



Determinants of Innovation Novelty: Evidence from Australian administrative data

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Key findings

We examine firm-level innovation in Australia over the period 2005-2016. We focus on the novelty of innovation and consider both firms who innovate and those who do not. For innovating firms, we consider innovation ranging from ‘new-to-firm’ through ‘new-to-world’ innovation.

- We are the first paper in the literature to show the importance of a business focus on innovation in achieving higher orders of innovation novelty. We also show that business capability and skills in management, science and research and information technology are positively linked with a firm’s ability to undertake higher orders of innovation novelty.
- Exporting is correlated with higher orders of innovation novelty.
- We confirm results from previous studies on the importance of previous goods and services innovation, collaboration for innovation and research and development activity.
- We focus on all types of innovation including both product and process innovation.
- Ours is the first paper to provide evidence on innovation novelty for Australia.

What we knew

- Most previous research has focused on the determinants of whether firms innovate or not.
- However, the benefits of innovation differ dramatically if they are ‘new-to-firm’, ‘new-to-industry’, ‘new-to-country’ or ‘new-to-world’. Higher levels of innovation (‘new-to-country’ or ‘new-to-world’) have much greater potential to spill over to other firms and industries and create large productivity improvements.
- Previous research on Australia has focused exclusively on whether firms innovate or not and has not considered the key aspect of novelty.

What we do

- We use unique innovation data within the Business Longitudinal Analysis Data Environment (BLADE). The data come from the Business Characteristic Survey (BCS), an unbalanced panel of Australian firms over the financial years 2005–06 to 2015–16, coupled with administrative data from the Australian Taxation Office.
- The innovation questions in the BCS are based upon the Oslo framework, the OECD benchmark for innovation measurement (OECD, 2018).
- We use an ordered probit model to estimate which factors influence a firm’s propensity to innovate at different levels of novelty. We examine whether these factors differ by firm size and industry.



What we know now

Some of our findings are novel in the international literature. We use variables that have not been available in previous studies or consider variables that were not previously considered:

- Self-reported **business focus on innovation** is associated with higher levels of innovation novelty
- Self-reported use of **business skills** in:
 - Science and Research
 - IT professional
 - Business Management

are associated with higher levels of innovation novelty

- Firms that export are more likely to engage in higher levels of innovation novelty

We confirm results from previous studies that the following produce higher levels of innovation novelty

- Previous Goods and Services Innovation (persistent innovation)
- Collaboration on Innovation
- Research and Development activity

What this means for policy

- Programs which encourage and assist firms in improving their management and business skills may help to encourage innovation and higher levels of innovation.

Caveats

- Our results can not be interpreted as causal effects. Firms choose to innovate or not and these choices are correlated with other choices that the firm makes. Our results should be interpreted as associations between innovation novelty and other characteristics.

Where to now?

- Further research on innovation novelty using administrative data with matched survey data has great potential to improve our understanding of innovation and innovation novelty.

More information

- Get the full working paper at: https://taxpolicy.crawford.anu.edu.au/sites/default/files/publication/taxstudies_crawford_anu_edu_au/2021-09/complete_majeed_breunig_aug_2021.pdf
- We would welcome the opportunity to present our research to your team and to discuss potential joint research projects on related or similar topics.
- Contact us at robert.breunig@anu.edu.au or omer.majeed@anu.edu.au

References

OECD (2018). *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data. Fourth Edition.* Paris: OECD Publishing. In series *The Measurement of Scientific, Technological and Innovation Activities*. Available from <https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm>.