

Working from home and fertility in Australia

Evidence from Differential Exposure to the
Post-2020 WFH Expansion

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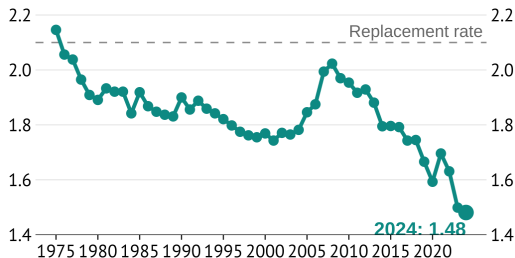
Australia's fertility rate is at a record low

- Total fertility rate fell to **1.48** in 2024
- Well below the 2.1 replacement rate
- One potential constraint is the difficulty of combining paid work and raising children
- From 2020, one dimension of working life changed dramatically:
working from home

Could greater workplace flexibility affect fertility?

Total Fertility Rate in Australia

Births per woman



Sources: ABS, Births, Australia; e61 Institute.

The sign is theoretically ambiguous

May raise fertility

- less commuting time
- more control over where/when to work
- easier to combine work and care
- lower career costs of parenthood



May reduce fertility

- childcare still requires time
- direct costs of children unchanged
- work–family boundaries blur
- stronger job attachment $\Rightarrow$ higher opportunity cost of time

Effects may differ by parity, commuting costs, and household circumstances.

Existing evidence is mixed

Positive / facilitating

Billari et al. (2019)

Davis et al. (2026)

Lu, Zang & Musick (2026)

Conditional / heterogeneous

Osiewalska et al. (2024)

Osiewalska & Matysiak (2025)

Negative

Kurowska et al. (2023)

Closest study – Lu, Zang & Musick (2026):

US CPS, pandemic-driven remote-work expansion $\Rightarrow$ higher first-birth rates among women aged 30–39.

Does the Australian evidence point in the same direction?

This paper

Did fertility change more after 2020 among Australian women with greater exposure to the WFH expansion?

HILDA

- Longitudinal panel, same women followed
- Occupation, WFH, realised births and intentions

Identification

- Teleworkability of a woman's 2019 occupation $\Rightarrow$ predetermined exposure to the post-2020 WFH expansion

Contribution

- Australian evidence
- Realised fertility *and* stated intentions
- Identification diagnostics: placebo tests, occupation-by-year trends

Data and sample

- **HILDA Release 24**, waves 2001–2024
- Sample of women who in a given wave:
 - 1 are aged 30–44;
 - 2 have a valid four-digit ANZSCO occupation recorded in 2019;
 - 3 have a 2019 occupation that maps to the **Sostero et al. (2023)** teleworkability index.
- Employment in the *current* wave is not required for fertility outcomes; it is required only when WFH is the outcome.
- $TELE_i$ = standardised Sostero score for the woman's 2019 occupation;
held fixed across waves

Outcomes we look at

WFH outcome

- Any WFH hours in the reference week
- Available for employed respondents only

Fertility outcomes

Realised fertility

- Annual birth rate: any new birth between waves t and $t+1$
- Two-year birth rate: any new birth between t and $t+2$

Stock measures

- Any children (0/1)
- Any resident child aged 0–4 (0/1)

Fertility intentions (0–10)

- **Intention score:** would like to have more children in the future
- **Expects more children:** How likely to have a child / more children in the future

Empirical design

Reduced form

$$Y_{it} = \delta (\text{TELE}_i \times \text{POST}_t) + \gamma \text{age}_{it}^2 + \mu_i + \lambda_t + \theta_{s(it)} + \pi_{e(it)} + \varepsilon_{it}$$

Event study

$$Y_{it} = \sum_{\substack{s=2001 \\ s \neq 2019}}^{2024} \beta_s (\text{TELE}_i \times \mathbf{1}\{t = s\}) + \gamma \text{age}_{it}^2 + \mu_i + \lambda_t + \theta_{s(it)} + \pi_{e(it)} + \varepsilon_{it}$$

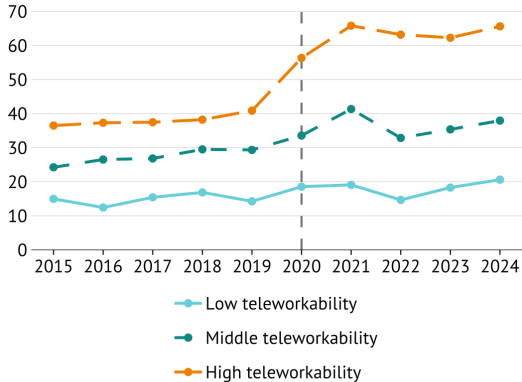
- **TELE_i**: standardised Sostero score for woman *i*'s 2019 occupation; **POST_t**: $\mathbf{1}\{t \geq 2020\}$
- **Fixed effects**: individual, year, state, three education dummies, one-digit 2019 ANZSCO
- Standard errors **clustered at the four-digit 2019 ANZSCO occupation**

Interpretation. $\hat{\delta}$ is an *intent-to-treat* effect – **not** the causal effect of an individual choosing to work from home. Base year for the event study is 2019.

Raw data by pre-pandemic teleworkability tercile

WFH take-up by pre-pandemic teleworkability tercile

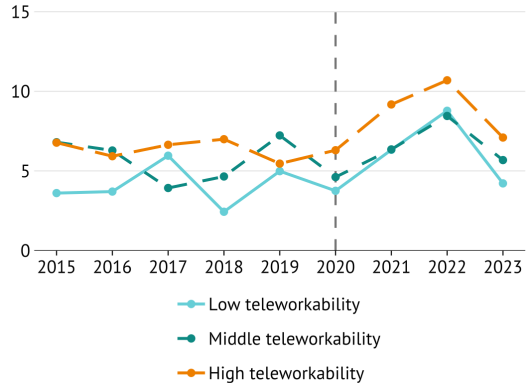
Share working from home (%)



Sources: e61 Institute; HILDA 24.0

Annual birth rate by pre-pandemic teleworkability tercile

Share with any birth in t to t+1 (%)

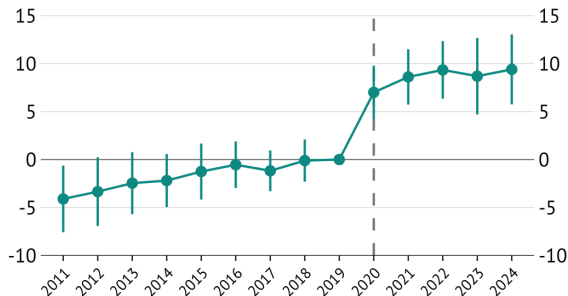


Sources: e61 Institute; HILDA 24.0

The pandemic generated a large differential WFH shock

Teleworkability and WFH take-up

Teleworkability x year coefficient
Change in WFH take-up (percentage points)



Sources: e61 Institute; HILDA 24.0

First stage

A one-standard-deviation higher
pre-pandemic teleworkability score
is associated with a

9.5 pp

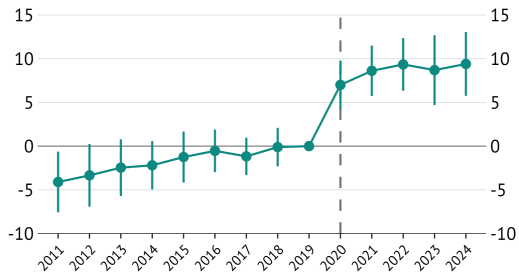
larger post-2020 rise in WFH take-up

WFH increased sharply – annual birth rates did not

Teleworkability and WFH take-up

Teleworkability x year coefficient

Change in WFH take-up (percentage points)



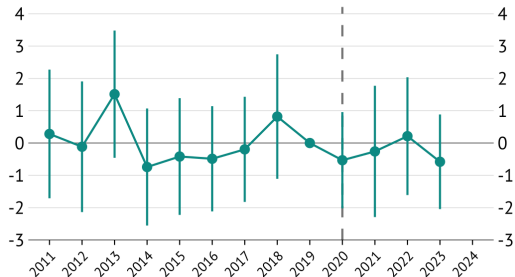
Sources: e61 Institute; HILDA 24.0

WFH take-up

Teleworkability and annual birth rates

Teleworkability x year coefficient

Change in annual birth rate (percentage points)



Sources: e61 Institute; HILDA 24.0

Annual birth rate

- Pooled reduced-form on the annual birth rate: $\hat{\delta} = -0.003$
- Not statistically distinguishable from zero

Baseline estimates across fertility outcomes

Outcome	$\hat{\delta}$	SE
Annual birth rate (any birth t to $t+1$)	-0.003	(0.004)
Two-year birth rate (any birth t to $t+2$)	-0.008	(0.008)
Fertility intention score (0-10)	-0.193***	(0.074)
Expects more children (0-10)	-0.177***	(0.066)
Any children (stock, 0/1)	0.023***	(0.008)
Any child aged 0-4 (stock, 0/1)	0.015	(0.013)

- **Realised birth rates:** estimates are close to zero and statistically insignificant at both 1- and 2-year horizons
- **Intentions and “expects more”:** negative and significant baseline – but this is a pre-existing occupational trend, not a post-2020 change
- **Any-children stock:** positive but fails the pre-trend test

The zero result is robust to demanding specifications

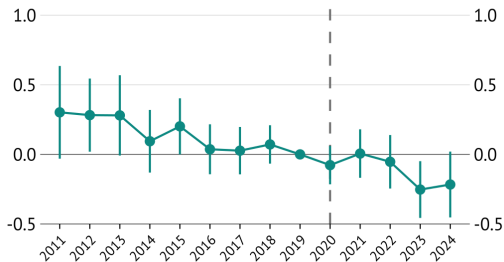
	Baseline	+ state×post	+ 2-dig×year	Contemp. tele.	Dingel–Neiman
$\hat{\delta}$	−0.003	−0.004	0.002	−0.006	−0.002
SE	(0.004)	(0.004)	(0.009)	(0.005)	(0.005)
<i>N</i>	29,889	29,889	29,812	25,239	28,447

- Estimates centred close to zero across every specification
- **State-by-post:** allows the post-2020 shift to differ across states
- **2-digit occ. × year:** broad occupational shocks absorbed; identification from within-two-digit variation
- **Contemporaneous occupation:** sensitivity to fixing at 2019 (endogenous)
- **Dingel–Neiman:** alternative teleworkability measure

Event studies: intentions and expects more children

Teleworkability and fertility intentions

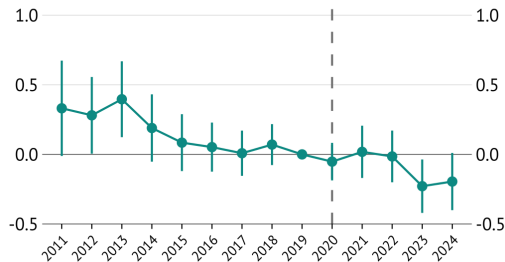
Teleworkability x year coefficient
Change in fertility intention score (0-10)



Sources: e61 Institute; HILDA 24.0

Teleworkability and expected more children

Teleworkability x year coefficient
Change in expects more children (0-10)



Sources: e61 Institute; HILDA 24.0

Fertility intention score (0-10)

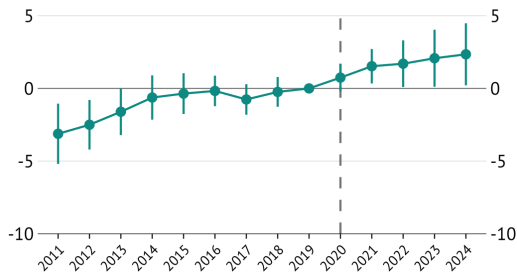
- Both series drift downward through the pre-2020 window
- No discrete break at 2020** $\Rightarrow$ pooled negative estimates appear to reflect a longer-run trend

Event studies: stock fertility outcomes

Teleworkability and having any children

Teleworkability x year coefficient

Change in probability of any children (percentage points)



Sources: e61 Institute; HILDA 24.0

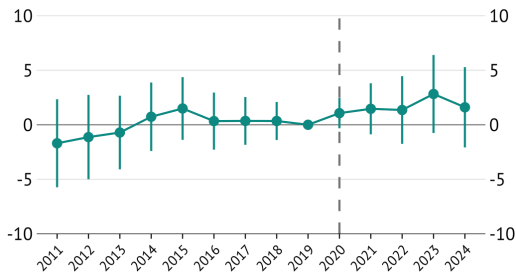
Any children (0/1)

- Any-children stock fails the pre-trend test
- Any child aged 0–4: no differential post-2020 response

Teleworkability and having a child aged 0-4

Teleworkability x year coefficient

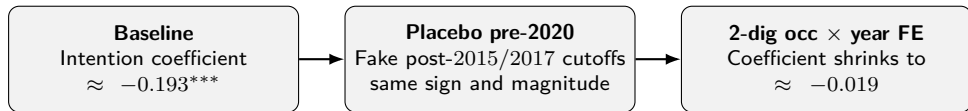
Change in probability of a child aged 0-4 (percentage points)



Sources: e61 Institute; HILDA 24.0

Any child aged 0–4 (0/1)

Fertility intentions: why identification checks matter



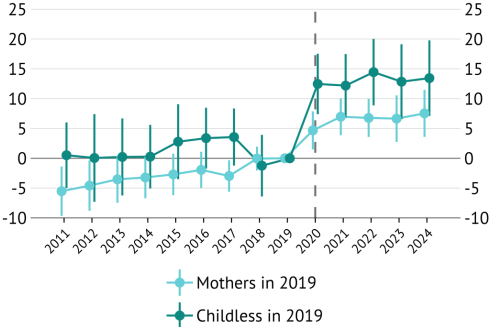
The negative intention estimate reflects a **pre-existing occupational trend**, not a discrete post-2020 response to WFH.

Same pattern for the “expects (more) children” item.

No differential increase in births by parity

Teleworkability and WFH take-up, by 2019 parity

Teleworkability x year coefficient
Change in WFH take-up (percentage points)

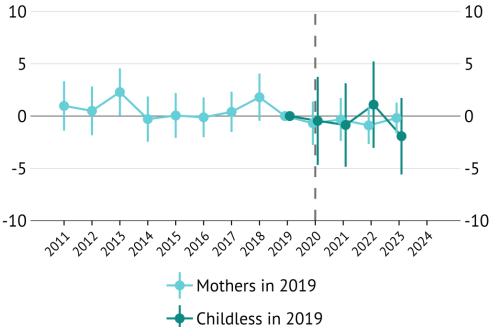


Sources: e61 Institute; HILDA 24.0

WFH take-up

Teleworkability and annual birth rates, by 2019 parity

Teleworkability x year coefficient
Change in annual birth rate (percentage points)



Sources: e61 Institute; HILDA 24.0

Annual birth rate

No differential increase in births by parity

	Mothers in 2019		Childless in 2019	
	Baseline	+ 2-dig×year	Baseline	+ 2-dig×year
WFH take-up	0.082*** (0.014)	0.069*** (0.024)	0.121*** (0.026)	0.041 (0.044)
Annual birth rate	-0.011** (0.005)	-0.001 (0.009)	0.009 (0.010)	-0.002 (0.018)
Fertility intention	-0.308*** (0.089)	-0.144 (0.170)	0.081 (0.137)	0.060 (0.215)
Any children (stock)	0.016** (0.006)	0.029** (0.013)	0.032* (0.019)	0.061* (0.032)

Other heterogeneity cuts tell the same story

Cut	Annual birth rate	Comment	
Education (uni vs no-uni)	Both ≈ 0	No education gradient in the flow	Details
Age band (25–44, four bins)	≈ 0 in every band	Stock gains concentrate at younger ages (first-birth timing)	Details
Own commute time in 2019 (long vs short)	Long: -0.012^* ; Short: ≈ 0	Long-commute women: small negative, opposite to Osiewalska et al. (UK)	Details
Partner teleworkability in 2019 (high vs low)	High: $+0.015^*$; Low: -0.018^{**}	Both-teleworkable couples: small positive, consistent with Davis et al. (2026)	Details

None of the education, age or own-commute cuts survives the more demanding fixed-effect specifications. The clearest positive signal is for couples where *both* partners are teleworkable – suggestive rather than headline.

Interpretation

What WFH does change

- Reduces commuting time [▶ Details](#)
- More control over where and when work is done
- Some combinations of work and care become easier

What WFH does not change directly

- Housing costs
- Childcare costs and availability
- The direct time cost of children
- Broader career costs of parenthood

We **do not detect a robust increase in short-run fertility** associated with greater exposure to the post-2020 WFH expansion in Australia.

Conclusion

- 1 The pandemic produced a **large, persistent, differential expansion** in WFH across occupations.
- 2 Despite this strong first stage, we find **no robust evidence of a corresponding increase in annual birth rates**.
- 3 Results are broadly similar across parity, age, education and commuting groups; the main suggestive exception is when both partners are highly teleworkable.

Workplace flexibility may relieve one constraint on family formation, but changing this margin alone does not appear to materially shift short-run fertility.