



Bubble baths and better data

Getting a better understanding of replacement rate for workforce analyses

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Disclaimer

Access to the data used in this study was provided by Statistics New Zealand 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 authors, not Statistics NZ.

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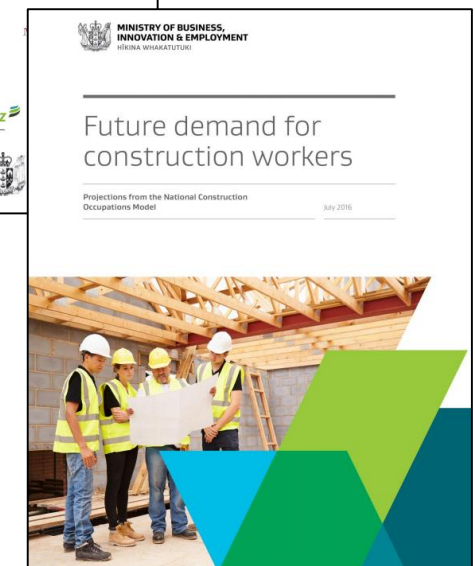
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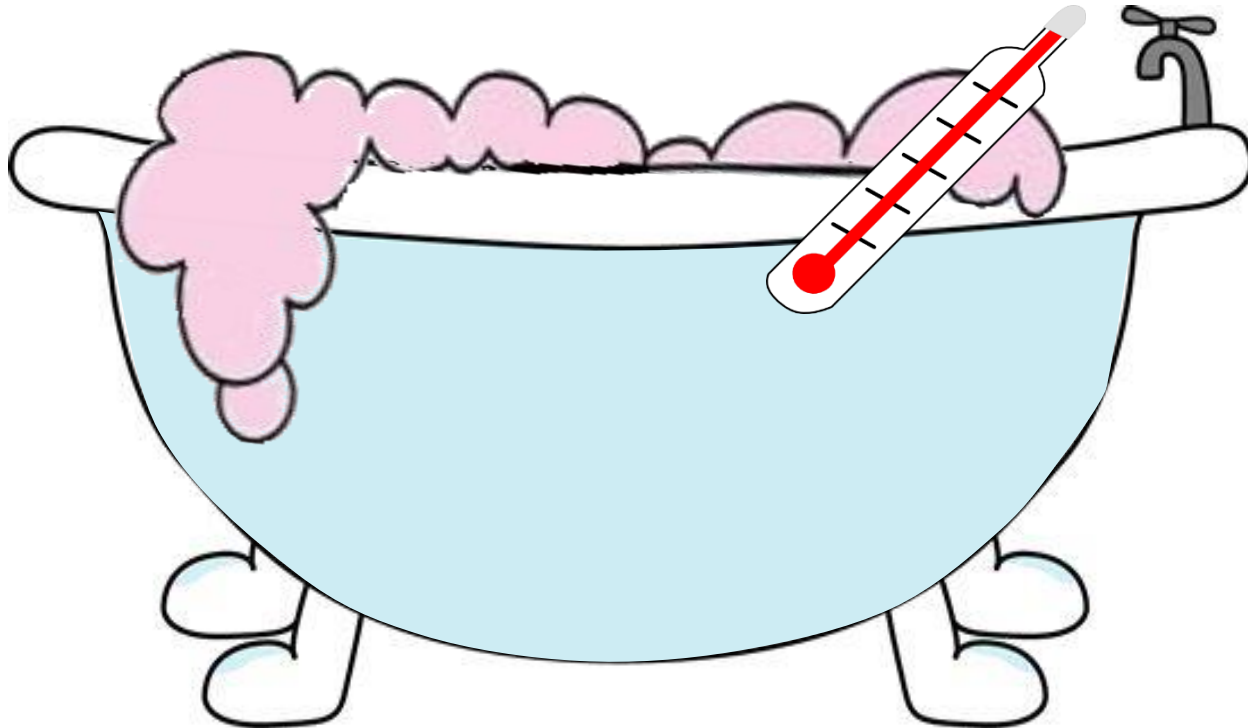
Overview of study

Context for this research

- Lots of organisations do workforce analyses
 - Tertiary providers
 - Industry groups
 - Government departments
- Used to:
 - Create policy e.g. for immigration settings
 - Set investment levels in tertiary training

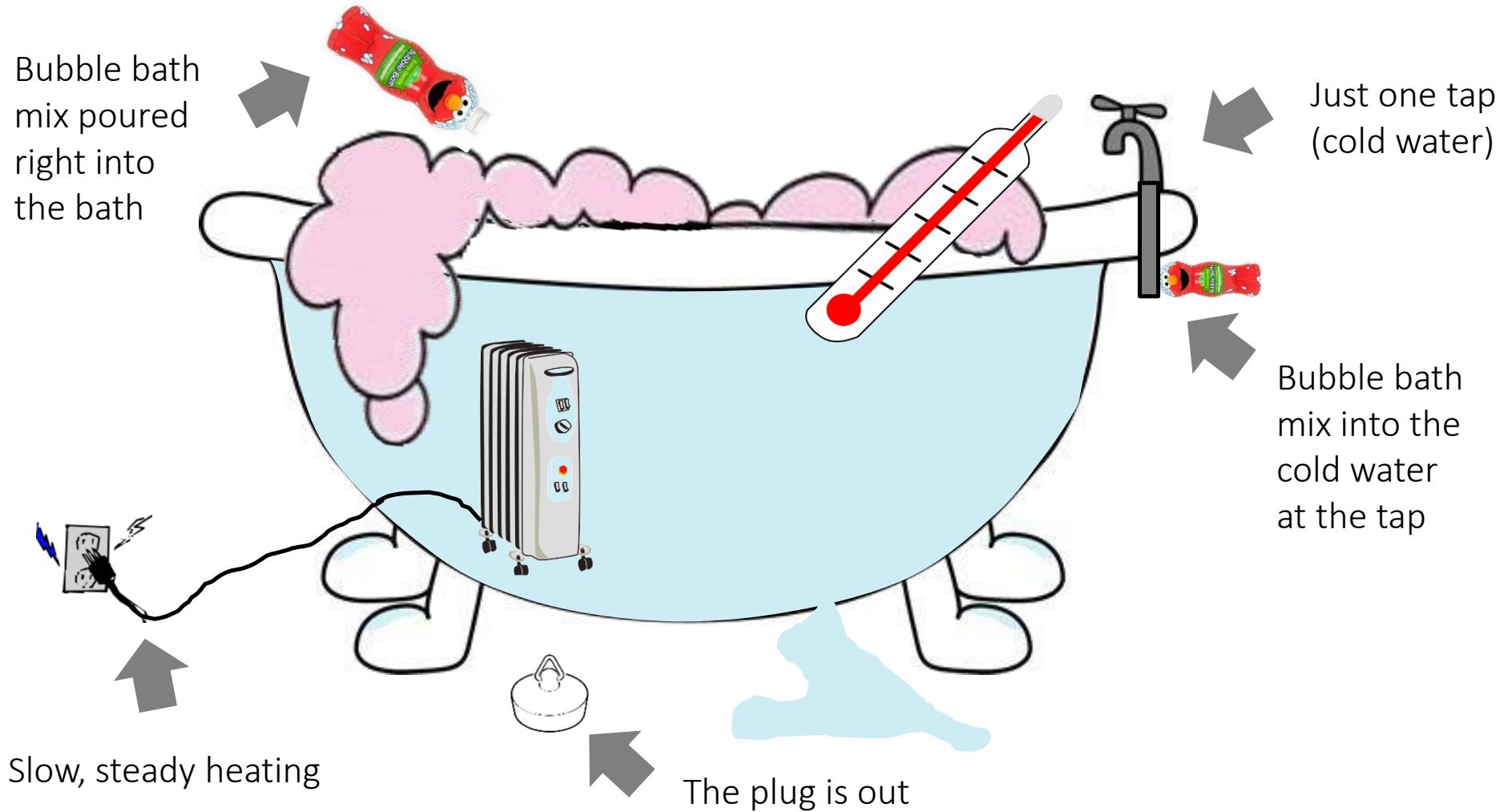


An ideal workforce is like a nice bath



- Enough workers
- With skills
- With experience

Flows into, and out of, the bath



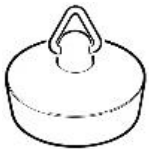
Sources of demand in the workforce



Workforce growth (the bathtub needs to be more full)



Skill growth (need more bubble bath mix to get a frothier bath)



Replacement demand (water, heating and soap to replace that lost down the plughole)

What do we want to know?

- How long do employees stay around for in an industry?
- How likely are new employees to stick around?
- What age are employees when they enter an industry?
- How are these answers impacted by age, gender or ethnicity?

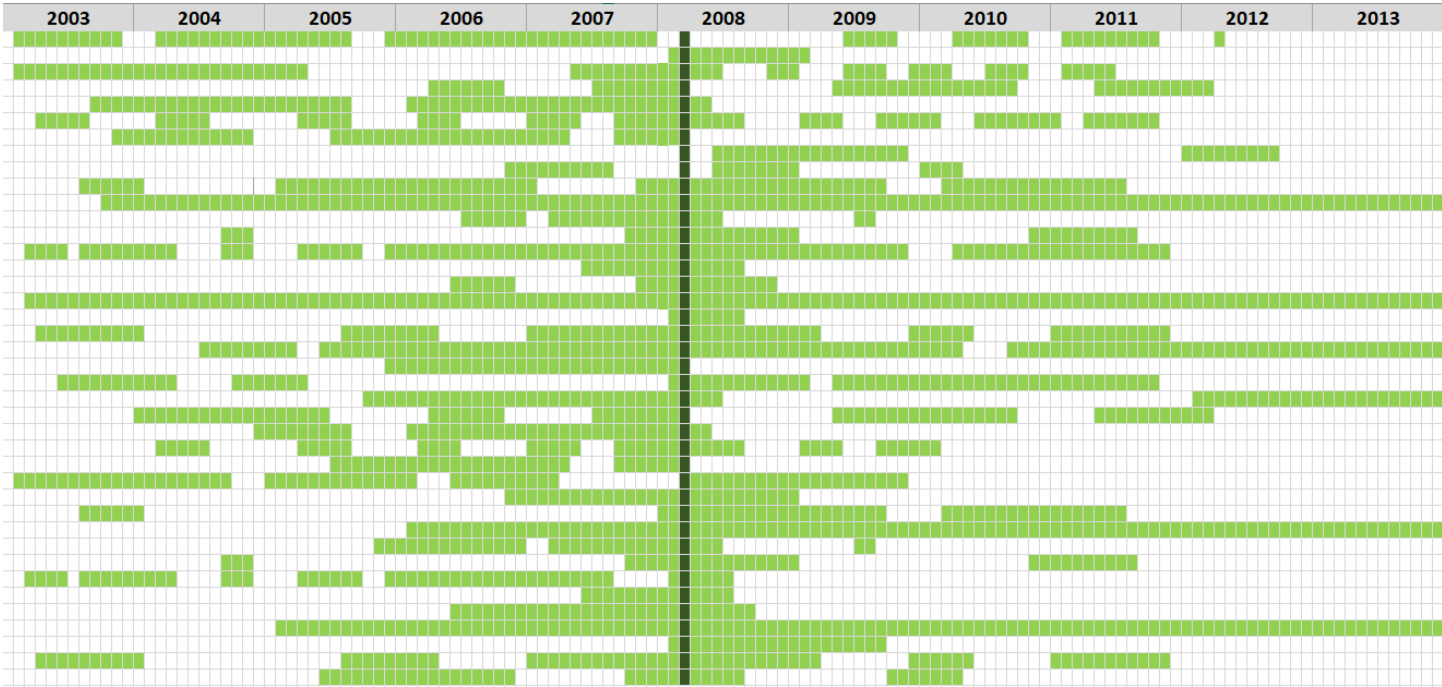


Our approach

Illustrative only
(not derived from
IDI data)

What we are analysing

Workforce at a point
in time = March 2008

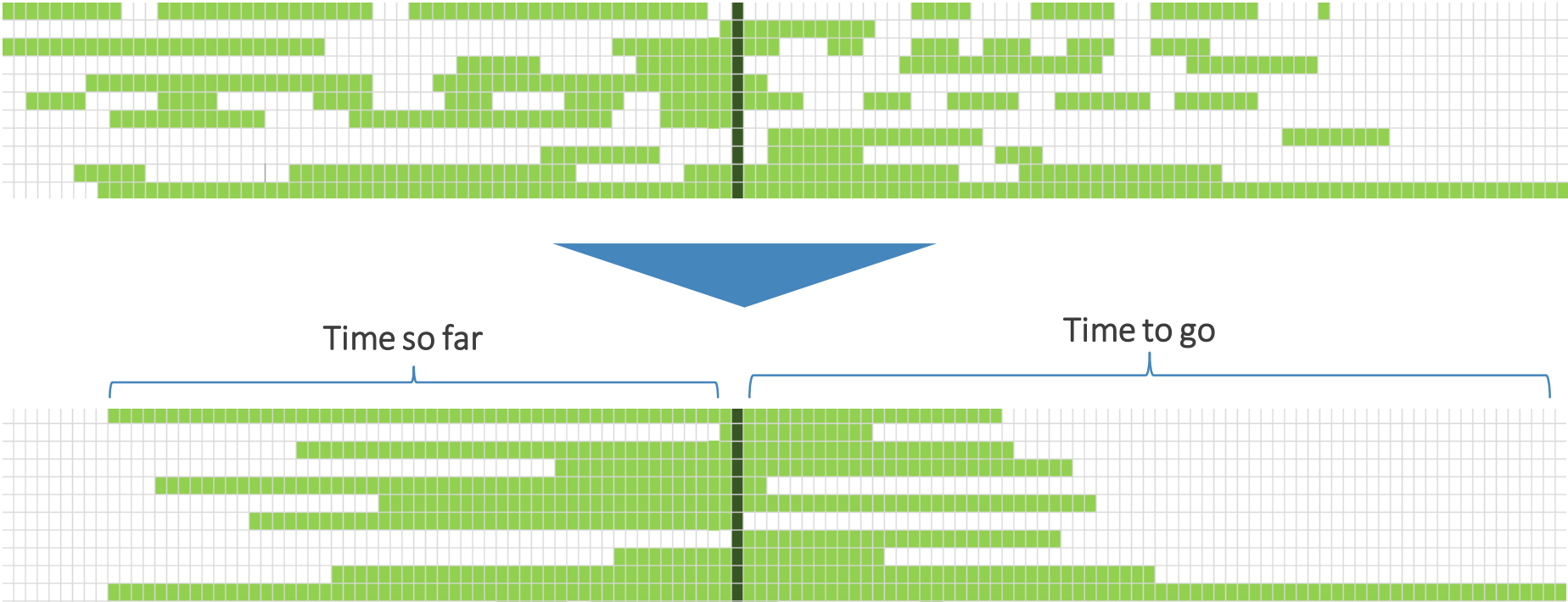


← This person works
intermittently in the
industry

← This person works
continuously for 10+
years in the industry

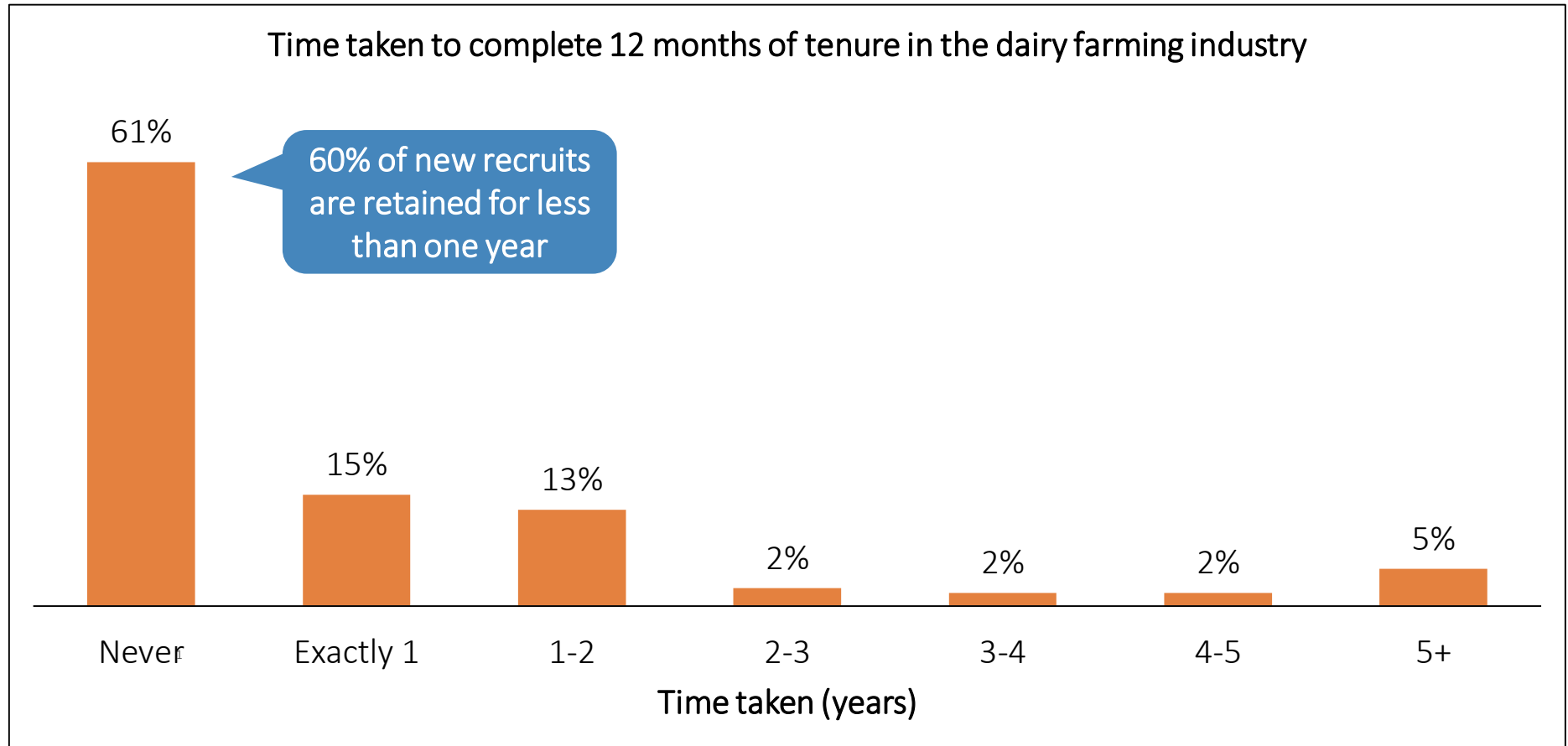
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Tenure as a measure

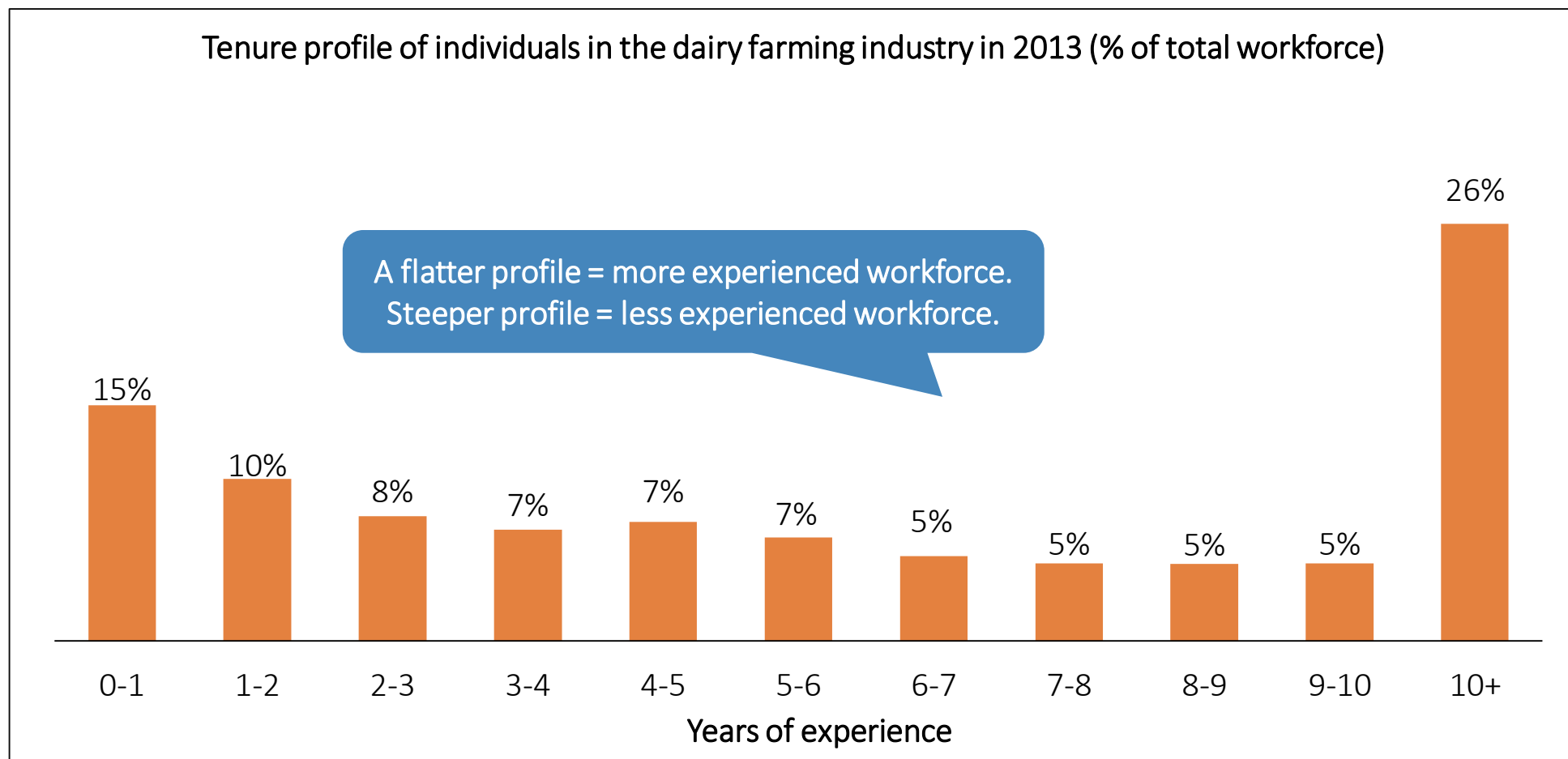


Results I: Dairy farming

How long does it take someone to work for 1 year?



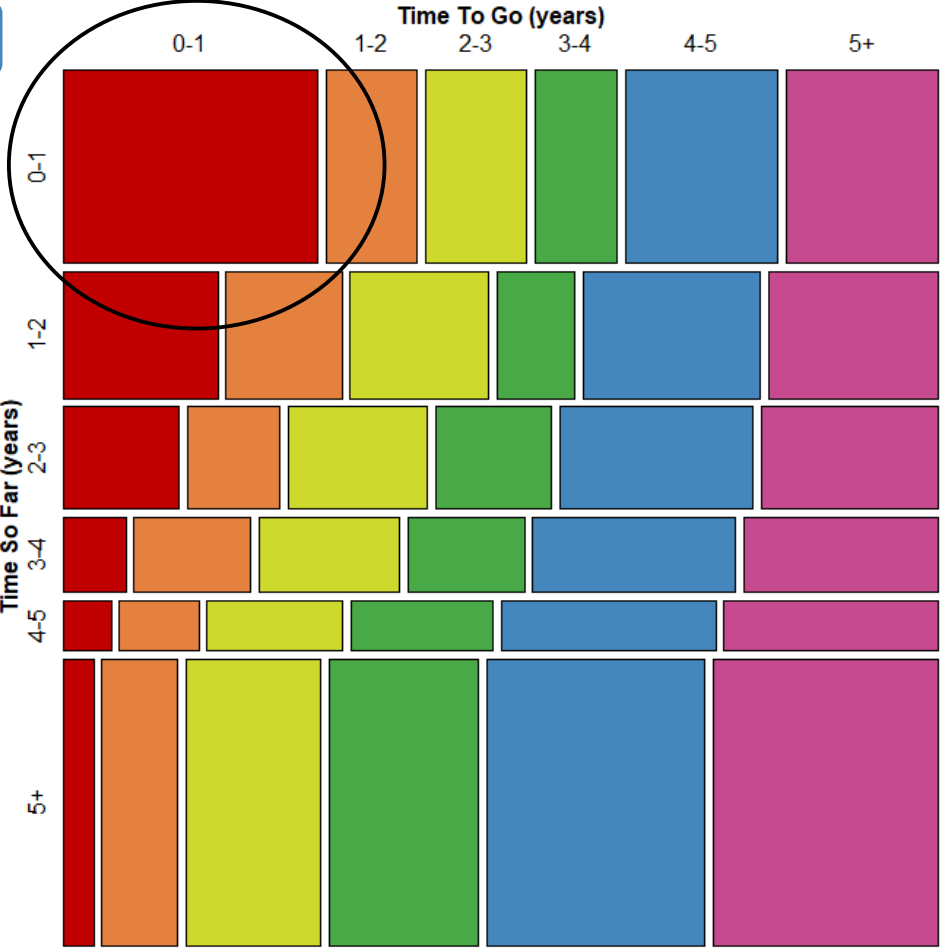
How much experience does the workforce have?



Illustrative only
(not derived from
IDI data)

Segmentation of workforce

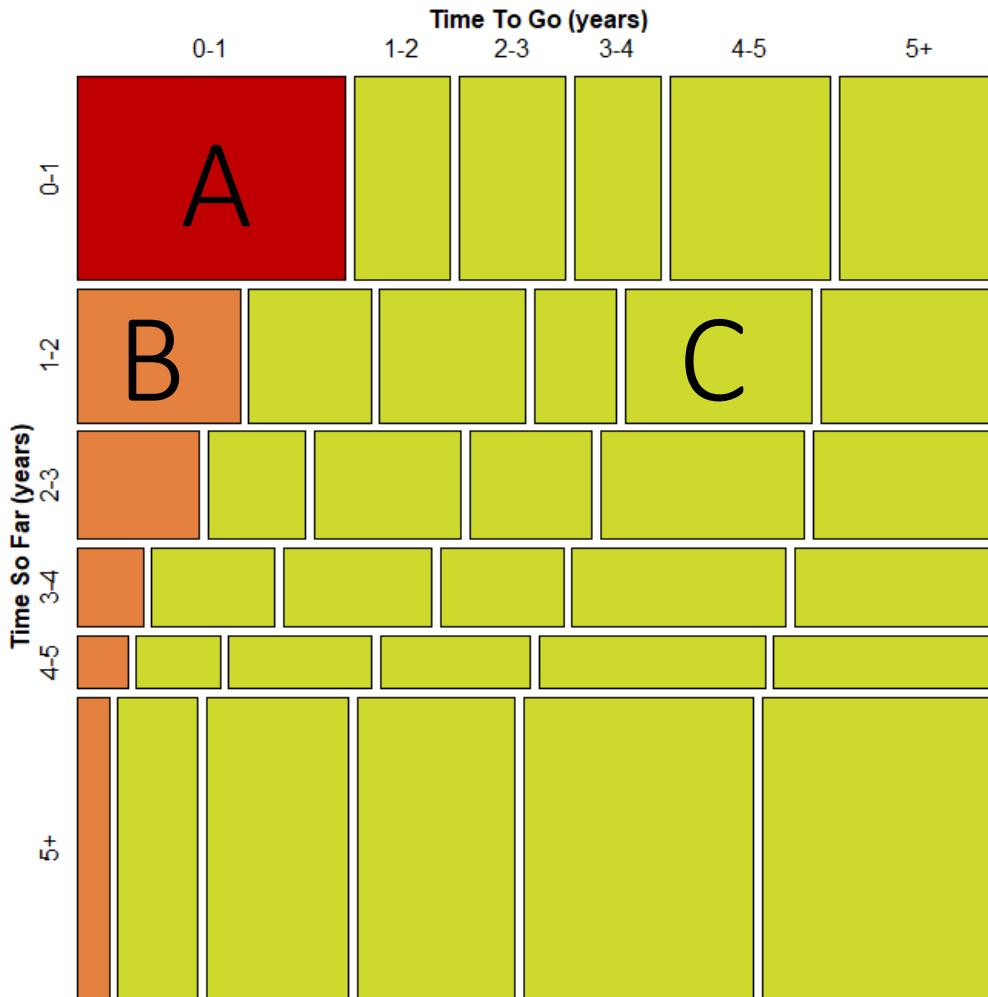
“Casual segment”



“Core workforce”

Replacement rate

Fabricated data for illustration purposes only – this image is not derived from IDI data



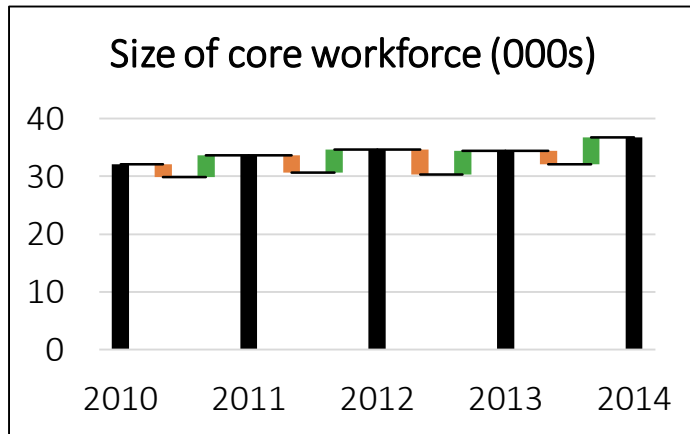
$$\text{Total net replacement rate} = \frac{A+B}{A+B+C}$$

This is the net replacement of individuals with any level of tenure so far.

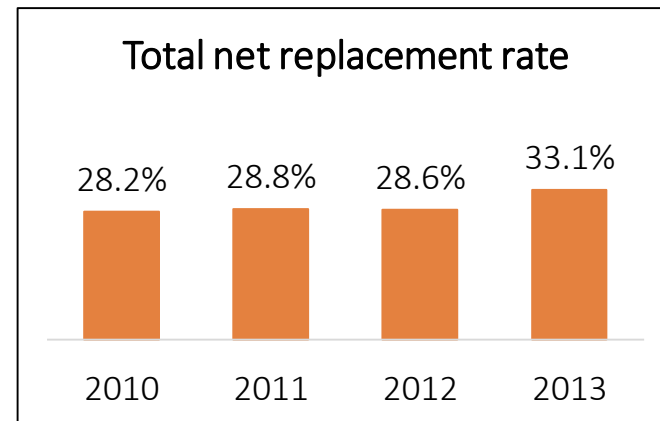
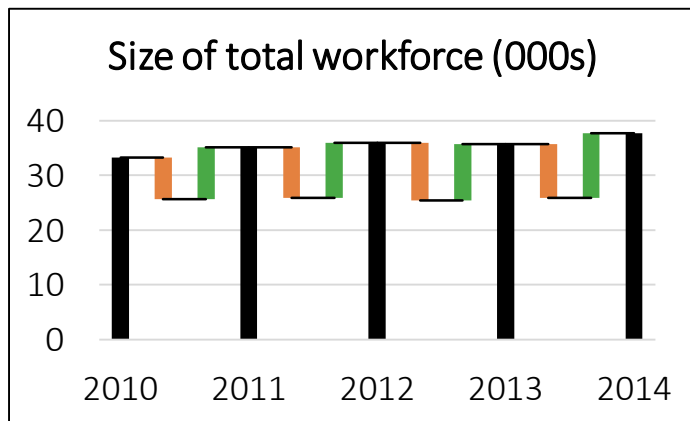
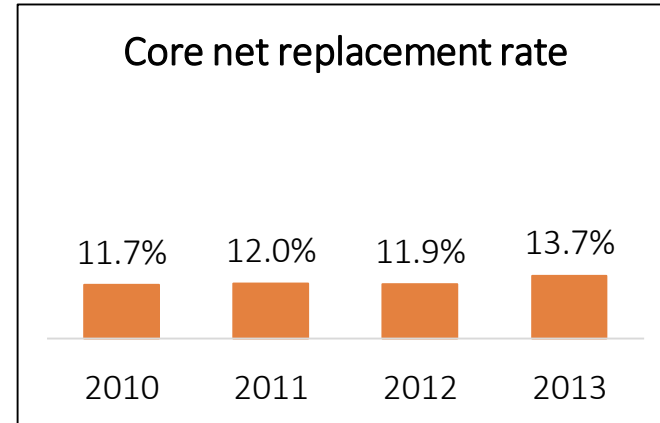
$$\text{Core net replacement rate} = \frac{B}{B+C}$$

This is the net replacement of individuals that have accumulated more than one year of tenure so far.

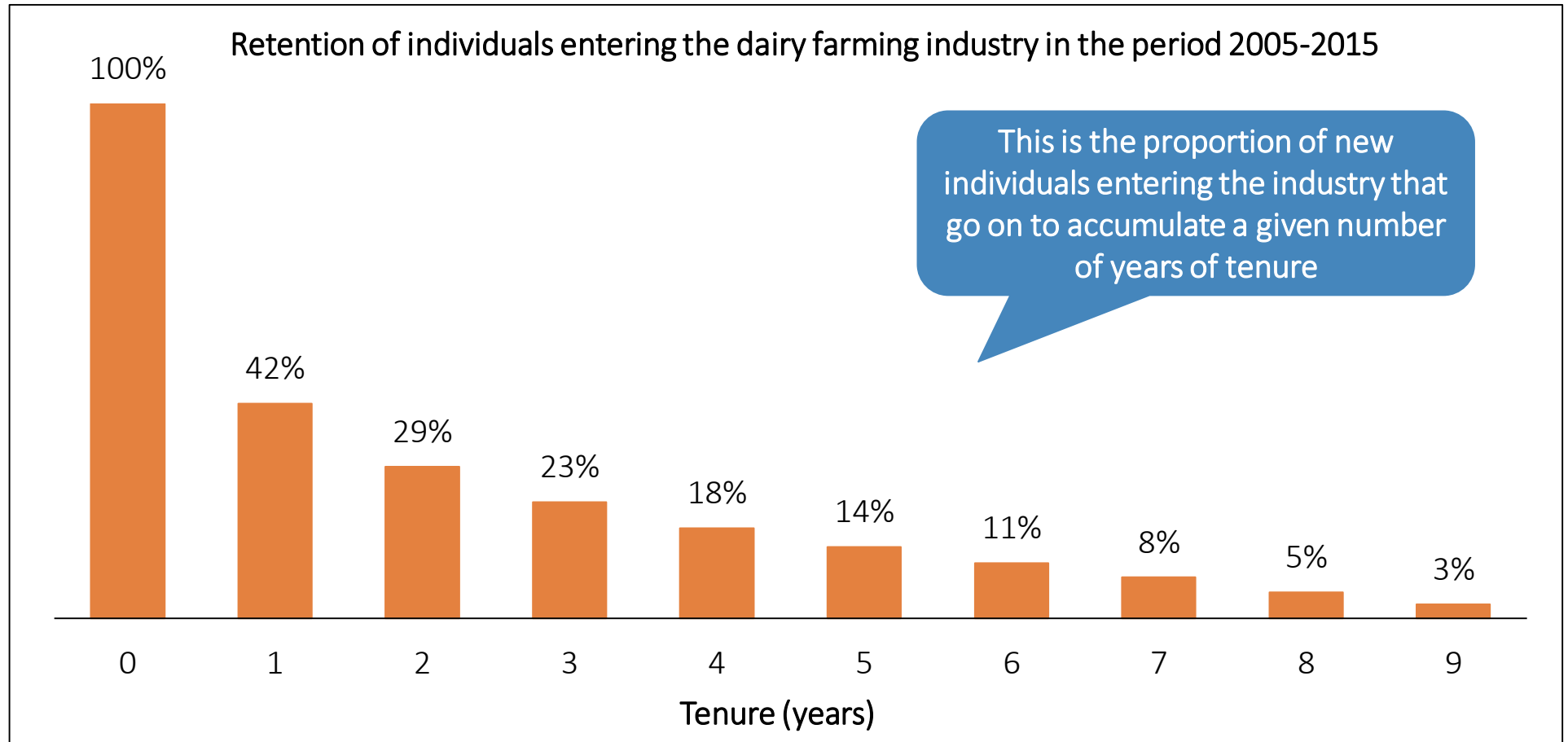
Net replacement rates in the dairy farming industry



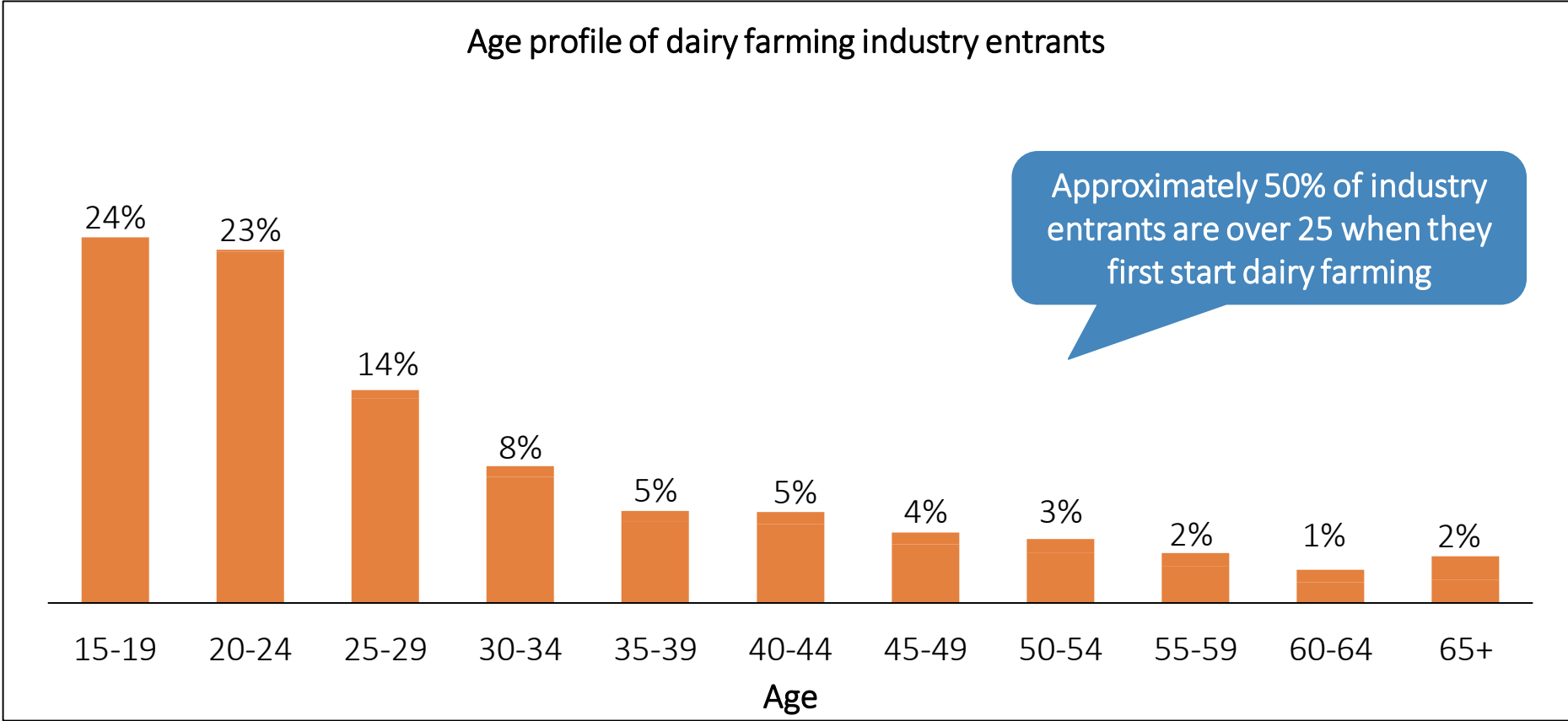
■ Workforce ■ Leavers ■ Recruits



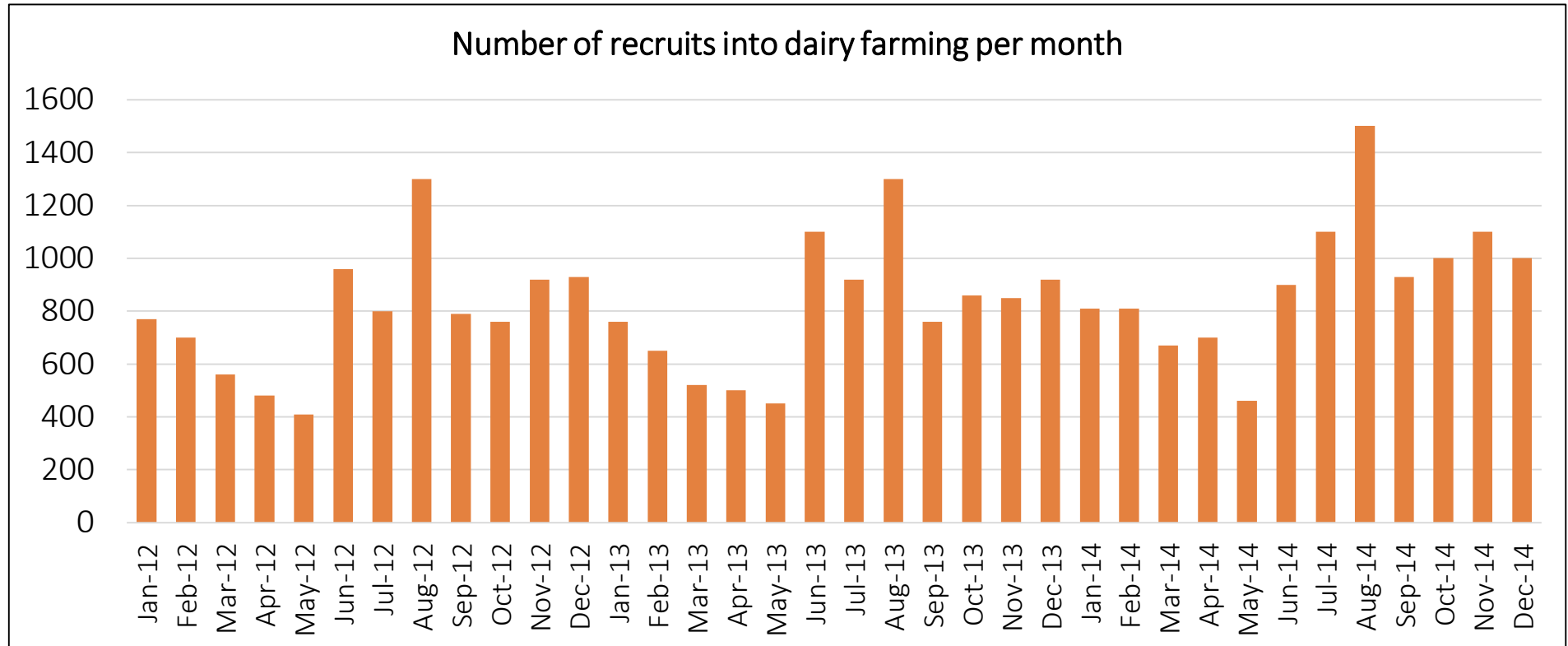
Cohort retention



Age at first employment

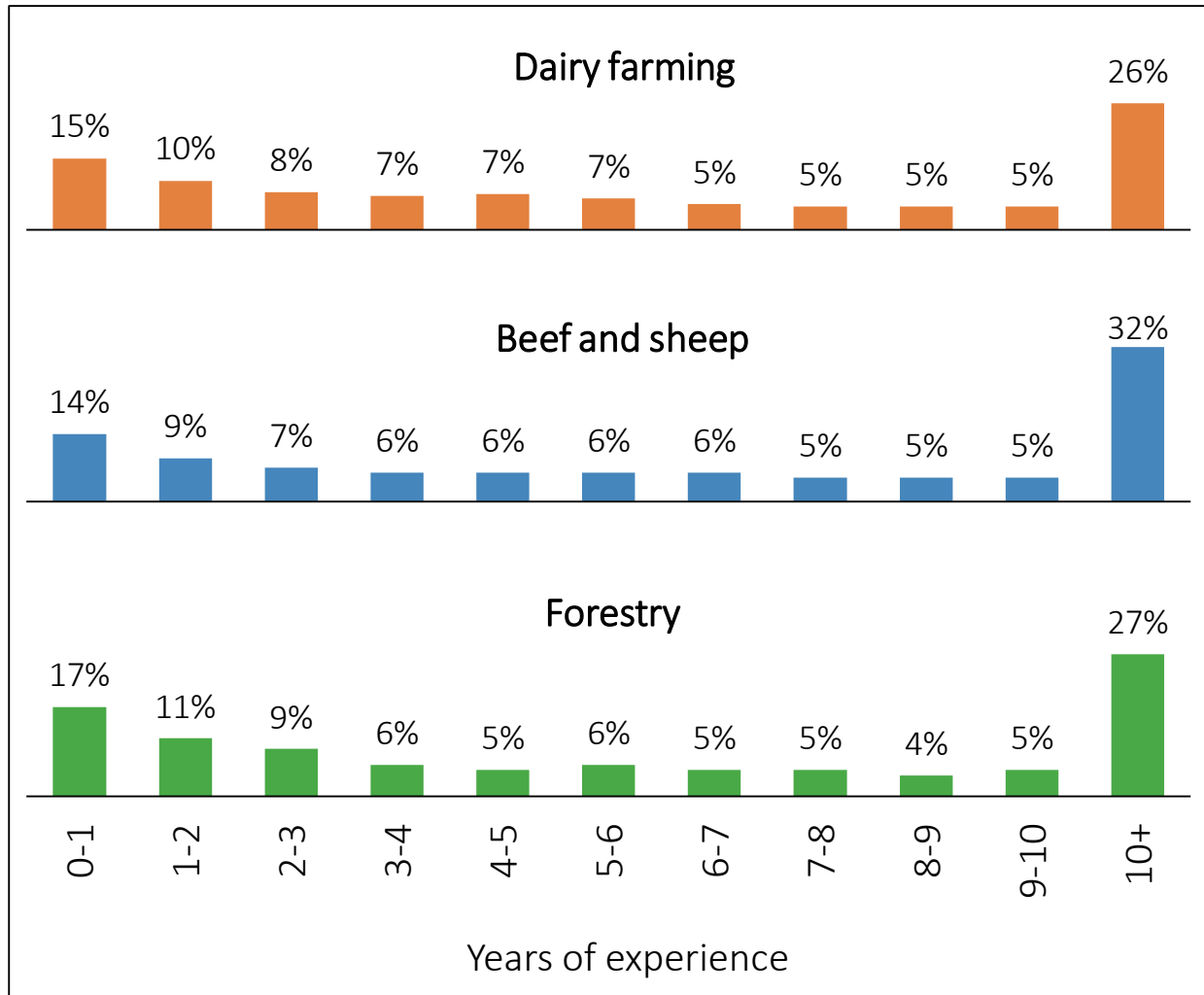


Month of initial employment

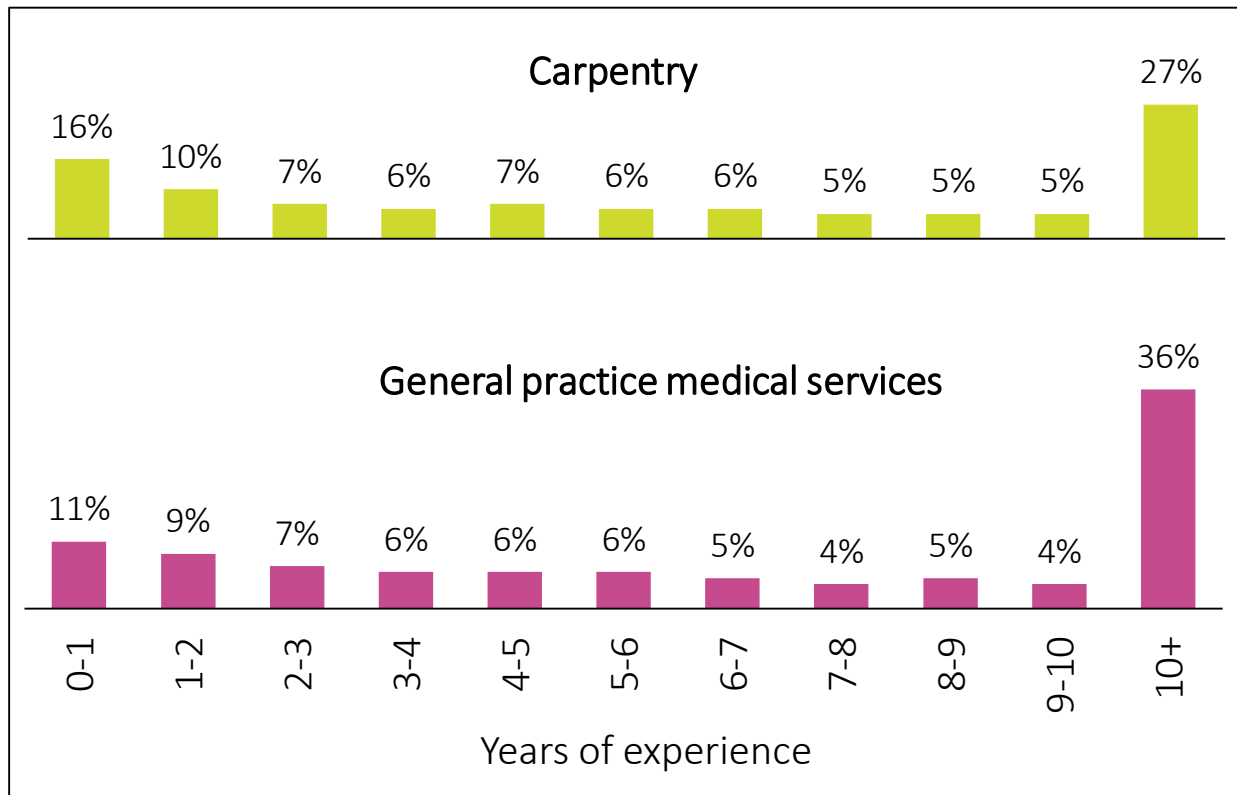


Results II: Comparison with other industries

Comparing tenure profiles between industries



Comparing tenure profiles of non-primary industries



Conclusions

So what can we conclude from this?

- Tenure is a useful measure of movements to and from an industry.
- We need a robust measure of replacement rate.
- Retention of new recruits is low.
- A large number of new recruits are aged 25+.
- Further work is required to refine this measure.

