beyond patterns of work or part-time status.

Supplementary analysis: 'neutral' occupational median hours worked and occupational median annual gender pay gaps

To align with definitions of a 'neutral' gender pay gap, an occupational median hours worked difference was considered neutral when the percentage difference in occupational median hours worked/paid between males and females was within the range of -5% to 5%. This was classified as males and females working similar hours, in median terms.

Males and females were classified as having less than half a day working difference in occupational median hours worked when the percentage difference was between 6% and 10%, equating to a time difference of 2 to 4 hours.

Table 11: Occupational median hours worked differences between males and females across ANZSCO levels

Occupational median hours worked difference between males and females	ANZSCO 6-digit occupations (%)	ANZSCO 4-digit occupations (%)	ANZSCO 3-digit occupations (%)	ANZSCO 2-digit occupations (%)
Males and females working similar hours	23%	58%	66%	55%
Less than half a working day difference	37%	7%	8%	10%
More than half a day working difference	40%	35%	25%	36%

Source: ABS, Census of Population and Housing, 2021 and Employee Earnings and Hours, 2021.

Note: Only occupations that had both males and females median hours worked reported in the 2021 Census were included in the analysis. Percentages may add up to over 100 due to rounding.

Table 12: ANZSCO 4-digit occupations with neutral occupational median hours worked gaps by segregation indicator

Gender segregation intensity	ANZSCO 4-digit occupations with a neutral occupational median hours worked gap (%)
Gender balanced	65%
Moderately female or male dominated	61%
Highly female or male dominated	47%
Almost completely female or male dominated	62%

Source: ABS, Census of Population and Housing, 2021.

Table 13: Count of ANZSCO 4-digit occupations with neutral occupational median hours worked gaps by skill level

Skill Level	ANZSCO 4-digit occupations with a neutral occupational median hours worked gap (%)
Skill Level 1	72%
Skill Level 2	69%
Skill Level 3	50%
Skill Level 4	54%
Skill Level 5	31%

Source: ABS, Census of Population and Housing, 2021.

Supplementary analysis: pay gaps where males and females work full time and similar hours

To control for differences between males' and females' hours worked in an occupation when analysing our more detailed occupational pay gap data, an analysis on the most recent Census (2021) showed that at the ANZSCO 6-digit level, there were 155 occupations (23%) where males and females worked similar hours. At the ANZSCO 4-digit level this is slightly higher at 58%.

At the ANZSCO 3-digit level, based on similar hours paid 2021 data from the Employee Earnings and Hours (EEH) Survey, males and females work similar hours in 69% of occupations. In fact, in the 12 years from 2012 to 2023 there has been males and females are increasingly working similar hours and the spotlight changing patterns of hours worked and paid below gives more information including how patterns change across age cohorts at the ANZSCO 2-digit level.

Table 14: Occupational median hours worked gaps by ANZSCO 6-digit occupations

Occupational median hours worked difference between males and females	ANZSCO 6-digit occupation count	ANZSCO 6-digit occupation count (%)
Males and females work similar hours	155	23%
Half a workday difference between males and females	252	37%
Over half a workday but less than a full workday difference between males and females	228	33%
More than a workday difference between males and females	50	7%

Source: ABS, Census of Population and Housing, 2021.

Note: 3 of the 688 occupations analysed had no female occupational median hours worked recorded in the 2021 Census and so were excluded from analysis.

When adding a 'full-time equivalent' lens and focusing only on occupations where males and females are working 35 hours or more a week, as per the ABS threshold, there are 109 ANZSCO 6-digit occupations where males and females work similar hours.

Of particular interest is the female dominated occupation of Obstetrician and Gynaecologists. This is a high skilled, female dominated occupation that essentially has a 0% occupational median hours worked gap, but the gender pay gap is still very high at 22.6%.

Other notably high occupational median annual gender pay gaps in this sample of 109 full-time equivalent working similar hours include:

- Scaffolders have an occupational median annual gender pay gap of 41.4%, despite only a 4% occupational median hours worked gap.

- Air Traffic Controllers have an occupational median annual gender pay gap of 34.7%, with a 1% occupational median hours worked gap.

- Aircraft Maintenance Engineer (Mechanical) where females work 1.2 hours longer per week than males, with an occupational median annual gender pay gap of 22.3%.

- Miners, where females work 2.1 hours longer per week than males, have an occupational median annual gender pay gap of 19.8%.

- The top 20 largest occupational median annual pay gaps in this category are also presented in Table 15 below.

Table 15: Top 20 largest occupational median annual gender pay gaps for ANZSCO 6-digit occupations with neutral occupational median hours worked gaps, and full-time equivalent hours for both males and females

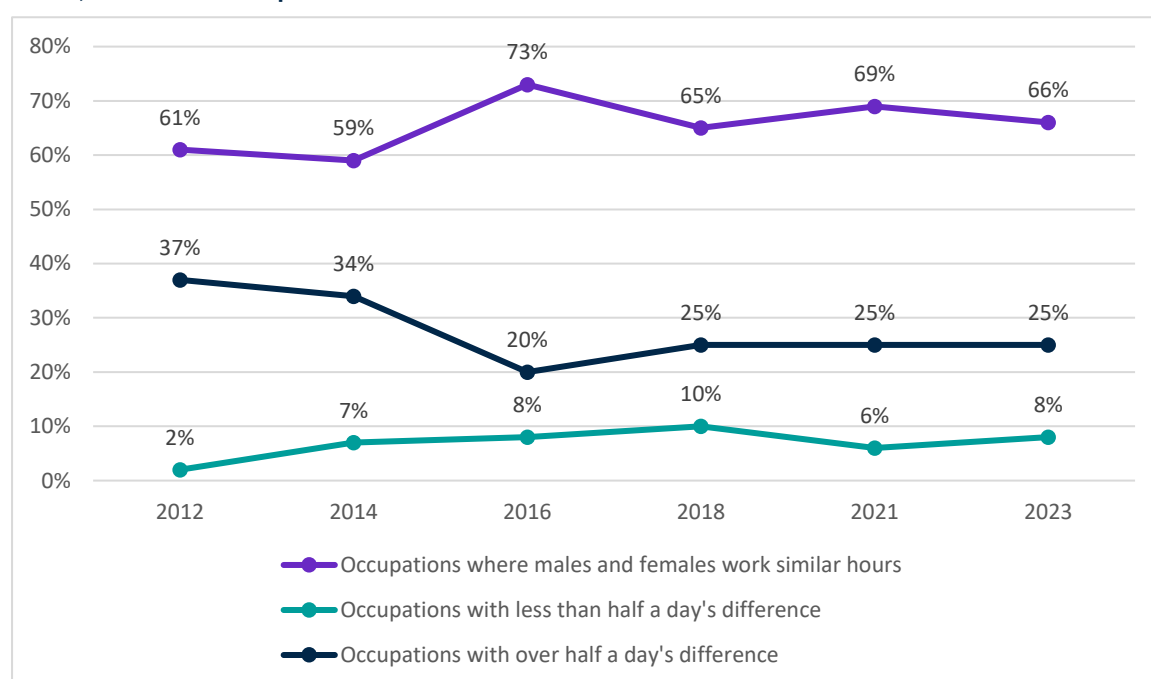| ANZSCO 6-digit occupation	Occupational median hours worked gap (%)	2022-23 Occupational median annual gender pay gap (%)	Skill Level	Gender segregation intensity
Scaffolder	4%	41.4%	Skill Level 4	Almost completely male dominated
Steel Fixer	4%	41.0%	Skill Level 4	Almost completely male dominated
Regional Education Manager	5%	35.4%	Skill Level 1	Moderately female dominated
Air Traffic Controller	1%	34.7%	Skill Level 1	Highly male dominated
Property Manager	4%	31.7%	Skill Level 3	Moderately female dominated
Brewery Worker	4%	31.3%	Skill Level 5	Almost completely male dominated
Statistical Clerk	4%	28.8%	Skill Level 4	Moderately female dominated
Machine Operators nec	3%	27.2%	Skill Level 4	Highly male dominated
Telecommunications Cable Jointer	0%	26.1%	Skill Level 3	Almost completely male dominated
Chemical Plant Operator	3%	25.7%	Skill Level 3	Almost completely male dominated
Transport Conductor	5%	25.2%	Skill Level 5	Moderately male dominated
Metal Engineering Process Worker	1%	23.7%	Skill Level 5	Almost completely male dominated
Obstetrician and Gynaecologist	0%	22.6%	Skill Level 1	Moderately female dominated
Aircraft Maintenance Engineer (Mechanical)	3%	22.3%	Skill Level 3	Almost completely male dominated
Transport Operations Inspector	1%	21.9%	Skill Level 4	Moderately male dominated
Mining Support Worker	2%	21.5%	Skill Level 5	Highly male dominated
Locksmith	2%	20.7%	Skill Level 3	Almost completely male dominated

Source: Person Level Integrated Data Asset (PLIDA), ABS DataLab. Findings based on use of PLIDA data. ABS, Census of Population and Housing, 2021.

Supplementary analysis: changing patterns of median hours worked and paid 2012-2023

In addition to the above 2021 Census analysis, this Study also sourced ABS custom data from the Employee Earnings and Hours (EEH) survey to explore changing patterns of hours worked and paid. We used the same median hours worked difference and time conversions methodology as for the Census analysis.

We found that when looking at the difference in hours paid between males and females from 2012-2023, there is an increasing trend in the number of ANZSCO 3-digit occupations males and females working similar hours. For example, if males had a 5% occupational median hours paid gap in their favour, they would be paid an equivalent of 2 hours more than their female counterparts in that occupation. The below analysis indicates that in approximately 2 out of every 3 occupations, males and females work similar hours, in median terms.

Figure 3: Percentage of ANZSCO 3-digit occupations where males and females are working the same hours, based on hours paid data

Source: ABS, Employee Earnings and Hours, 2012 to 2023.

We know that patterns of work vary over the life course, and so we investigated differences in occupational median hour paid by age cohort using the same ABS custom data as above but at the ANZSCO 2-digit level.

We found that workers of primary working age (25-39 year old cohort and 40-54 year old cohort) have the lowest hours paid gaps between males and females. We also found that the median hours paid gaps are largest at early and later life stages, with the largest difference in hours paid being between males and females in the 20-24 year old cohort (32%), followed by those over 55 years old (16% hours paid gap).

Table 16: Median hours paid gaps (%) by age cohort for ANZSCO 2-digit occupations

Age cohort	Male median hours paid	Female median hours paid	Median hours paid gap (%)	Number of ANZSCO 2-digit occupations where males and females work similar hours
20 - 24 year olds	37.0	25.0	32%	44%
25 - 39 year olds	38.0	35.0	8%	48%
40 - 54 year olds	38.0	35.0	8%	46%
55+ year olds	38.0	32.0	16%	61%
Total population	**38.0**	**32.0**	**16%**	**55%**

Source: ABS, Employee Earnings and Hours, 2021.

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