

SUPPORTING DOCUMENTS

Relating to 'The Landscape for emerging health and medical academic leaders in Australia' report



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The authors acknowledge the traditional peoples of the lands on which we live and work, paying our respect to their Elders, past and present.

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Preface

These supporting documents provide added detail and perspective relating to the findings of the 'The Landscape of Australian Health and Medical Higher Education' report. This includes additional methods and information relating to the demographics of the surveyed population, as well as narrative perspectives linked to the key recommendations suggested for the Commonwealth Government.

Additional methods

The survey consisted of demographic items, those from validated measures, and custom items particularly relevant to understanding aspects of the Australian academic workforce and their experiences. The survey was administered using the secure Qualtrics online platform. Ethical approval was provided for this study by the University of Melbourne Office of Research Ethics and Integrity (2023-24986-45923-6) with all participants provided plain language statements and consenting to participate.

To allow for comparisons to other workforces and across time, we employed many validated measures to assess mental health and wellbeing, including the short Effort-Reward Imbalance Scale¹, the Short Negative Acts Questionnaire², the Copenhagen Burnout Inventory³, the Patient Health Questionnaire 9 (PHQ9)⁴, the Generalized Anxiety Disorder 7 (GAD7)⁵, and the Perceived Stress Scale 4 (PSS4)⁶. Taken together, these survey items provide a reasonably detailed and reproducible indication of an individual's mental health and wellbeing, while not being too onerous; the survey averaged twenty minutes when trialed by our team and took a median seventeen minutes by national participants.

The primary analyses and subanalyses of this study were preregistered to support transparency, with data being made publicly available as part of a peer-reviewed publication. Qualitative responses were sought for two items, namely 'Please share ways in which your primary university affiliation is effectively supporting your wellbeing and career development' and 'Please suggest areas where your primary university affiliation could improve its support towards your wellbeing and career development', together providing information on what universities are doing well and what they could be doing to improve. These responses were analysed through a process of content analysis to create thematic categories.

Analyses were replicated by two or more individuals, with discrepancies clarified openly where arising. In addition to this data going towards the national study, participating sites can request that their site-specific data be collated and shown in comparison to the national averages; in this way, we are efficiently guide policy and decision making as well as enable advocacy at national and local levels.

First perspective

The Australian workforce

Higher education plays a central role in growing and developing the Australian workforce, contributing significantly to the nation's economic prosperity and global competitiveness. An educated, well-resourced and skilled workforce is essential for national productivity and adaptability in a changing global environment. This becomes ever more important when addressing priority areas including the need for advanced manufacturing and a green transition⁷.

Australia's international ranking on the Harvard-led economic complexity index (ECI), a measure of the productive capabilities of large economies, has fallen consistently in recent decades (See Figure), ranking behind many comparable Commonwealth nations⁸. The ECI has been recognised by the Australian government as a key indicator of a resilient and sustainable nation, as part of Australia's first wellbeing framework⁹. Higher education, including teaching and research, will be required to grow the skilled and sustainable workforce needed to improve performance on this measure.

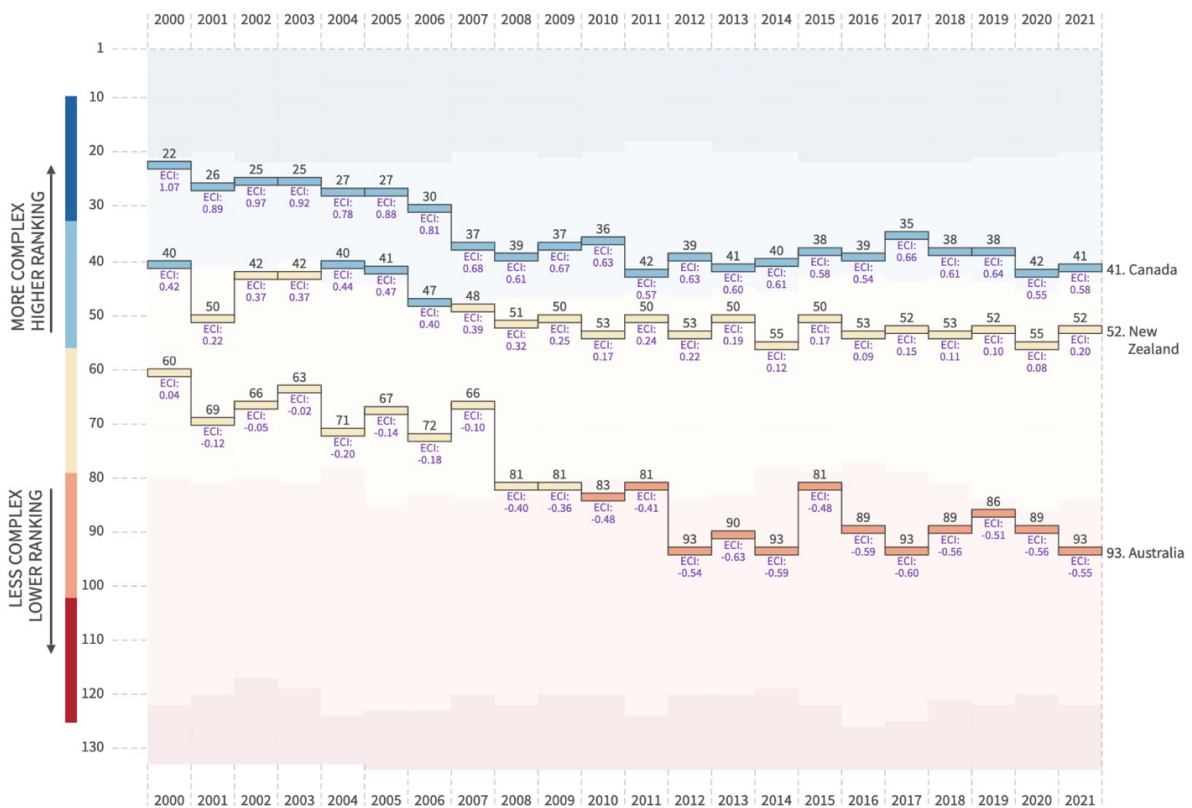


Figure: The Economic Complexity Index (ECI) ranking of Australia.

Through the last twenty years, Australia is shown to have decreased in the international economic complexity index ranking to a low of 93.

'Research is the key to this and Australia can't afford to be left behind – It must be done here, and built upon here, to ensure economic growth, societal well-being, and national security.'

The Honorable Ed Husic MP, Minister for Industry and Science, 2023⁷

As an example, health and medical research is central to improving the capabilities of Australia's healthcare workforce; nearly half of Australia's health and medical research occurs at higher education providers⁴, with many partnering with healthcare facilities, services and manufacturers.

A consultancy document prepared by KPMG, *The Economic Impact of Medical Research in Australia*¹⁰, estimated that through a fifteen-year period, Australian health and medical research delivered 78 billion AUD in net gains to the Australian economy. This includes enabling a larger and more productive workforce from which returns are set to continue to accrue over time. Many academics engaged in health and medical research contribute to teaching and training healthcare professionals, fostering an engaging and dynamic learning environment and the development of the health and medical workforce directly.

Contributions of this nature are made for priority areas other than health and medicine, including energy, food security and digital technologies; these contributions require higher education be resourced, and most importantly, that an academic career be seen as worthwhile.

Importantly, given the Australian higher education landscape, few academics would advise someone to join the profession; in this study, only 16.8% (111/660) said that 'Yes', they would advise someone to become an academic, being even lower for research focused academics at 11.7% (44/376). If these responses were seen for other professions, they could rightly be viewed as professions in crises.

Taken together, higher education appears a cornerstone in the growth and development of the Australian workforce. If well resourced, it provides individuals with the necessary skills and training to take on valued careers, and contributes to prosperity, resilience and sovereign capabilities¹¹. At odds with this central role, many academics employed in Australia would not recommend that others pursue the profession. By investing in higher education, Australia can move towards a more sustainable and advanced workforce capable of navigating challenges in the future.

Take home – By better managing the higher education landscape, Australia can ensure that it moves towards economic prosperity and resilience, with a skilled and capable workforce.

Second perspective

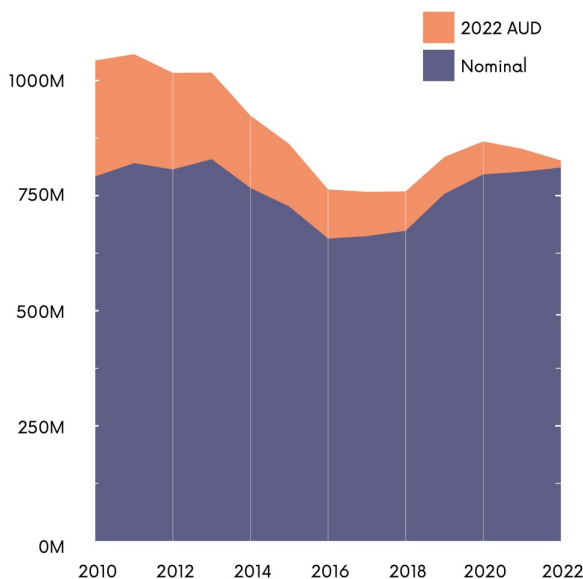
National research funding

Australian academics with research roles have traditionally relied on competitive grant funding to support these activities. The sources of this funding has largely been the Australian Research Council (ARC), which supports research across various fields, as well as the National Health and Medical Research Council (NHMRC), which supports and oversees health and medical research projects specifically. Importantly, allocated funding from the ARC and NHMRC has plateaued or reduced in real terms in the past decade (See Figure).

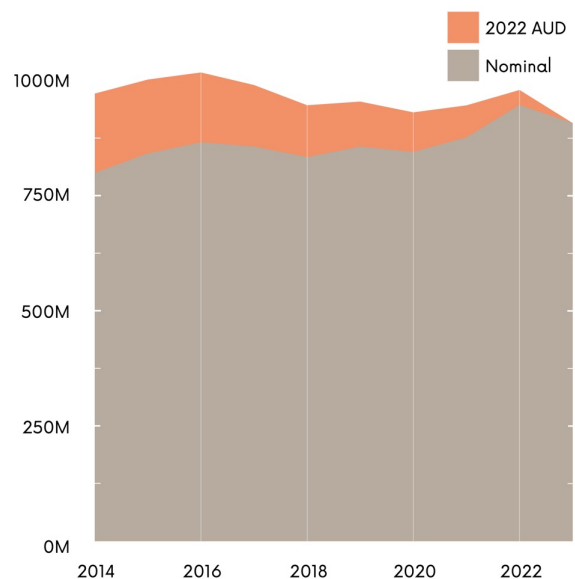
Based on public data, and observing a three-year funding cycle¹², the three-year centred moving average of nominal funding from the ARC was 791M for 2010, which adjusted for CPI equates to 1,044M in 2022 AUD¹³. In adjusted value, ARC funding has decreased markedly, with the three-year average falling to approximately 826M (2022 AUD) for 2022. This represents a decrease of 20.8% and a funding gap of >215M (2022 AUD). The relevant sources, calculations and the full data series are shared in an appendix at the back of this document for reproducibility.

Based on available data for the NHMRC¹⁴, the two-year trailing moving average of nominal funding was 796M for 2014 (812M and 781M for 2013 and 2014, respectively), which adjusted for CPI equates to a two-year average of 968M (2022 AUD). In adjusted value, NHMRC funding has plateaued, with the trailing two-year average staying at approximately 904M (2022 AUD) for 2023, representing a decrease of 6.6%.

a. Three year average ARC funding by commencement year



b. Two year average NHMRC funding by committed year



National funding could reasonably be expected to match growth in the Australian population, or the gross domestic product (GDP); the Australian population increased from approximately 22,000,000 to 26,600,000 between 2010 and 2023¹⁵, an increase of 21%, while Australia's GDP grew from 1.15 to 1.35 Trillion, an increase of 17%¹⁶.

As an example, if the ARC was able to allocate funding at levels that matched increases in the Australian population, the inflation adjusted three-year funding average would have risen from 1,044M to 1,262M (2022 AUD) between 2010 and 2023; this is considerably more than the 826M (2022 AUD) three-year average observed for 2022.

The dwindling research funding aspect of the higher education landscape likely colors many of the early and mid-career academic experiences detailed in this report, given that many have research focused roles or components to their work. This includes high levels of employment insecurity and a reliance on short, fixed term contracts. It may also contribute to the sentiment that Australian academics would not advise others to follow in their career path.

Asked to suggest three areas where their university could improve support for their wellbeing and career development, responses from Australian academics were dominated by suggestions related to job security, which for many remains contingent on national funding.

There are other national research funding opportunities, most notably the Medical Research Future Fund (MRFF). This has not funded the same style of research grants and fellowships as other funders, having more of a 'mission' focus. Early and mid-career academics often rely on fellowships to become established and create some sense of career stability. MRFF schemes targeted towards early career academics have had a staggering low success rate (2.9%)¹⁷ compared to comparable ARC (19.7%)¹⁸ and NHMRC (14.3%)¹⁹ schemes, showing the high demand and complexity in navigating new research funding opportunities.

Collaborative arrangements with business and philanthropy supplement Australian research as well, as do international student fees and grants from local and foreign governments, although these may at times conflict with what has traditionally been seen as the priority of Australian higher education (See Third Perspective).

Take home – Major research funding opportunities have decreased or plateaued in real terms, negatively impacting research careers and productivity.

Third perspective

The priority of Australian higher education

Traditionally, one of the main priorities of the higher education sector has been service to the Australian community; this includes providing advanced education, performing valued research, and acting as a source for considered and independent perspectives on societal issues.

This was maintained in part through a reliance on Commonwealth Government grants and funding for teaching and research activities for which universities were accountable to the government. This dependency has shifted in recent decades, as described, with government funding for science, research and innovation reaching historical lows.

In this funding vacuum, alternative streams of income have been pursued, including from businesses and philanthropy. These private actors may have differing priorities to that of the general Australian community, potentially funding special interests. As a historical example, accepting money from tobacco companies was widely seen as acceptable for academics until the 1990s, when revelations were made about the way the industry had hidden data on the risks of smoking from the public, with industry-funded science to prop up health and safety claims²⁰. Although many universities no longer accept funding from the tobacco industry, as research of this nature would be against the public interest, this is complicated by the creation of industry-backed foundations and finance avenues²¹. Private funding for research at Australian universities should ideally be made more transparent and not be depended upon by the sector.

These changes in funding incentivise certain activities at Australian universities. As an example, attracting more international students would be a financially responsible move and could be pursued by a university increasing one or more of their international rankings relative to other universities, or by renovating campuses; this may be seen as more worthwhile an activity than attracting domestic students, given that training domestic students comes with fewer financial benefits²².

This may in part explain the most recent enrolment data, where overall enrolments at Australian universities fell 3.2% for 2022 compared to 2021, with an increase in international students (+1.9%) partly offsetting a decrease (-5.1%) in domestic student numbers.²³

International engagement remains a key aspect of higher education. This includes international students as well as funding from foreign businesses and governments, necessitating the completion of foreign interest and conflict of interest disclosures. The Commonwealth Government has been engaging higher education providers regarding the risks and adverse impacts that some international engagements could have on Australian people and values²⁴.

Importantly, many academics are attracted to the profession by the opportunity to serve their communities, through research, teaching or other activities. With this transition towards increasing research and education funding coming from private interests or foreign sources, many may be less disaffected with the profession. This may in part explain the findings of our study that few academics would recommend others join the profession; 29.1% felt that this was a good time to begin an academic career at their affiliated university, and only 16.8% said that they would advise someone to become an academic.

Maintaining the Australian public's view of the higher education sector as a valued national asset should be a focus going forward, and may be best served by recommitting to the traditional priority of service to the Australian community.

Take home – Changes in government funding may incentivise shifts away from the traditional priority of higher education as a service to the community.



Forth perspective

Independent audits and trust

Many activities performed within the higher education system rely on adherence to ethical and professional standards. These are needed for many reasons and together cultivate a culture of excellence, accountability and responsible conduct. As an example, researchers are expected to conduct themselves with honesty and integrity, accurately reporting methods, results, and interpretations without fabricating or falsifying data. These standards are well recognised by the general public, being a key aspect of maintaining public trust in processes and institutions.

As detailed by a recent two-part report from the Australia Institute, Australia is one of the few developed countries that does not have a research integrity body capable of auditing research activities and investigating research misconduct^{25,26}. Here, instead we rely on higher education providers and research institutes to investigate instances and reports of research misconduct by their own researchers. This provides a great degree of autonomy, although self-regulation creates conflicts of interest as they may prioritise their own interests over broader societal or ethical considerations. Further, institutions have considerable discretion to decide whether to investigate alleged misconduct, resulting in inconsistent data on the nature and frequency of research misconduct in Australia.

'Investigations that do take place can be entirely internal, their findings do not have to be made public, and the use of the term 'research misconduct' to describe major breaches of the [Australian Code for the Responsible Conduct of Research] is optional.'

Kristen Scicluna and Richard Denniss²⁵



In this survey, where respondents are anonymous, we report levels of research misconduct that are confronting. Inappropriate research practices range from those with a subjective aspect to those that objectively have no place in Australian research. As an example, inappropriate authorship practices can be subjective, representing disagreement between authors on how individuals should be credited with authorship on a research publication or output, although may also be objectively inappropriate in the case of gift or ghost authorships.

Taking this into consideration, inappropriate authorship practices were commonly observed by respondents (52.7%), while more serious and purely objective inappropriate practices were less common; these include observations of falsification of data (2.7%), fabrication of data (3.4%), plagiarism (8.9%), and conducting research without or outside of appropriate ethical approval (14.8%). These findings may be viewed favorably when compared to the rates of these practices reported internationally, although many would view these rates as requiring a firm stance and committed action to maintain ethical standards.

Importantly, responses elsewhere in our survey suggest that Australian academics are generally not comfortable raising concerns about misconduct with their employer, with only 32.0% saying that they felt comfortable raising concerns about instances of bullying, harassment and/or discrimination. These reservations may be held for research misconduct as well, potentially leading to under-reporting and a lack of meaningful investigation of these practices.

These instances are influenced by the higher education landscape; authorship practices may be linked to commodification of authorship in a funding limited environment, with authorship being a primary measure of productivity. Further, the fierce competition for research funding that characterises research at Australian higher education providers may drive some to compromise their integrity, especially given a perceived or real lack of investigative oversight. This may be in part addressed by creation of an integrity watchdog, ensuring ethical and professional standards are met and maintaining the trust in relevant institutions.

'Australian researchers are some of the best in the world, but they're being let down by the sector's inability to prevent misconduct.'

Dr Monique Ryan, Independent MP for Kooyong²⁵

Take home – Australian research may benefit from the creation of a research integrity body, able to investigate allegations of research misconduct independently.

Demographic details, part one of two

State or territory	Counts	Percentage
ACT	81	(12.3%)
New South Wales	116	(17.6%)
Queensland	48	(7.3%)
South Australia	125	(18.9%)
Tasmania	28	(4.2%)
Western Australia	5	(0.8%)
Victoria	257	(38.9%)
Gender		
Male	168	(25.5%)
Female	469	(71.1%)
Non-binary or other	8	(1.2%)
Prefer not to say	15	(2.3%)
Age		
26-30 years	70	(10.6%)
31-35 years	147	(22.3%)
36-40 years	161	(24.4%)
41-45 years	107	(16.2%)
46-50 years	73	(11.1%)
>50 years	100	(15.2%)
Full-time or part-time		
Full-time	496	(75.2%)
Part-time	164	(24.8%)
PhD or equivalent degree		
Yes	623	(94.4%)
In progress	37	(5.6%)
Years since completion of PhD or equivalent degree		
0-5 years	371	(56.2%)
6-10 years	194	(29.4%)
>10 years	57	(8.6%)
NA or missing data	38	(5.8%)

Demographic details, part two of two

Contract type	Counts	Percentage
Continuing	272	(41.2%)
Fixed term	379	(57.4%)
Prefer not to say	9	(1.4%)

How long have individuals been employed at their affiliated University	Counts	Percentage
Less than 6 months	39	(5.9%)
6 to 12 months	57	(8.6%)
13 to 24 months	91	(13.8%)
More than 24 months	473	(71.7%)

Role type	Counts	Percentage
Research focused	376	(57.0%)
Teaching focused	46	(7.0%)
Research and teaching	212	(32.1%)
Clinical and academic	9	(1.4%)
Other	17	(2.6%)

Caring responsibilities	Counts	Percentage
Yes	332	(50.3%)
No	321	(48.6%)
Prefer not to say	7	(1.1%)

Disability and/or mental health condition reported	Counts	Percentage
Yes	168	(25.5%)
No	460	(69.7%)
Prefer not to say	32	(4.8%)

Appendix – National survey question set

1. Please select the Australian university for which you are primarily affiliated. Please make sure you have made the correct selection. [Multichoice]
2. Are you affiliated with a health or medical faculty, or carry out health or medical related research or teaching? [Yes, No]
3. What is the nature of your academic employment at your primary University affiliation? [Research focused role, teaching focused role, combined teaching and research role, combined clinical and academic role, other (please specify)]
4. Do you have a PhD or equivalent (MD, EdD etc.) degree? [Yes, Currently studying towards this level of qualification, No]
5. Accounting for career interruptions, how many years full-time equivalent, have you been working in academia since the conferral of your PhD or equivalent degree? (Please include decimals where relevant, such as 1.5 years) [Text entry]
6. On the academic scale, what is your employment level at your primary University affiliation? [Level A, Level B, Level C, Other scale (Professional, Specialist), Prefer not to say, Other (Please specify)].
7. Which of the following best describes your gender? [Man or male, Woman or female, Non-binary or another gender, Prefer not to say, Prefer to self-describe (Text entry)]
8. Which age range do you fall into? [25 years and under, 26-30 years, 31-35 years, 36-40 years, 41-45 years, 46-50 years, Over 50 years]
9. With which race, ethnicity, or origin do you most identify? [Australian Indigenous, Aboriginal or Torres Strait Islander, East Asian, South Asian, South-East Asian, Black or African American, Hispanic, Latin or Spanish Origin, Middle Eastern or North African, Pacific Islander or Māori, White or Caucasian, Prefer not to say, Other (Please specify)]
10. How would you describe your sexual orientation? [Heterosexual or attracted to another gender, Gay, Lesbian or attracted to the same gender, bisexual or attracted to multiple genders, questioning or not sure, prefer not to say, I use a different term (Please specify)]
11. How are you employed by your primary University affiliation? [Full time, Part time (Please specify full-time equivalent from 0-1, where 1 day/week is 0.2)]

12. How long have you been employed by your primary University affiliation? [Less than 6 months, 6 to 12 months, 13 to 24 months, More than 24 months]

13. Are you on a casual, fixed term, or continuing contract at your primary University affiliation? [Continuing, Fixed-term, Casual, Prefer not to say]

If fixed-term for above, how many months remain on your current contract? [Less than 6 months, 6 to 12 months, 13 to 24 months, More than 24 months]

If fixed-term for above, at the end of your current fixed term contract, do you expect to be renewed or employed in a new role at your primary University affiliation? [I expect to be renewed or have a new role, I do not expect to be renewed or have a new role, I'm not sure, Prefer not to answer]

14. How many hours of overtime do you work at your primary University affiliation in a typical week? (e.g. how many hours beyond your contracted ~40 hours if full-time employed)

15. Are you compensated for your overtime work, either financially or through time in lieu at your primary University affiliation? [Yes, No, Prefer not to say, In part (Please specify)]

16. Do you have any physical/mental health conditions, disabilities, or impairments? [Yes, No, Prefer not to say]

If yes to physical/mental health conditions, disabilities or impairments, do you experience barriers or limitations in your day-to-day activities related to any of your physical/mental health conditions, disabilities, or impairments? [Yes, No, Prefer not to say]

If yes to physical/mental health conditions, disabilities or impairments, how accommodating is your primary University affiliation to the needs of individuals with physical/mental health conditions, disabilities, or impairments? [Very accommodating, Somewhat accommodating, Not sure, Somewhat unaccommodating, Very unaccommodating]

17. Do you have any caring responsibilities? [Yes, No, Prefer not to say]

If yes to caring responsibilities, what is the nature of your caring responsibilities? [Caring for children, Caring for adults with physical/mental health conditions, disabilities, or impairments, Caring for older adults, Other (Please describe)]

18. Do you currently feel supported by your supervisor to progress your career? [Not at all, A little, Quite a bit, Very much so]

These questions relate to the overall workplace culture experienced at your affiliated University

19. How satisfied are you with the workplace culture at your primary University affiliation? [Very satisfied, Somewhat satisfied, Neither satisfied nor dissatisfied, Somewhat dissatisfied, Very dissatisfied]

20. Do you agree that your workplace supports a culture of: Career and professional development, Collaboration (internally, nationally, and internationally), Collegiality, where colleagues support each other, Diversity and inclusion, Open access publication, Publishing high quality research, Research integrity, Respect and responsiveness to concerns, Work-life balance. [Answers are given on a five-point scale of Strongly disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, Strongly agree]

21. Overall, do you think your workplace culture is improving? [Yes it is improving, No it is staying the same, No it is getting worse, Not sure, Prefer not to answer]

22. How satisfied are you with the leadership and management of your workplace? [Very satisfied, Somewhat satisfied, Neither satisfied nor dissatisfied, Somewhat dissatisfied, Very dissatisfied]

23. How do the following statements correspond with your views about the nature of your job? This is a good time to begin an academic career at my affiliated University, This is a good time to begin an academic career in my field more generally, I would advise someone to become an academic, I am thinking of leaving academia [Answers are given on a five-point scale of Strongly disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, Strongly agree]

24. To what extent do you agree with the following statements regarding the work you do at your primary University affiliation? I have constant time pressure due to a heavy work load, I have many interruptions and disturbances while performing my job, I have a lot of responsibility in my job, I am often pressured to work overtime, My job is physically demanding, Over the past few years, my job has become more and more demanding, I receive the respect I deserve from my superior or a respective relevant person, I experience adequate support in difficult situations, I am treated unfairly at work, My job promotion prospects are poor, I have experienced or I expect to experience an undesirable change in my work situation, My employment security is poor, My current occupational position...

adequately reflects my education and training, Considering all my efforts and achievements, I receive the respect and prestige I deserve at work, Considering all my efforts and achievements, my job promotion prospects are adequate, Considering all my efforts and achievements, my salary / income is adequate [Answers are given on a five-point scale of Strongly disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, Strongly agree]

25.[NAQ9] These statements describe your interactions with your co-workers. For each statement, please rate the frequency of which you experience the following interactions at your primary University affiliation: Someone withholding information which affects your performance, Spreading gossip and rumors about you, Being ignored or excluded, Having insulting or offensive remarks made about your person, attitudes or your private life, Being shouted at or being a target of spontaneous rage, Repeated reminders of your errors or mistakes, Being ignored or facing a hostile reaction when you approach, Persistent criticism of your work and effort, Practical jokes carried out by people you do not get along with [Answers are given on a five-point scale of Never, Occasionally, Monthly, Weekly or more often, Always]

26.In the past three years, which of the following forms of research misconduct have you observed at your primary University affiliation? Select all that apply: Conducting research without or outside of appropriate ethical approval, Fabricated data, Falsified data, Selectively reported data or findings, Falsified a resume, Not disclosed a conflict of interest, Plagiarised, Inappropriate authorship, Prefer not to answer, Other (Please specify)

27.Have you ever experienced bullying or harassment at your primary University affiliation? [Yes, No, Prefer not to say]

28.Have you ever experienced unwanted sexual behaviour at your primary University affiliation? [Yes, No, Prefer not to say]

29.Have you ever experienced discrimination at your primary University affiliation? [Yes, No, Prefer not to say]

30.Do you feel that if you had concerns relating to experiences of bullying, harassment and/or discrimination, that they would be appropriately acted on at your primary University affiliation? [Yes, No, Unsure, Prefer not to say]

31. At your primary University affiliation, would you feel comfortable speaking out about instances of bullying, harassment and/or discrimination without negative personal consequences from within your workplace? [Yes, No, Unsure, Prefer not to say]

32. PSS4 The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate how often you felt or thought a certain way: How often have you felt that you were unable to control the important things in your life? How often have you felt confident about your ability to handle your personal problems? How often have you felt that things were going your way? How often have you felt difficulties were piling up so high that you could not overcome them? [Answers are given on a five-point scale of Never, Almost never, Sometimes, Fairly often, Very often]
33. CBI In each case, please indicate how often you feel a certain way: How often do you feel tired? How often are you physically exhausted? How often are you emotionally exhausted? How often do you think: "I can't take it anymore"? How often do you feel worn out? How often do you feel weak and susceptible to illness? [Answers are given on a five-point scale of Never/Almost never, Seldom, Sometimes, Often, Always]
34. CBI In each case, please indicate how much you feel a certain way: Is your work emotionally exhausting? Do you feel burnt out because of your work? Does your work frustrate you? [Answers are given on a five-point scale of To a very high degree, To a high degree, Somewhat, To a low degree, To a very low degree]
35. In each case, please indicate how often you feel a certain way: Do you feel worn out at the end of the working day? Are you exhausted in the morning at the thought of another day at work? Do you feel that every working hour is tiring for you? Do you have enough energy for family and friends during leisure time? [Answers are given on a five-point scale of Always, Often, Sometimes, Seldom, Never/Almost never]
36. PHQ9 Over the last 2 weeks, how often have you been bothered by any of the following problems: Little interest or pleasure in doing things, Feeling down, depressed, or hopeless, Trouble falling or staying asleep, or sleeping too much, Feeling tired or having little energy, Poor appetite or overeating, Feeling bad about yourself or that you are a failure or have let yourself or your family down, Trouble concentrating on things, such as reading the newspaper or watching television, Moving or speaking so slowly that other people could have noticed or the opposite being so fidgety or restless that you have been moving around a lot more than usual, Thoughts that you would be better off dead, or of hurting yourself [Answers are given on a five-point scale of Not at all, Several days, More than half the days, Nearly every day]

37. GAD7 Over the last 2 weeks, how often have you been bothered by any of the following problems: Feeling nervous, anxious, or on edge, Not being able to stop or control worrying, Worrying too much about different things, Trouble relaxing, Being so restless that it's hard to sit still, Becoming easily annoyed or irritable, Feeling afraid as if something awful might happen [Answers are given on a five-point scale of Not at all, Several days, More than half the days, Nearly every day]
38. Please share up to three ways in which your primary university affiliation is effectively supporting your wellbeing and career development.
39. Please suggest up to three areas where your primary university affiliation could improve its support towards your wellbeing and career development.

We plan to conduct this survey again in the coming years.

If you wish to be included in any longitudinal data analysis, you now have the option to self-generate a unique participant identification code. This will allow us to confidentially link your data between survey years, if you choose to participate

To do this please enter

1. The date of your date of birth (2 digits)
2. The first two letters of your mother's first name (2 letters)
3. The number of siblings you have (2 digits)
4. Your typical US shoe size (2 digits).

For example, Susan is born April 12, her mum's name is Karen, she has no siblings, and her shoe size is a US 8.5. Her code would be: 12KA0085"

Image attributions

Cover – University of Melbourne Image Bank
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References

1. Siegrist, J., Li, J. and Montano, D., 2014. Psychometric properties of the effort-reward imbalance questionnaire. Germany: Duesseldorf University, pp.1-13.
2. Notelaers, G., Van der Heijden, B., Hoel, H. and Einarsen, S., 2019. Measuring bullying at work with the short-negative acts questionnaire: identification of targets and criterion validity. *Work & Stress*, 33(1), pp.58-75.
3. Kristensen, T.S., Borritz, M., Villadsen, E. and Christensen, K.B., 2005. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & stress*, 19(3), pp.192-207.
4. Kroenke, K., Spitzer, R.L. and Williams, J.B., 2001. The PHQ-9: validity of a brief depression severity measure. *Journal of general internal medicine*, 16(9), pp.606-613.
5. Spitzer, R.L., Kroenke, K., Williams, J.B. and Löwe, B., 2006. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine*, 166(10), pp.1092-1097.
6. Cohen, S., Kamarck, T. and Mermelstein, R., 1983. A global measure of perceived stress. *Journal of health and social behavior*, pp.385-396.
7. <https://www.minister.industry.gov.au/ministers/husic/speeches/future-made-australia-deepening-australias-economic-complexity>
8. <https://atlas.cid.harvard.edu/rankings>
9. <https://treasury.gov.au/policy-topics/measuring-what-matters>
10. https://www.pc.gov.au/_data/assets/pdf_file/0019/238033/sub027-mental-health-attachment.pdf
11. <https://www.minister.defence.gov.au/statements/2023-02-09/securing-australias-sovereignty>

12. <https://www.arc.gov.au/funding-research/funding-outcome/grants-dataset/trend-visualisation/ncgp-trends-funding-overview>
13. <https://www.rba.gov.au/calculator/>
14. <https://www.nhmrc.gov.au/funding/data-research/outcomes>
15. <https://www.abs.gov.au/statistics/people/population>
16. <https://www.abs.gov.au/statistics/economy/national-accounts>
17. <https://www.health.gov.au/sites/default/files/2023-04/data-about-the-medical-research-future-fund---2021-early-to-mid-career-researchers-grant-opportunity-outcomes.pdf>
18. <https://www.arc.gov.au/funding-research/funding-outcome/selection-outcome-reports/selection-report-discovery-early-career-research-award-2022>
19. <https://www.nhmrc.gov.au/sites/default/files/documents/attachments/grant%20documents/2023-Investigator-Grants-Outcomes-Snapshot.pdf>
20. <https://www.science.org/content/article/big-tobacco-s-offer-1-billion-research-should-scientists-take-it>
21. <https://www.reuters.com/business/retail-consumer/formerly-philip-morris-backed-foundation-severs-ties-with-nicotine-industry-2023-11-27/>
22. Norton, A. Mapping Australian higher education 2023 (ANU Centre for Social Research and Methods, 2023)
23. <https://andrewnorton.net.au/2023/12/20/whats-going-on-with-domestic-undergraduate-numbers-part-1-demographic-differences/>
24. <https://www.education.gov.au/guidelines-counter-foreign-interference-australian-university-sector>
25. <https://australiainstitute.org.au/report/research-misconduct-in-australia-part-1-the-case-for-an-independent-research-integrity-watchdog/>
26. <https://australiainstitute.org.au/report/research-misconduct-in-australia-part-2-recommendations-for-creating-a-world-leading-research-integrity-watchdog-with-teeth/>

