



Thinks
— Insight & Strategy —

Charting the STEM PhD student landscape

Insights from *Nature's* global 2025 PhD student survey

Kendall Powell, Senior Editor, *Nature Careers*

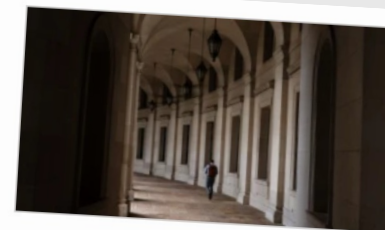
December 5, 2025

The 2025 landscape: uncertain, scary, shifting terrain for science and scientists' careers

Insiders warn how dismantling federal agencies could put science at risk

From NASA to the National Institutes of Health, federal agencies conduct research that universities cannot. Agency scientists speak out about the irreplaceable facilities, institutional knowledge and training opportunities that the country is losing.

Virginia Gewin



Will the public support basic science? A new non-profit aims to find out

The Science Foundation seeks donations to fund ten \$10,000 'what if' seed grants.

Virginia Gewin



How researcher visa curbs threaten science careers

Anti-immigration sentiment is fuelling a drive to slash international student and worker numbers, but at what cost to researchers and countries leading the charge?

Virginia Gewin



How your research can survive a US federal grant termination

Researchers in the United States are filing appeals, seeking court remedies, turning to philanthropy and starting GoFundMe campaigns.

Virginia Gewin



Psychedelics and immortality: Nature went to a health summit starring RFK and JD Vance

The Make America Healthy Again summit, attended by health secretary Robert F. Kennedy Jr and vice-president JD Vance, gave a sense of what's driving US health policy.

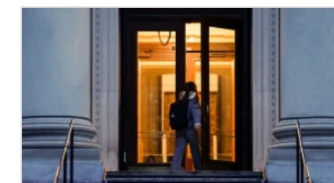
Max Kozlov



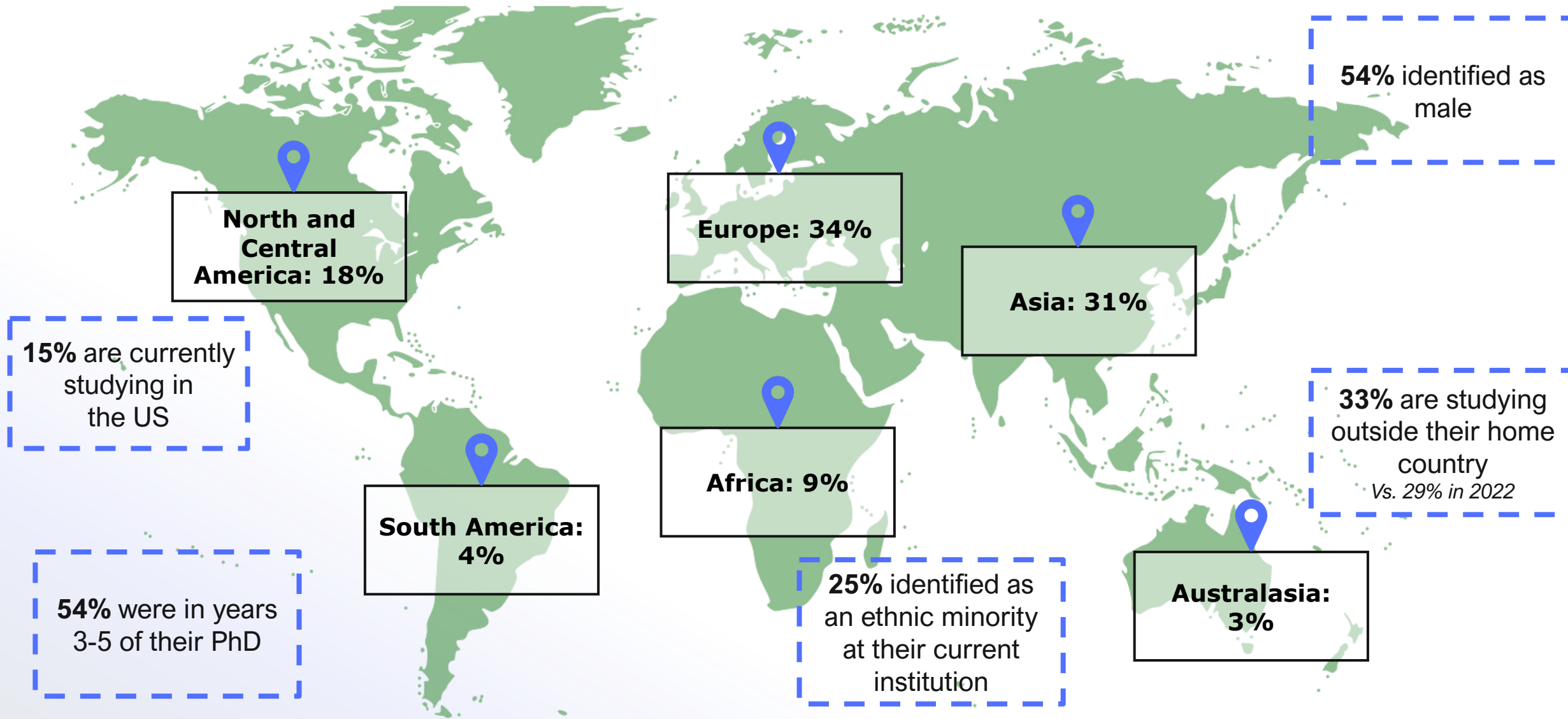
US PhD admissions shrink as fears over Trump's cuts take hold

Some doctoral programmes are admitting no students at all amid uncertainty about federal science funding.

Alexandra Witze



We spoke to graduates from 107 different countries



The main motivation for US-based students to enroll for a PhD is to continue pursuing research

Reasons for enrolling for a PhD (US)

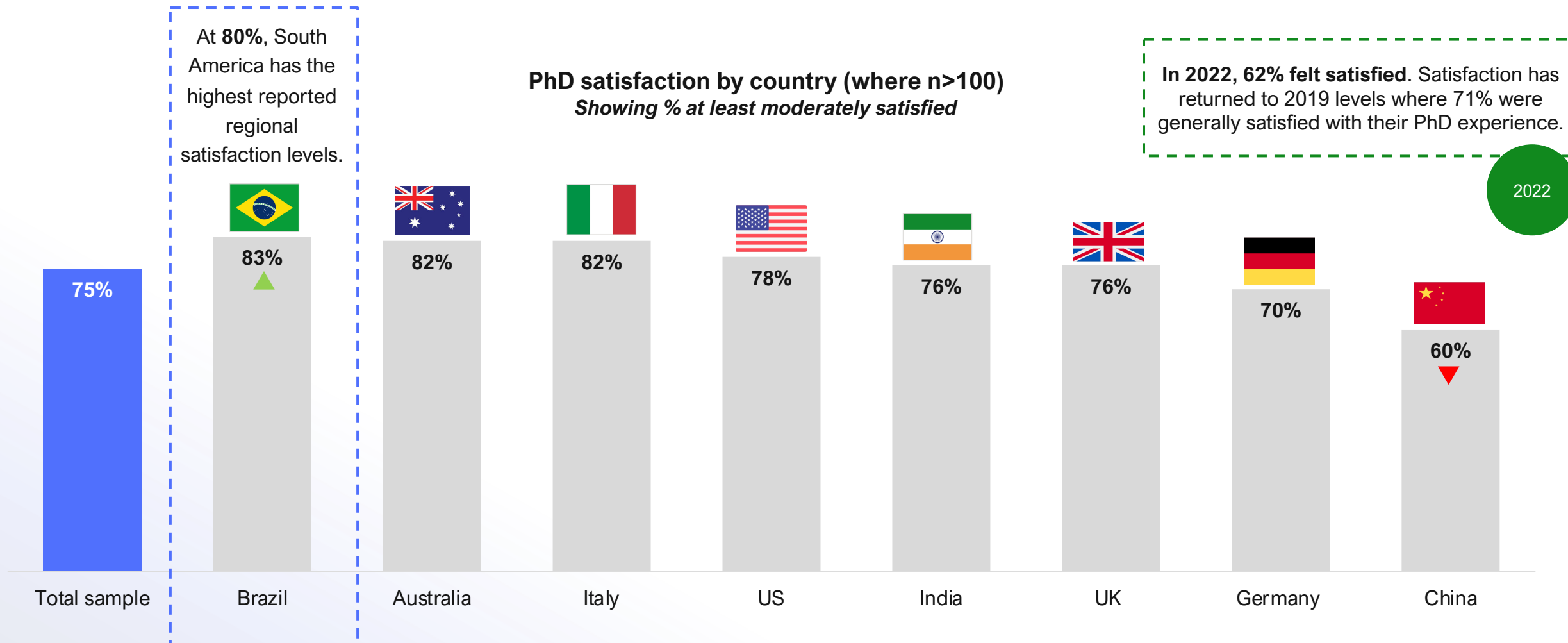
- 1 To continue pursuing research (76%)
- 2 Personal interest in subject of choice (61%)
- 3 To pursue an academic career (45%)
- 4 No job I want is available without a PhD (21%)
- 5 To pursue a non-academic career (16%)
- 6 I received a scholarship for a PhD (8%)

In the US, **men are more likely** than women to cite **pursuing an academic career** as their main motivation (50% vs 39%), whilst **women are more likely** than men to state that no job they want is available without a PhD (26% vs 15%).

13% of those who have moved to study in the US cite **wanting to live in another country** as a key reason for enrolling.

More than 3 in 4 US students are satisfied with their overall PhD experience

PhD satisfaction by country (where n>100)
Showing % at least moderately satisfied



Students in China and Germany are the most likely to feel actively dissatisfied

Q11. Overall, how satisfied do you feel with your PhD experience? Base: Total (n=3785), Brazil (n=113), Australia (n=101), Italy (n=111), Germany (n=247), US (n=568), India (n=430), UK (n=201), China (n=312)

▲▼ Significantly higher or lower than Total

US PhD programs score above average on satisfaction, but 48% report spending <1 hour/week with advisor

PHD STUDENT SATISFACTION ACROSS FIVE COUNTRIES

PhD candidates in Brazil, Australia and Italy had the highest overall satisfaction in their programmes, whereas those in China were the least satisfied.

How satisfied are PhD students?

■ Significantly above ■ Above average ■ Average ■ Below average ■ Significantly below

	Global average	Brazil	Australia	Italy	United States	China
Overall	75%	+8	+7	+7	+3	-15
Compensation and benefits	47%	+2	-7	-19	+1	-1
Supervisor relationship	73%	+2	+4	-5	+3	-12
Independence and flexibility	78%	+3	+8	-10	+7	-12

But nearly **one-third of US students have mental health concerns** and nearly **half report spending less than 1 hour per week** with their PhD supervisor.



How supervision, mental-health and overwork concerns stack up*

Italy had more PhD candidates who were worried about their mental health than students were on average, and significantly more candidates studying in China reported working more than 60 hours a week on their PhD.

■ Significantly below ■ Below average ■ Average ■ Above average ■ Significantly above

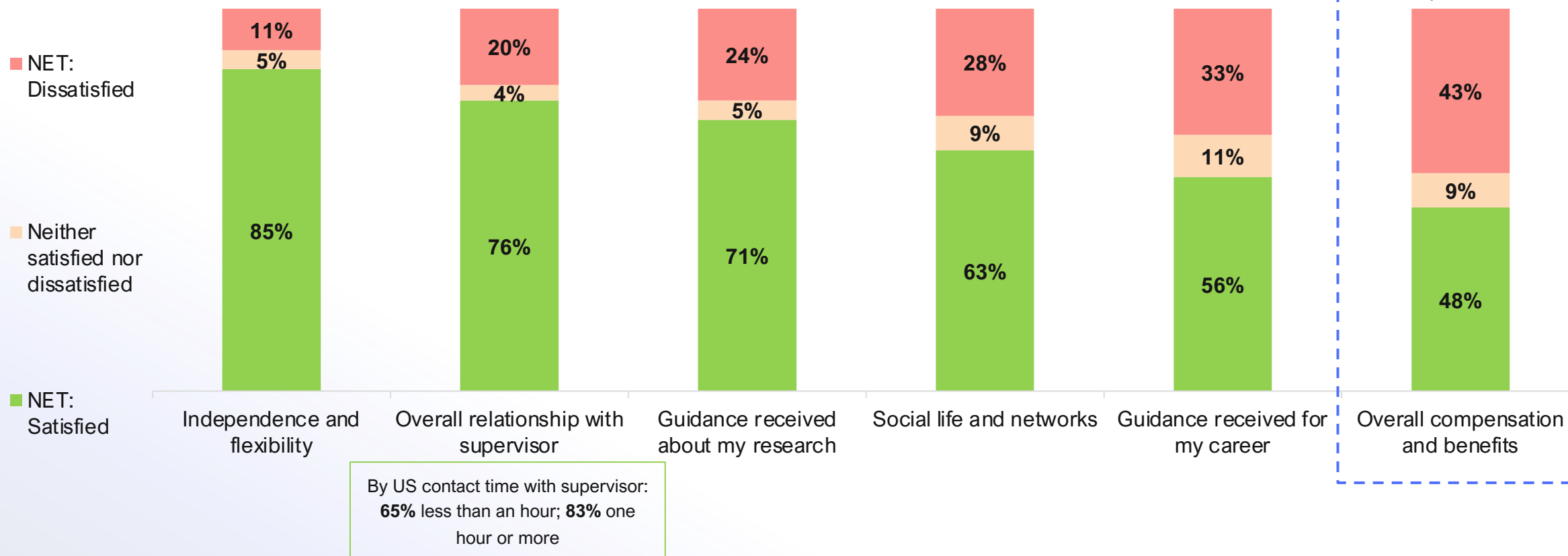
	Global average	Brazil	Australia	Italy	United States	China
Spends less than 1 hour per week with supervisor	49%	+6	+2	-6	-1	0
Mental-health concerns	31%	+5	+5	+9	+1	+2
Working more than 60 hours a week	19%	-6	-5	-10	-1	+27

US students are **more satisfied** with their compensation, supervisor relationships and **independence and flexibility** compared to the global average.

*With respect to the global average, statistical significance varies depending on a country's number of respondents.

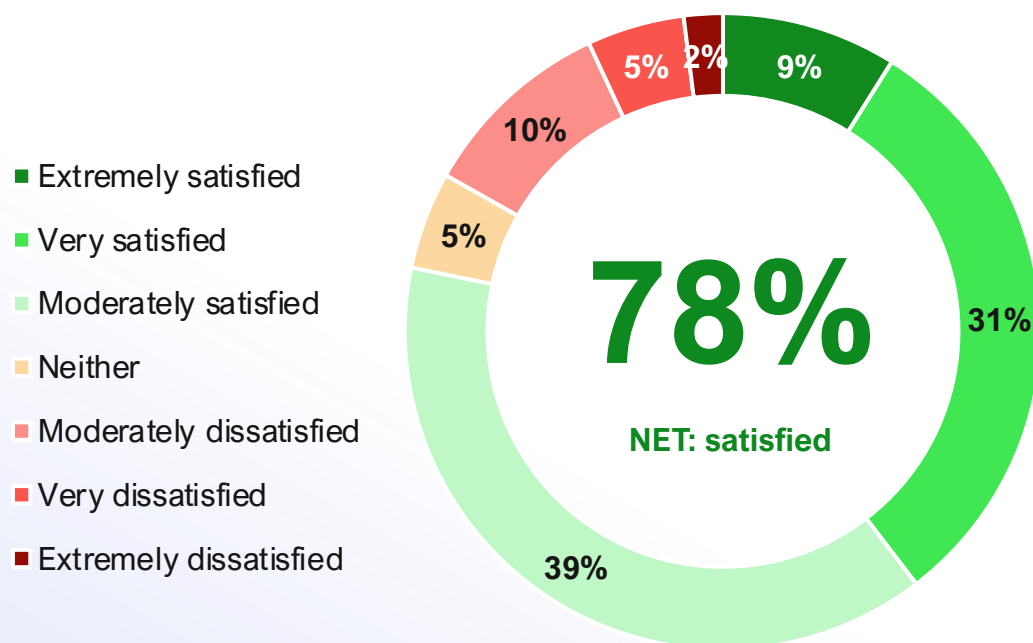
Students most satisfied with PhD independence and supervisor relationship, while compensation could be better

Satisfaction with different elements of PhD experience (US)

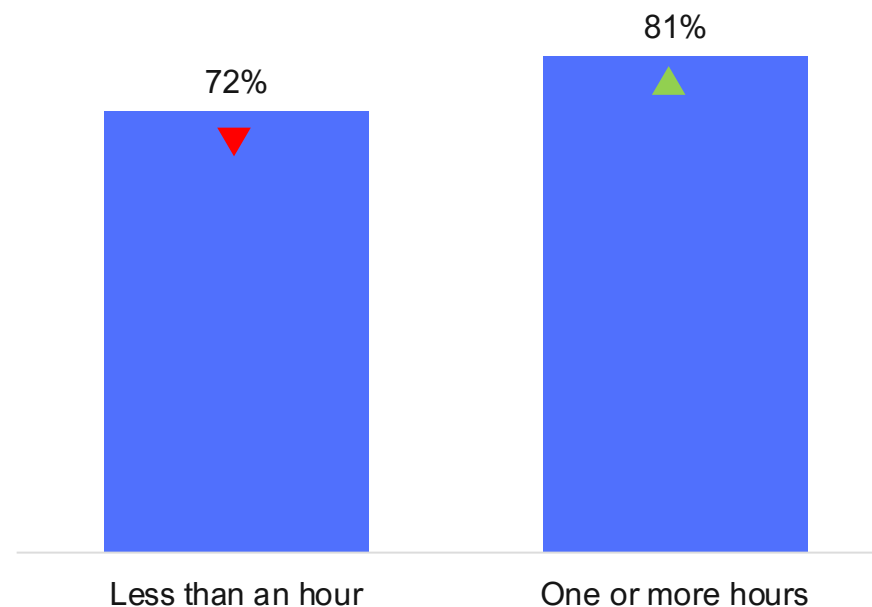


US students who spend more time with their supervisor are more likely to feel satisfied

Satisfaction with PhD experience (US)

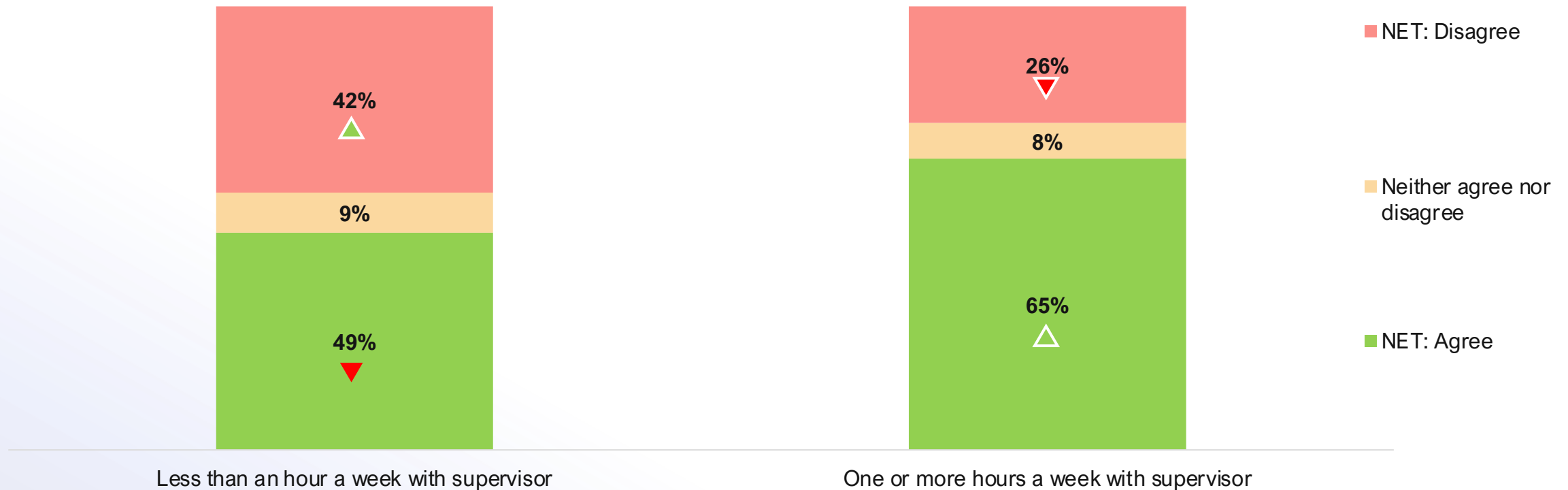


Weekly contact time with supervisor (US)
Showing % at least moderately satisfied



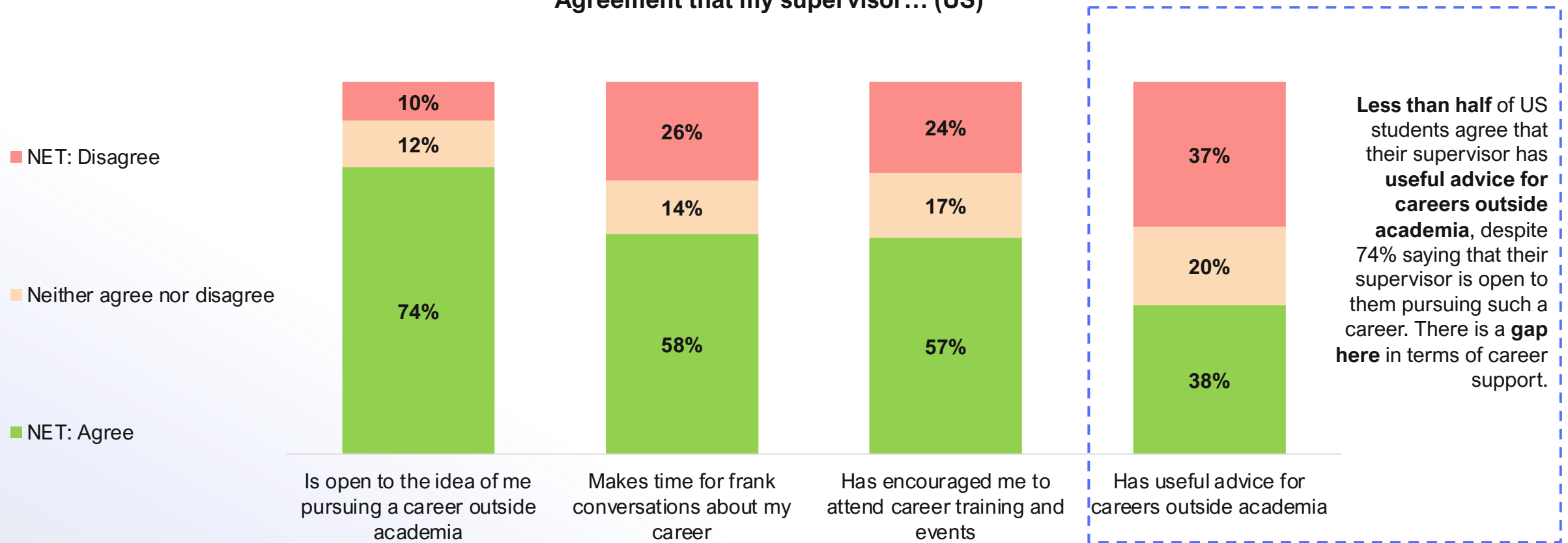
More time spent with supervisors also correlates with PhD experiences aligning with expectations

Agreement that the reality of my PhD experience aligns with my initial expectations, by time spent with supervisor (US)



Many say supervisors provide useful career support, though it is largely focused on academic careers

Agreement that my supervisor... (US)



Globally, students value the support, understanding and guidance offered by supervisors

What is the best thing your supervisor has done for you during your studies? (Global)

Open text, showing coded responses

1	Being supportive / understanding / caring (23%)
2	Given advice / guidance (20%)
3	Provided me with freedom / flexibility (10%)
4	Given encouragement / motivated me (10%)
5	Helped me get financial support / funding (9%)
6	Being available / present (7%)
7	Mentoring / teaching (7%)

“Supported me to attend an overseas conference.”

- Female, aged 45-54

“Being encouraging and helping me celebrate small wins. She gives me intellectual

independence and does not micro-manage but is there to advise when needed.”

- Trans masculine, aged 25-34

“Been very supportive and understanding especially when I had health issues.”

- Female, aged 55-64

“Excellent mentor regarding external activities/concerns. Extremely considerate to cultural differences and disabilities, making a lot of effort to create an accepting work environment.”

- Female, aged 25-34

“Crystallized my research areas and offering a balance of being available and not needing frequent check ins.”

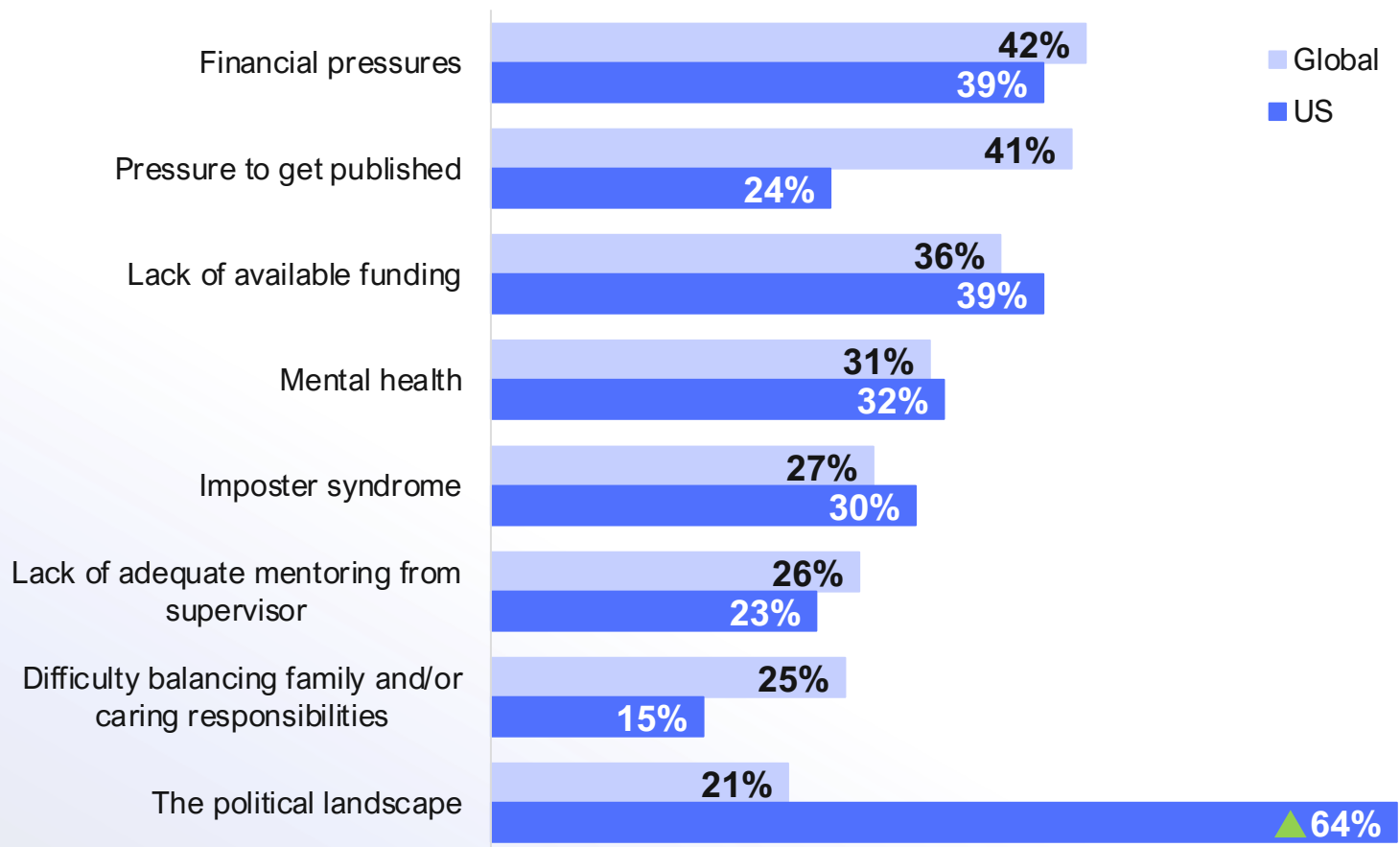
- Male, aged 55-64

“Be always willing to meet, help, and talk and also supporting me in my career moves and applications for funding, research visits etc.”

- Male, aged 25-34

Politics are a larger concern for US students, while financial pressures are equally pressing globally

Main concerns with PhD experience



In the US, those with **caring responsibilities*** are more likely to cite **financial pressures** as a key concern.

In the US, those identifying as an **ethnic minority** are significantly more likely to say they **experience imposter syndrome**.

In the US, **women** are significantly more likely to cite **the political landscape** as a main concern.

Menu **nature**masterclasses 🔍 👤

Professional development training for researchers – via online courses and workshops

[Request a quote](#)



Grow your research skills,
confidence and career

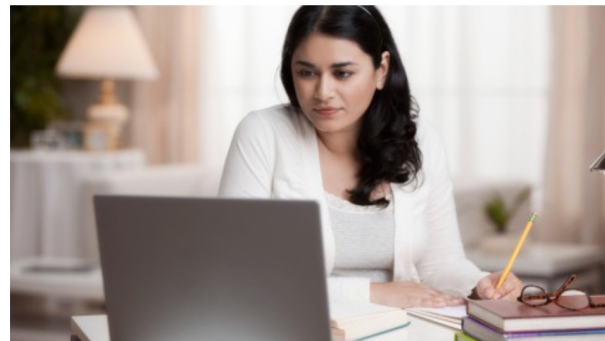


Learn from renowned international
experts including Nature Portfolio
journal Editors



Find training to support you across
the research lifecycle

What we offer



On-demand online courses

Self-paced learning in convenient bite-sized units, with videos and engaging learning activities.

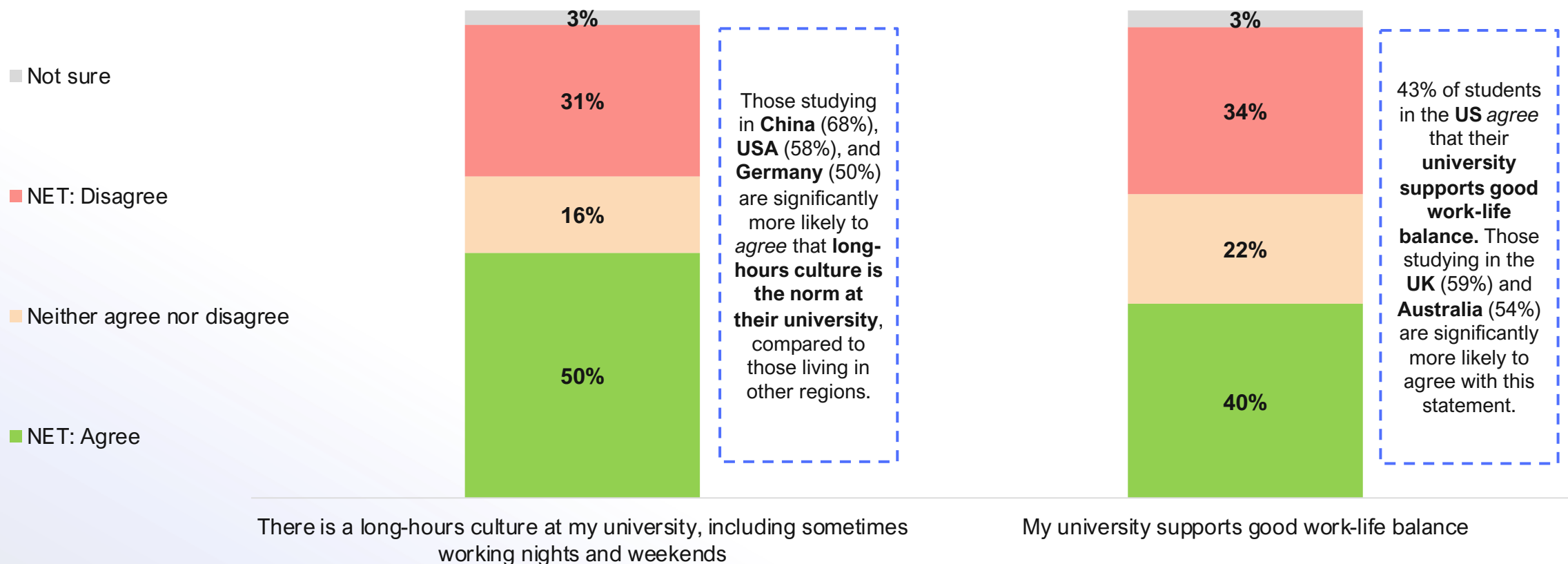


Live workshops

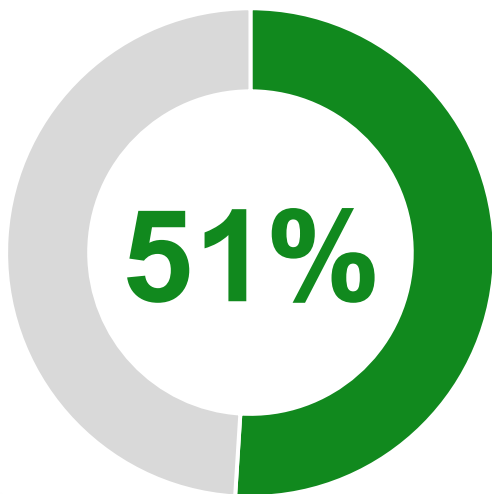
Group learning events including hands-on advice and personalised feedback in real-time.

Majority in US see a long-hours culture & do not agree that their university supports good work-life balance

Agreement with statements about long-hours and work-life balance (Global)



1 in 2 US students report experiencing discrimination, with sexism and general bullying most common

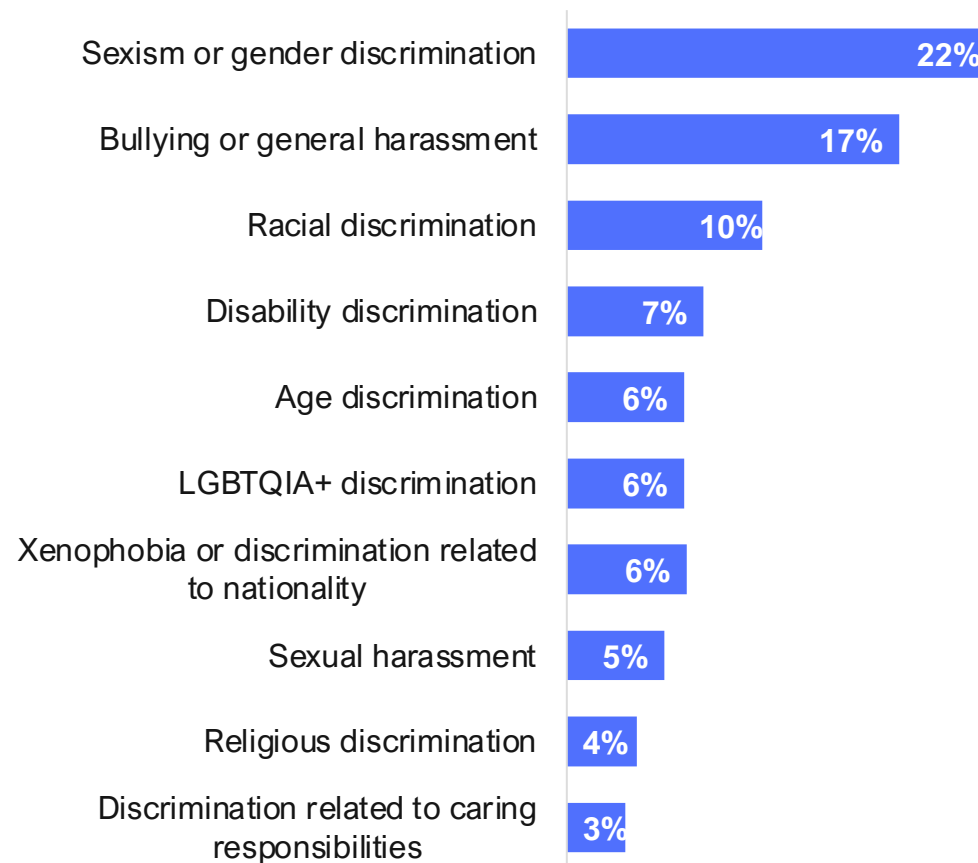


Experienced discrimination or harassment during their PhD experience

2022

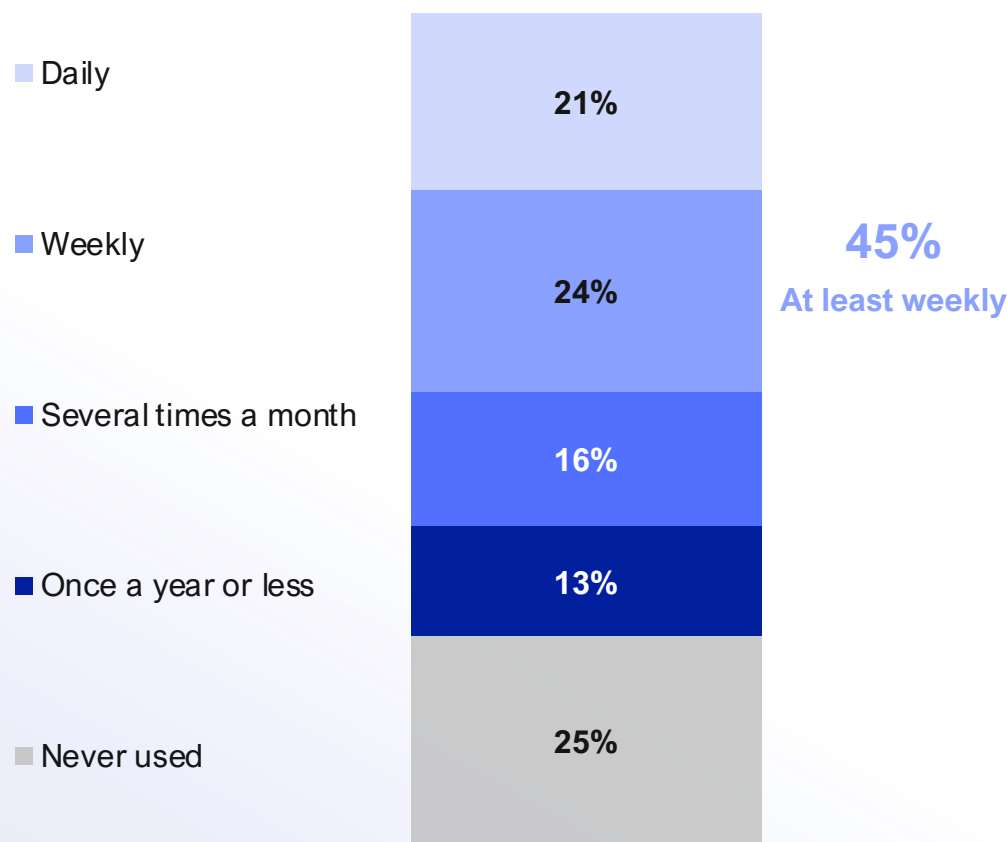
This year globally, **50%** of those who identify as an **ethnic minority** say they have experienced discrimination, compared to 38% of those who do not. In 2022, 35% of those from minority ethnic groups said they had experienced this.

Experiences of discrimination and harassment (US)

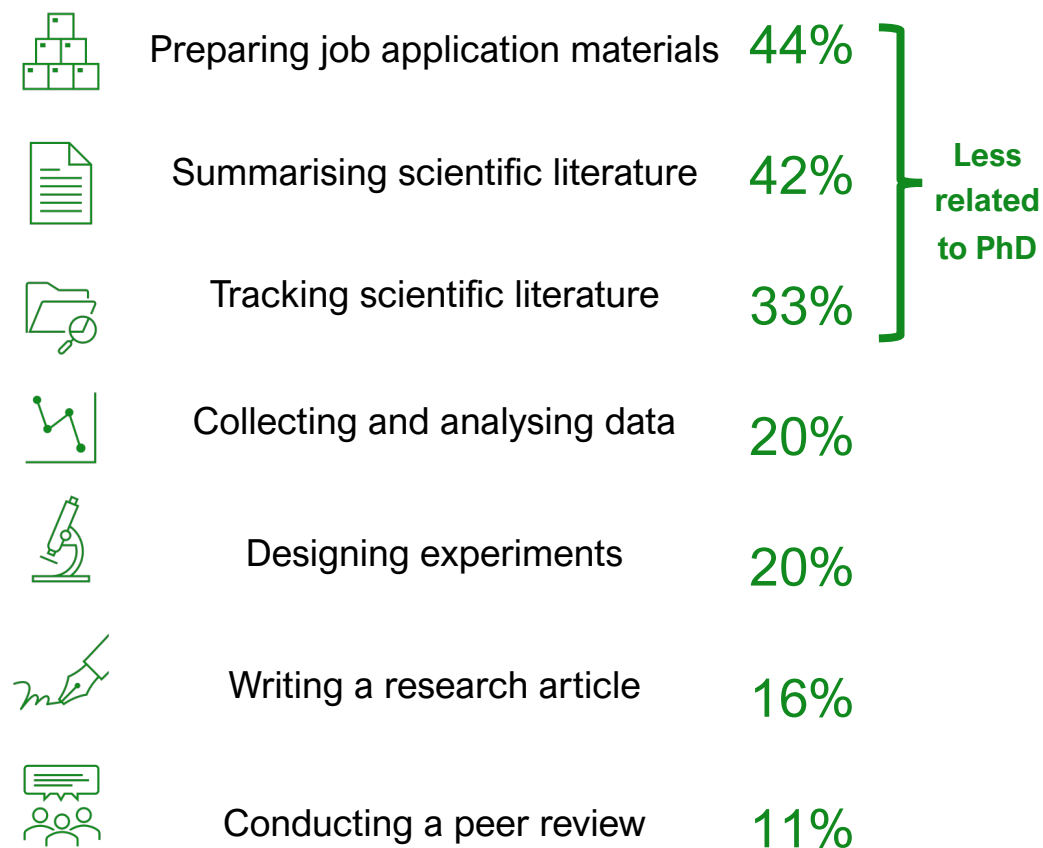


45% of US students are using AI tools at least weekly as part of their PhD

Use of AI tools (US)



NET: Comfortable using AI for... (US)

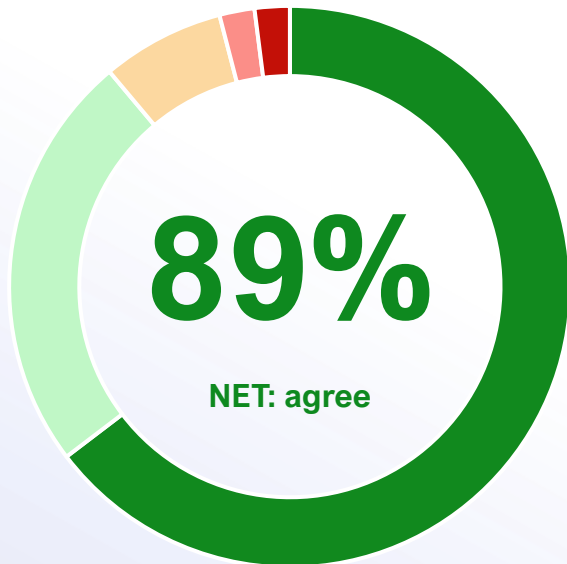


Q32. As part of your PhD / research, have you or are you currently using any AI tools such as ChatGPT, Copilot or Claude? Base: Those studying in the US (n=568)

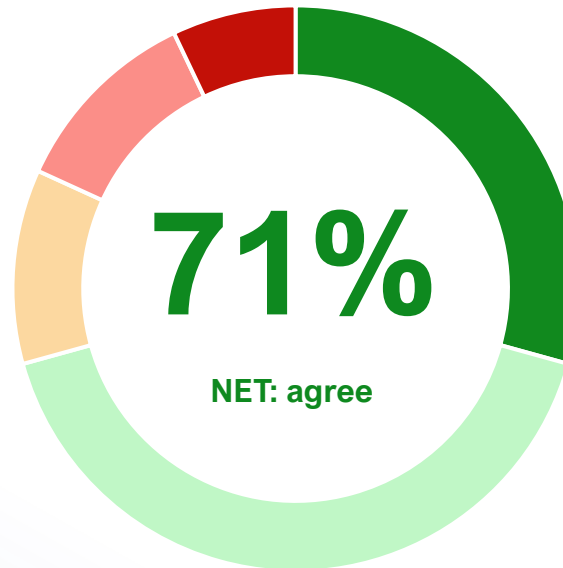
Q33. How comfortable, if at all, are you with using AI tools (e.g. ChatGPT, Copilot and Claude), for each of the following activities that you may do as part of your PhD / research? Base: Those studying in the US (n=568)

A large majority do not fully trust AI tools, but they do recognize the benefits of using them

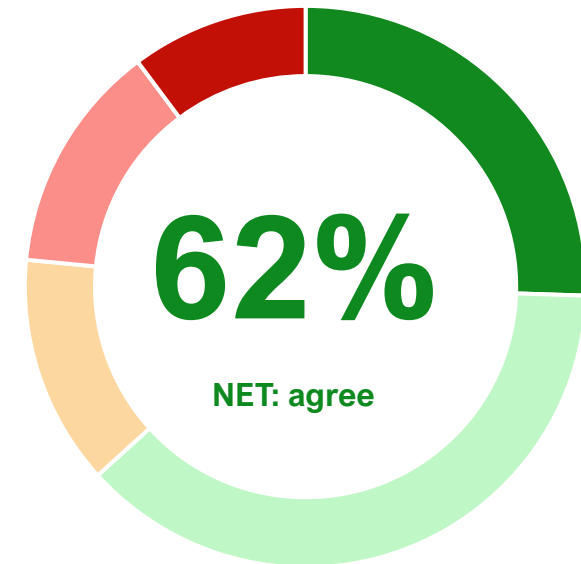
I do not fully trust AI tools
(US)



AI can help students to work
more efficiently (US)

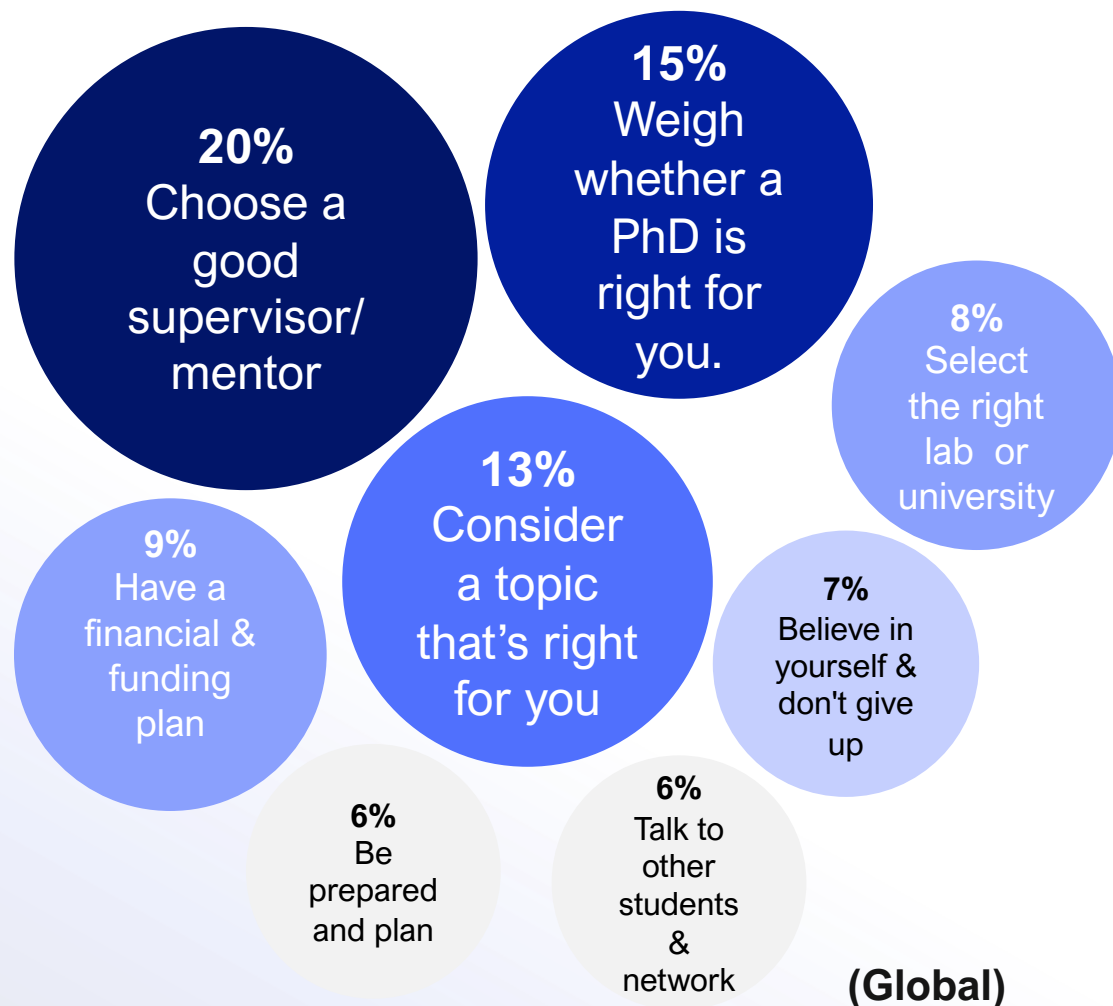


I believe it is acceptable to use AI tools
to support my studies (US)



■ Strongly agree ■ Agree ■ Neither ■ Disagree ■ Strongly disagree

What one piece of advice would you give to someone considering a PhD?



"Go into it with a clear vision of what you would like to achieve with your PhD. This doesn't have to be anything concrete like publishing a first author paper, but how you would like to develop as a scientist. I think this will help ground you when things get tough. Also seek help early if you're struggling."

- Female, 25-34

"I was not prepared before I started my PhD, which resulted in unexpected issues. I would suggest anyone willing to start a PhD to have a plan before actually starting the research."

- Male, 35-44

"Try to make sure your supervisor is someone you like and get on with, both professionally and, to an extent, personally. It will make your PhD experience significantly easier."

- Female, 25-34

"Make sure that you know what your goal with your PhD is; is it the skills you want to learn, papers you want to publish, or the careers you want to pursue? Think about how much of your time you are willing to invest. Make sure that your research style and expectations of supervision aligns with that of your potential supervisors"

- Male, 25-34

Thank You!

www.nature.com/careers

How money, politics and technology are redefining the PhD experience in 2025

Nature's global survey of 3,785 doctoral students shows satisfaction has recovered from pandemic lows, but harassment and inadequate supervision remain widespread.

Linda Nordling



On the move: why PhD students study abroad in 2025

Mobility turns pragmatic as living costs and politics bite, Nature's latest graduate survey shows.

Linda Nordling



Are these the happiest PhD students in the world?

Brazil, Australia and Italy have the highest satisfaction scores in Nature's global 2025 PhD survey – are these nations really the best places to do a doctorate?

Linda Nordling

Are these



'We were ready for this': meet the scientists suing the Trump administration to reinstate terminated grants

Judge sets court date to hear the US government detail how termination directives were made.

Virginia Gewin



These nations are wooing PhD students amid US funding uncertainties

Pauses to some US graduate programmes have led universities in several countries to launch initiatives to entice would-be PhD students.

Rachel Fieldhouse



International PhD student numbers in US hold steady – for now

Trend flies in face of Trump-administration policies, but could yet see a rapid decrease, especially in science fields.

Dan Garisto

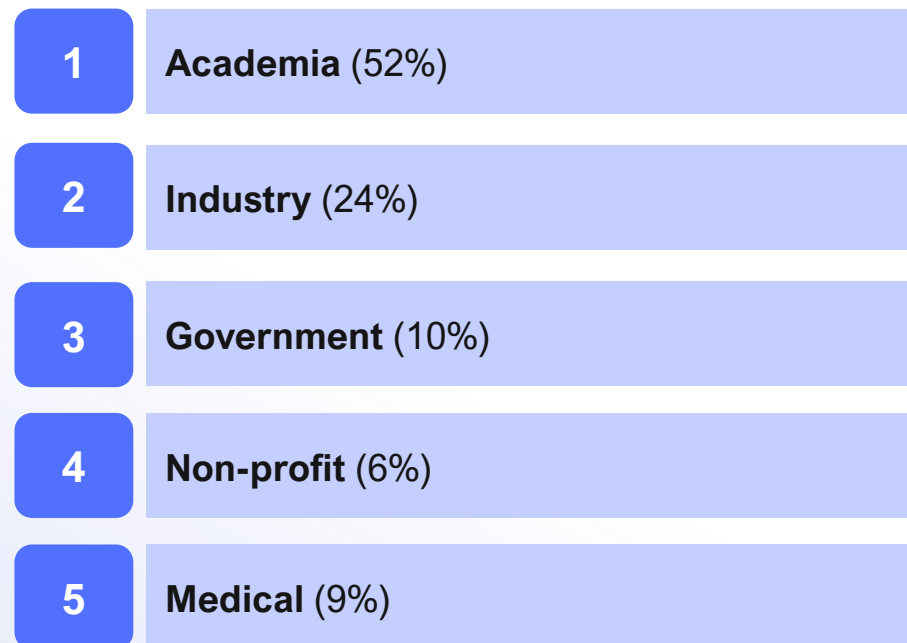


Overmatter

Academia is **STILL** the preferred career path, despite the odds and the equivocating

Which of the following sectors would you most like to work in ultimately? (global)

Showing % ranked top



Compared to when you started your PhD... (global)

37%

NET: More likely to pursue an academic research career

And...

34%

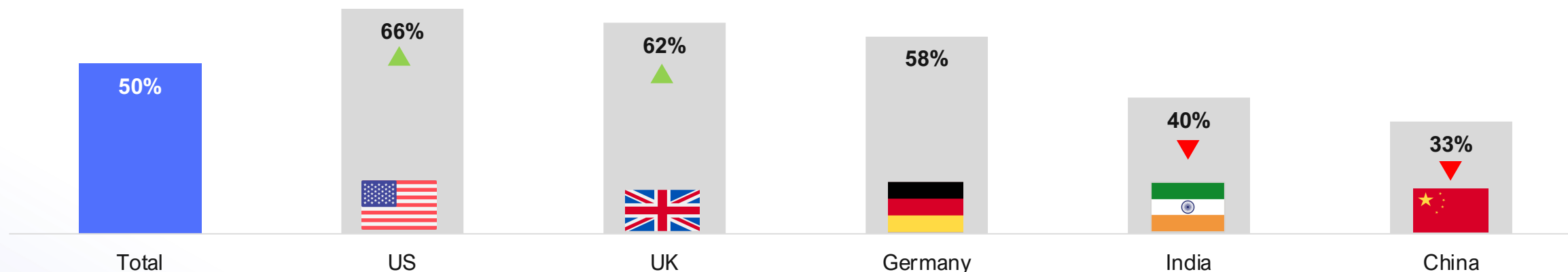
NET: Less likely to pursue an academic research career

2022

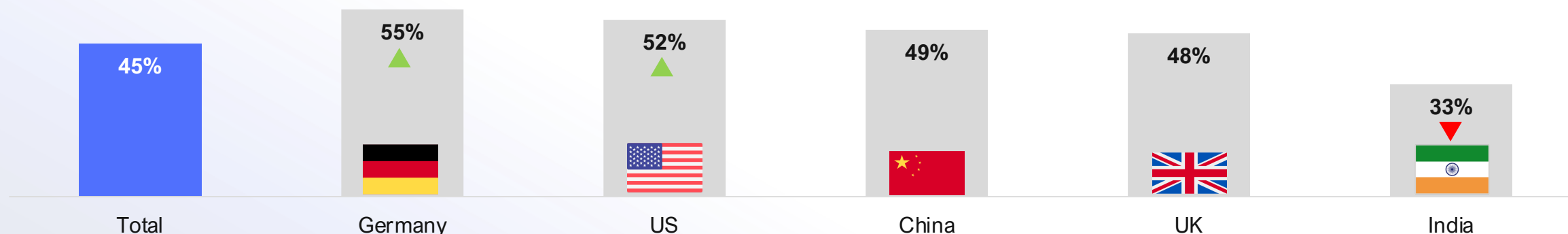
In 2022, 48% said they would prefer to work in academia, with 28% saying industry, 9% Government, 8% medical and 7% non-profit.

Reasons why working in academia is less appealing: funding climate and high competition

Showing % selected funding climate is discouraging as a reason working in academia is less appealing



Showing % selected too competitive/not enough job opportunities as a reason working in academia is less appealing



Analysis into top 3 reasons – there are no significant differences by country vs the total for salary concerns

Q28. You told us that working in academia is less appealing to you than working in other sectors. Why is this? Base: Those who did not rank academia as their top career (n=1833), US (n=313), UK (n=108), Germany (n=137), India (n=234), China (n=128)

PRIVATE AND CONFIDENTIAL

▲ ▼ Significantly higher or lower than Total