Listening to the voices of early-career researchers in the Global South *so that we can better support them* to thrive

ANDY NOBES

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ABBREVIATIONS

ECR	Early career researcher
GPEKE	Global Platforms for Equitable Knowledge Ecosystems
INASP	International Network for Advancing Science and Policy
LMICs	Lower- and middle-income countries
MENA	Middle East and North Africa

Executive summary

Our ambitions for research and knowledge systems rest significantly on the emerging and next generation of researchers. These are the individuals who will investigate new technologies and medical treatments and explore their ethical and social implications, who will work to understand how to improve children's learning and prepare today's students for an uncertain world, who will work with farmers to improve livelihoods and mitigate the impacts of a rapidly warming climate on agricultural production, and who will seek to understand changing societies or explore new forms of artistic and cultural production.

Yet the early careers of many researchers are particularly challenging – with struggles for funding, support, visibility and recognition hampering their ability to design and undertake research that addresses contemporary question and contributes to society. What's more, the voices of many of these researchers are rarely heard.

In late 2021, INASP conducted a survey of early career researchers in the Global South. 7,972 researchers based in Africa, Asia, Latin America and elsewhere answered a total of 50 questions about their own research experience and about the research context in their country.

Analysis of quantitative data and qualitative responses from the survey revealed seven key themes:

Theme 1: The meaning of early career. The term 'early career researcher' has a different meaning in many low- and middle- income countries, where completing a PhD can take much longer, and where they are considered researchers and given research responsibilities many years before they do.

Theme 2: Positivity. Early career researchers face many challenges, but they are largely positive about their careers: 70% are satisfied with their job and almost two thirds have a good work/life balance. But 90% feel that the support available to them isn't enough to progress, and just under half feel secure in their jobs.

Theme 3: Research excellence, impact, and assessment. Researchers are eager to contribute to science and to make a difference to society by solving real-world problems, but most are assessed by the number of papers they produce, or the journals they publish in, not by wider measures of impact.

Theme 4: Collaboration. Researchers have some experience of collaboration – 61% with others in their own country and 40% with those in other countries. Researchers see collaboration as extremely important are keen to collaborate more, but almost two thirds lack funding and opportunities to do so.

Theme 5: The status of research. Research produced and published locally is often seen as lesser than research that is deemed to be 'international'.

Theme 6: Funding. 86% of researchers lack sufficient funding. Their top priorities are infrastructure, hardware and software, and funding for training and skills development.

Theme 7: Impact of COVID-19. Researchers continue to feel the impact of the pandemic, which has interrupted their research and their careers, but it has also created new opportunities to network and to access training.
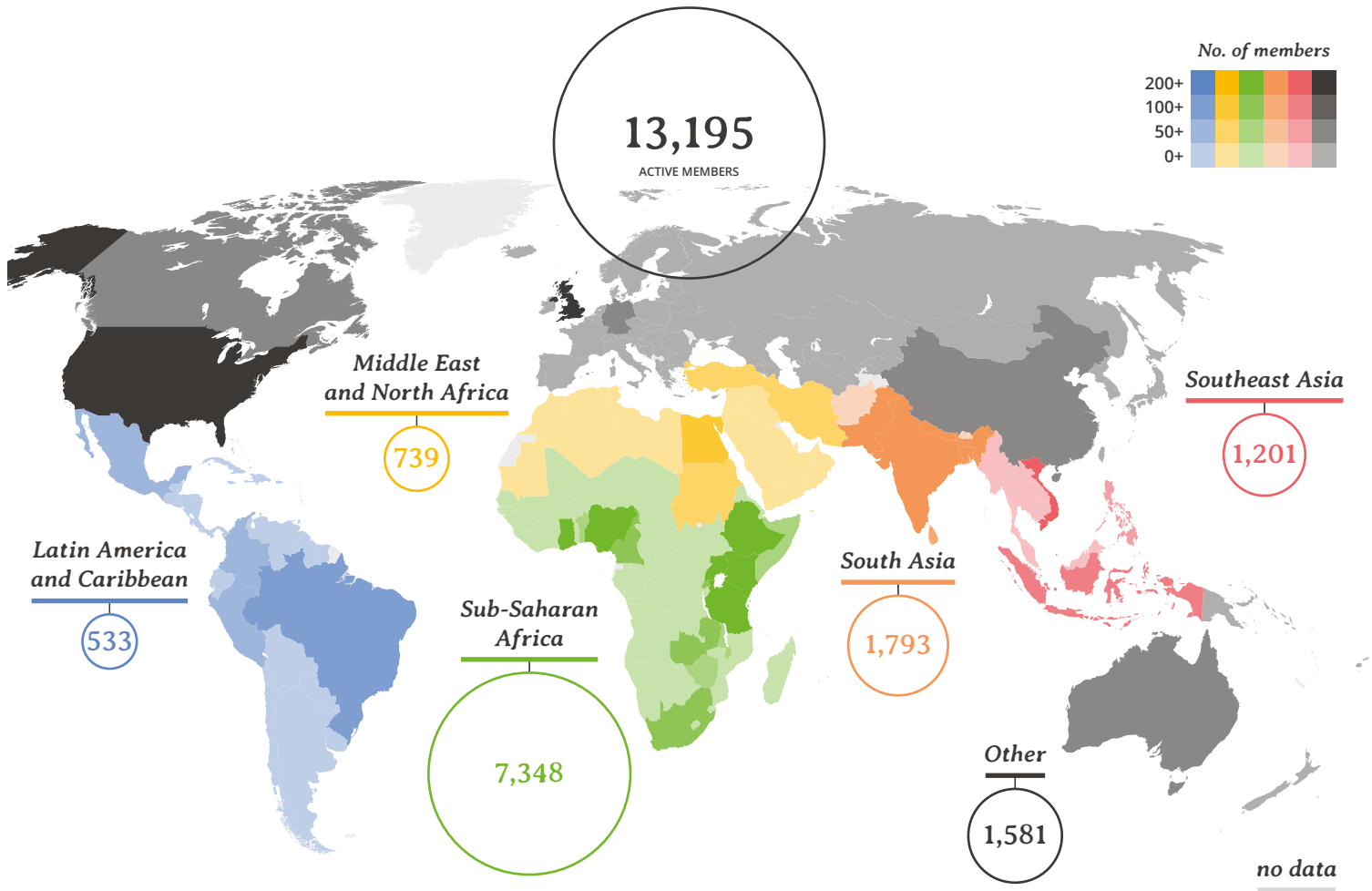
The survey suggests there is much to be optimistic about, but also makes clear what needs to be done if the passion and potential of the emerging generation of researchers is to achieve the most for their countries and the world at large. We make the following recommendations to those with a mandate to support researchers and invest in research systems:

1. **Recognise and support all early career researchers, including those yet to complete a PhD.** We should reframe how we understand the 'early career researcher'.

2. **Continue to invest in inclusive online tools and training.** While digital exclusions must still be addressed, online platforms can ensure that early career researchers have access to the advice, support and information that they need.

3. **Capacity strengthening must respond to different contexts to be effective.** Training and mentoring are vital, and there are many common needs, but initiatives nevertheless need to be designed to meet – or be adaptable – the needs of researchers in diverse locations, disciplines, and to respond to the different needs of women and men.

4. **Support supervisors and mentors.** Supervisors and mentors are critical, but they themselves need to access to training and support to do this well and to encourage others to play this role.

5. **Encourage change in research assessment and evaluation.** Research leaders, funders and regulators need to encourage changes in the way research and researchers are valued and assessed. Researchers need help to understand and navigate different modes of assessment, so they can also push for change.

6. **Support engagement with policy and practice.** Researchers are passionate about their research making an impact on society but need support to engage effectively with practice and policy.

7. **Enable researchers to make the most of collaboration and networking.** Collaboration is increasingly important but early career researchers need help to build equitable collaborations that advance their careers and ensure that their expertise and contributions are fully recognised.

8. **Signpost funding and opportunities to researchers better.** Funding is a major constraint, and researchers need assistance to find, interpret and respond to the calls open to them.

Tuan-Anh Nguyen from Vietnam teaching at the Centre for Continuing Medical Education in Ho Chi Minh City

About AuthorAID

13,195
ACTIVE MEMBERS

No. of members

200+
100+
50+
0+

Middle East and North Africa
739

Southeast Asia
1,201

Latin America and Caribbean
533

South Asia
1,793

Sub-Saharan Africa
7,348

Other
1,581

no data

AuthorAID is one of INASP's flagship initiatives. A global community, it provides support, men-toring, resources, and training for ECRs in low- and middle-income countries. AuthorAID supports over 14,000 researchers to publish and communicate their work. Over the last seven years, over 44,000 participants from 135 countries have taken part in our award-winning Massive Open Online Courses (MOOCs). 34% of the researchers signed up as members on the AuthorAID website are women, and 48% of MOOC participants have been women.

AuthorAID is managed by INASP, and is led and facilitated by an active community, with a team of Stewards based in universities and research institutions across Africa, Asia and Latin America, and a network of regular facilitators. It is kept free and open to all through partnerships with funders and sponsoring organisations.

AuthorAID offers:

• Online training courses and workshops on scientific writing, research communication, and grant writing

• A discussion group where researchers can benefit from advice and insights from members across the globe

• An online mentoring system, to access support from experienced researchers and editors

• Access to a range of documents, and resources on best practice in writing and publication

• A chance to network with or collaborate with other researchers

• Dedicated support to women researchers to enable them to progress their research careers, through partnerships with the Organisation for Women in Science for the Developing World (OWSD) and other organisations

Visit **www.authoraid.info** to find out more.

Introduction

Since 2007, INASP's AuthorAID project has provided early-career researchers (ECRs) in low- and middle-income countries (LMICs) with training, mentoring and other support to enable them to publish and communicate their research. This support has enabled a conversation over many years with researchers in Africa, South Asia, Latin America, and researchers from those regions now based elsewhere, about the challenges they experience conducting and communicating research.

While AuthorAID is managed by INASP, it is led and facilitated by an active community, with a team of Stewards based in universities and research institutions in Africa, Asia and Latin America. These Stewards are senior researchers who have been engaged with AuthorAID for a number of years and now act as a steering group to give advice and make strategic decisions about the future of the community in collaboration with the INASP team.[1]

In early 2020, as part of the Sida-funded Global Platforms for Equitable Knowledge Ecosystems (GPEKE) programme,[2] INASP ran its first major 'Voices of Early-Career Researchers Study' (Dooley et al., 2021). This survey was designed to draw on the insight of the AuthorAID community's members to understand more about the wider challenges facing researchers in resource-constrained settings. Our hope was that this would contribute insights to inform wider work aiming to address inequities in research, including through AuthorAID and INASP's wider activities.

The 2020 survey showed that LMIC researchers are positive about their careers but face challenges making their voices heard and securing the support they need to advance their careers. It also highlighted the inequities in opportunity amongst early career researchers, particularly women. Respondents spoke about shortages of funding and about the importance of research collaboration.

The 2020 data collection period also coincided with the early weeks of the COVID-19 pandemic, leading to the last-minute addition of a question about COVID-19 and some valuable insight into the impact of the pandemic on LMIC researchers (Dooley, 2020). The first 'Voices of Early-Career Researchers Study' also led to the development of a new metric: the 'researcher positivity index'. The index is composed of two components, reflecting firstly a researcher's career and research experience, and secondly their perceptions of their country's research context.

Building on this study, again with Sida's support, in late 2021 INASP conducted a second 'Voices of Early-Career Researchers' survey, asking many of the same questions and exploring some of the previously highlighted issues in more detail. This report presents the findings of this survey and draws out the key themes that we observed. Alongside this report, we have published a separate report that applies a gender lens to the survey (Skovgaard, 2023).

This latest study also benefits from a discussion with and review by members of AuthorAID's international panel of Stewards. The Stewards considered the survey findings in relation to the research contexts with which they are most familiar and reflected on whether and how AuthorAID is addressing the challenges faced by individual researchers in higher education and research institutions. Feedback from the Stewards is included throughout this report.

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1   www.authoraid.info/en/about/authoraid-team/

2   www.inasp.info/gpeke

The survey

The 'Voices of Early Career Researchers' survey was first carried out in 2020 to better understand early career researchers' (ECRs) perceptions of their work and their research environment. It revealed how researchers in the Global South were passionate about their research, hoped it could transform lives, and were optimistic and positive about their ability to do so. However, it also confirmed the challenges that researchers face, both at home and globally. These include gender inequities, inequities in research collaborations and access to funding, and an ongoing pressure to prioritise academic publications over social and economic impact (Dooley et al., 2021).

At the end of 2021 we ran an updated version of the survey to find out how the research environment is changing for ECRs. 7,972 individuals responded to our 2021 survey.[3] Respondents came from 141 countries, with the majority (70%) being based in Sub-Saharan Africa. The majority of respondents (60%) are researchers or research students who predominantly work in formal research institutions (either a university, a research institute) or scientific bodies (such as science academies or learned or professional societies). The remainder work either in hospitals, government agencies, NGOs or did not specify.

Because of the large numbers of respondents, relatively small overall differences in proportions can be statistically significant.[4]

A slightly higher proportion of respondents were men (57.40%), with 42.14% women, 0.17% other and 0.28% preferring not to say. The medicine and healthcare fields accounted for over a third of responses (34.89%), with the other respondents spread across various sciences, social sciences and arts and humanities subjects. This was somewhat surprising, as the overall AuthorAID community, and those who participate in its regular learning programme and in its discussion groups, tend to be more balanced across subject areas, with more social scientists and more researchers in agriculture-

related subjects. This subject balance was reflected more closely in the 2020 survey than in the present study. Given the impact the pandemic has had on research, and the significant involvement of medical and health scientists in the response (which is explored later in this report), the particularly high response from researchers in those fields might suggest that they were keener to share their views as a result. Respondents were significantly concentrated in urban areas, with only 7.24% saying they are based in a rural area and 1.41% in a remote area.

Just over a quarter of respondents were from Nigeria. There were also large numbers of responses from Nepal, Kenya, Uganda, Tanzania, Ghana, Pakistan, Cameroon, and Ethiopia, which correspond to significant clusters in the AuthorAID community. Responses from Latin America totalled less than 300; this is likely to be because the survey was not available in Spanish.

Analysis of the survey results revealed seven major themes, which are explored in this report. As previously mentioned, a separate report offers a more detailed gender analysis of the results. In addition, supplementary thematic analyses provide more detail on the qualitative responses and what they say about the key themes that emerged.

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3   See general data report. https://www.inasp.info/publications/voecrs-2023-datareport

4   See general data report.

Theme 1: The meaning of early career

'Early career' has a different meaning in many low- and middle-income countries – limited funding and opportunities for further study mean many researchers build a career before embarking on a PhD, but they are considered researchers by their institutions.

Definitions may vary, but in high-income countries, the term 'early-career researcher' is usually used to define someone in their first five to 10 years following completion of a PhD. In many low- and middle-income countries (LMICs), academic career structures and pathways render this a less useful definition: many researchers enter academic teaching and research roles and build research careers before they have completed a PhD.

Scarcity of funding, a lack of experienced and available supervisors and funding to support themselves and families while they study, and the pressure of juggling study alongside teaching and other responsibilities, mean that many researchers in LMICs complete a PhD significantly later in their academic or research careers. Difficulties securing support and funding at home also lead many to seek to continue their studies outside their own countries.

I need a PhD degree for promotion. As an early career researcher in Vietnam, my job is super busy because apart from the research work, I have other admin-related tasks. The priority is for researchers holding PhD degree. Often, I do not have enough time to learn different methodologies to improve my research as I wish.

Woman, Vietnam

Ugandan scientists do produce good research. However, many of us have limited funding to conduct research projects. For example, I am working currently on my PhD dissertation and the problem is really interesting. However, nobody is willing to fund me. I am being forced to keep narrowing down and adjusting my original thoughts just that I complete. It is a painful experience for me.

Man, Uganda

Researchers without a PhD make up over 75% of AuthorAID members. The community shows us that qualification levels or number of years of research experience are not a good measure of an 'active researcher'.

As survey respondents were principally drawn from the AuthorAID community, it is unsurprising that this situation is also reflected in the survey findings. Fewer than a quarter of respondents (24%) had a PhD. The majority (49%) had a master's degree but not a PhD, while 26% had just a bachelor's degree. A slightly higher proportion of women respondents than men had a PhD (26% of women vs. 23% of men). Those with a PhD have an average of approximately seven years of research experience, while those without a PhD averaged around five and a half years of research experience.

Additional data in the survey confirms that those with bachelor's and master's degrees are actively involved in research. They report that they publish papers, are assessed by their institutions on the papers they publish and go to conferences. It is clear that they are considered to be researchers by their institutions and often have research management and teaching responsibilities.

24% PhD

49% Master's degree

26% Bachelor's degree
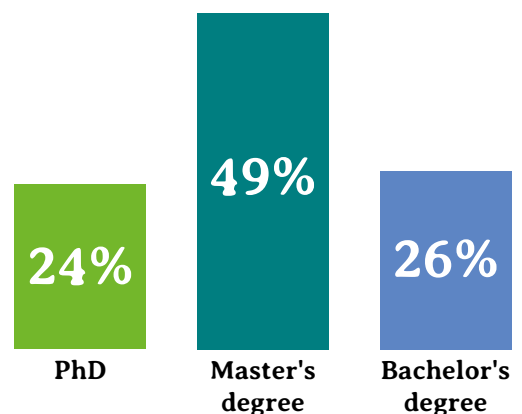
Insights from the AuthorAID Stewards

This topic generated considerable discussion amongst AuthorAID Stewards. One commented that people do research within master's degrees and so people with or doing research master's degrees should also be called researchers, especially if they are in countries where PhDs tend to be done later or not at all.

"We need to clarify the definition of early-career researchers, but, frankly, speaking, I believe most of the people who take part and join AuthorAID are literally researchers, not just research enthusiasts."

Academic discipline makes a difference too:

"Architects don't finish their degree in three years. Those working in medicine, it's six, seven years. Can we generalise any definition of who is an early-career researcher?"

In addition, bachelor's degrees often include academic research projects in their final year so, in those projects, undergraduates are also researchers.

"I'm seeing they are involved already in some research and publishing papers, like two or three papers like systematic reviews or doing some voluntary [research] work. And after the bachelor's degree, they are getting research jobs like as a research assistant. If we do not keep them in the basket of early career, then what category are we going to put them in? I'm fine with keeping bachelor's level in early career."

Another comment was that the survey did not clearly recognise alternative research qualifications. For example, as one medical researcher amongst the Stewards noted, medical doctors tend to take different research routes.

"PhD is usually not the thing that we will do. You will find doctors who are very highly qualified, but then we do fellowships or something different. If a large number of people who responded were clinicians or have a medical background, they might not tick the PhD box. In my country, my fellowship is taken as equal to a PhD."

Gender can play a role when researchers might do further degrees too,

"During my career path, for my master's to PhD, I had a space of like five years for my kids; I had a break. So when you add up all these is not like a straight road for a woman, you do your bachelor's and a master's, and then your PhD; there are some hiccups along the way that you just have to because of the family."

And there can be other reasons for delays, particularly in trying to secure a PhD place or the funding to take up that place:

"After my master's, it took so long for me to actually start my PhD – trying to get the right school, to get the scholarship. Most people would really like to have a PhD outside [their country], just to have an experience. And when you're given admission, first of all you need to get a supervisor that is ready to supervise you before you even start your application. And it took time getting the right supervisors, because a few of them said they were busy; they don't want to take any more students."

The issue of where researchers do PhDs is also something to consider.

"At least in Pakistan, we have two PhD-track programmes. One is what we call an international PhD; people go abroad, to USA, UK, China, Japan, and they come back with good PhD knowledge. There is an indigenous PhD programme in Pakistan as well, which we consider as lower quality. And that is actually downplaying the role of a PhD in Pakistan. If you are doing the survey in the context of a developing country, you might want to ask whether you are a PhD graduate from an indigenous programme within your country, or from abroad, because in real life, that actually makes a lot of difference to how you do things."

Another Steward agreed from their own context:

"From my personal experience, most Nigerian researchers would prefer to have their PhD's done outside Nigeria, as an easier route for relocation to a better research and work environment. After gaining the necessary skills and knowledge with a master's degree, they typically have to wait longer to realise their objective because of the time spent looking for funding."

The issue of doing research in another country is explored further in Theme 5 (The status of research and the research system).

Theme 2: Positivity

Early career researchers in low- and middle-income countries face many challenges, but they are positive about their careers – 70% are satisfied with their job and almost two thirds have a good work/life balance. But 90% feel that they need more training and support to progress, and less than half feel secure in their jobs.

Many of the questions in the survey sought to uncover researchers' feelings about their own research experience and the research systems within their countries. There were many challenges for early-career researchers that surfaced within the study and some of these are summarised under the later themes. However, the survey also had some encouraging findings about how researchers felt about their experiences.

In terms of satisfaction, 70% agree that they are somewhat or completely satisfied with their job. Furthermore, 63% agree somewhat or completely that their job allows a good work/life balance.

In terms of support, 65% somewhat or completely agreed that they have support from their supervisors and 47% somewhat or completely agreed that they have access to mentoring support. However, they also see a need for more support; 69% completely agree that more training and support would enable them to progress, with a further 21% somewhat agreeing.

Despite the positive responses to questions about their experience as researchers, only 53% said they were happy with their organisational culture and only 48% somewhat or completely agree that they have job security.

ABOUT THE 'RESEARCH POSITIVITY INDEX'

In the first iteration of our Voices of Early Career Researchers survey (2020), we piloted an index of 'research positivity' to help us understand the factors contributing to researchers' personal experience of a research career and their perspectives on the context in which they worked (Dooley et al., 2021).

The research positivity index combines the responses from twenty individual questions in our survey. In addition to using the research positivity index to look at overall researcher positivity, we have also divided the index into two subscales.

The first subscale is related to researchers' personal experience of a research career – whether it is a good career choice and offers opportunities for progression and development (we refer to this as 'personal positivity'). The personal positivity subscale consists of twelve contributing questions.

The second subscale is related to researchers' perception of the research context – including institutional, national, and international infrastructure (we refer to this as 'context positivity'). The context positivity subscale consists of eight contributing questions.[5] Higher overall numbers indicate higher levels of positivity.

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5   See Table 43: Questions included in the research positivity index' in the annex.

Geography

There were some regional differences in the results. For 'personal positivity', respondents from Southeast Asia were generally more positive than those from other regions, while those from Latin America and from the Middle East and North Africa (MENA) region were generally less positive. For 'context positivity', it was researchers in Sub-Saharan Africa who were much more positive about their research context than other regions.

The survey also found a difference in positivity between types of institution. Those in research institutes were the most positive, and those working in hospitals were the least positive.

On initial analysis, there was little apparent difference in positivity between different disciplines (<3% difference between the most and least positive disciplines). However, subsequent regression analysis revealed that researchers working in medicine and healthcare were noticeably less positive, in both personal and context positivity, than other researchers. This is perhaps unsurprising, given the impact of the COVID-19 pandemic (discussed further in Theme 7) alongside the many other pressures that face health systems globally, and particularly professionals and researchers working in LMICs.

Susana de la Torre doing field work in Mexico

Gender

Basic analysis of the data revealed a possible interaction between gender and positivity. This interaction became clearer on subsequent regression analysis. For 'personal positivity', men were significantly more positive than women. In contrast, women were significantly more positive than men when it came to 'context positivity'. At an aggregate level, these two effects cancel each other out in the overall positivity index (Skovgaard, 2023). [see Gender report – www.inasp.info/publications/voecrs-2023-gender]

DIFFERENCES IN POSITIVITY BY COUNTRY

- When positivity was compared across different countries, some key differences emerged. The most positive overall were researchers in **Tanzania**, **Indonesia**, **Malawi**, **South Africa** and **Mozambique**. As we might expect, those based in the **USA** and the **UK** (a small sample in the survey) also reported high positivity. The least positive were researchers in **Pakistan**, **Zimbabwe**, **Mexico**, and **Cameroon**.

- For 'context positivity' alone, The **USA**, **UK** and **South Africa** were significantly higher than other countries, demonstrating that researchers are very happy with the research context in these countries.

- There were a number of countries with a notable difference between personal and context positivity. South African researchers, despite their significantly higher positivity about their context, were average on 'personal positivity'. **Vietnamese** researchers were very positive on a personal level, but average on 'context positivity'. **Bangladeshi** and **Sudanese** researchers were very positive on 'personal positivity' but less positive than average on 'context positivity'. Meanwhile, **Zimbabwean** researchers were less positive on 'personal positivity' but more positive on 'context positivity'.

See also Theme 5, on whether researchers consider their location a disadvantage.

Insights from the AuthorAID Stewards

"I'm surprised actually [by the level of satisfaction] because, here, we get a lot of complaints. People are not happy with their job, especially the academics. Some of those who work in the university have been on strike for over seven months. [But] if you asked me directly, as a stranger, if I'm happy with my job, I'm probably gonna say 'yes'- which is not the argument that I give my best friend when we get together for coffee."

The stated high satisfaction levels were also interesting in contrast with the much lower percentages for job security and organisational culture.

"If you are in a developing country, if only 48% have job security, you cannot expect them to have job satisfaction, and you cannot ask them to be happy with the organisational culture. If you're not very clear if you are going to be kicked out or not it's very difficult to remain positive. Especially with COVID I know personally many people who lost their jobs."

However, there was some discussion about the definition of job security varying between contexts:

"Job security means different things for different people. For me, job insecurity would be working in the gig economy; that means sporadically getting money. Some of my colleagues are on a yearly contract; they have to sign a contract for a year and there is a chance that the next year that it won't be renewed but, for a year, they are receiving a salary. Others only get money during the semester but they know that they will get classes the next semester and they will only be in [financial] trouble for the summer. The operational definition of job security may influence the answer on job satisfaction."

And in a context where such approaches to employment are common, researchers may be more comfortable with the insecurity:

"For my setting, job security is usually not official – there's nowhere in the document that says you're going to have your job for 10 years – so if you're hoping on that, then you will probably not be satisfied ever. Most times, people just forget about whether the job is fine. They're not sure how long they will work here, but they just enjoy it while it lasts. I think that probably would have influenced the high job satisfaction over the lower job security."

Theme 3: Research excellence, impact, and assessment

Researchers are eager to contribute to scientific knowledge and to make a difference to society by solving real-world development problems, but most are assessed by the number of papers they produce, or the journals they publish in, not by wider measures of impact.

We asked survey respondents what was most important to them personally or for their research. Their wish to contribute to scientific development and to wider society emerged very strongly. They also wanted to be novel or innovative.

The survey asked researchers to select from a list of their three highest priorities when undertaking research. The most popular option, selected by 67%, was "to make a contribution to your nation's scientific development". "To make a difference to society" came second, selected by 63%. "To be novel or innovative" was the third most popular option, selected by 44% of respondents. "Publishing in high-impact journals" was only selected as a top three priority by 23% of respondents.

A slightly higher percentage of men than women rated being novel or innovative (45% of men vs. 41% of women) and being published in high-impact journals (25% of men vs. 21% of women) as important. In contrast, being accessible to a wide range of readers was more important for women (39% of women vs. 32% of men).

67% to make a contribution to your nation's scientific development

63% To make a difference to society

44% To be novel or innovative
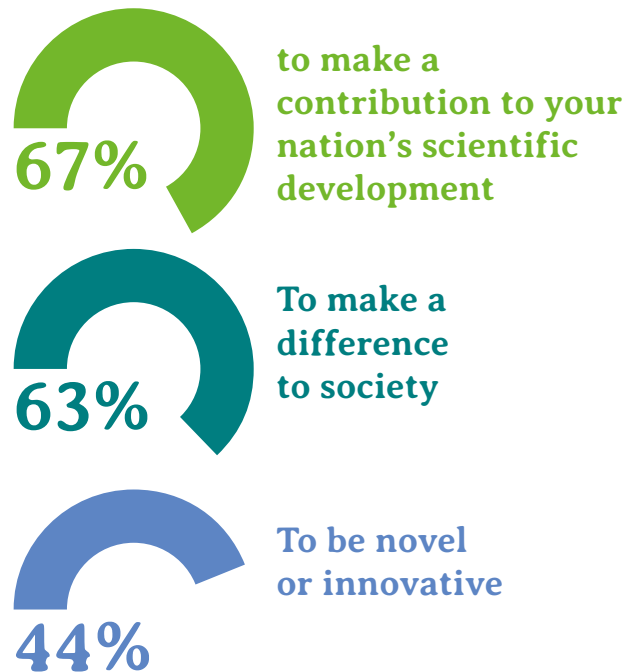
"Research should be evaluated by the impact it creates to the end user of the technologies produced i.e. impact to the lives, and livelihoods of the end beneficiaries, the farmers."
Man, Uganda

"In my view, research evaluation should be a holistic consideration of the total impact of a research activity especially as regards potential changes that can be made to policy and society at large."
Man, Nigeria

The pressures to publish that researchers face is well documented (Amutuhaire, 2022; Nicholas et al., 2017). Publishing in 'high-impact' journals is often a requirement for career-advancement and to build an academic reputation. Publishing is also often incorporated into formal promotion systems – at institutional and national level – and often shapes how researchers interact with global research systems and their peers. The pressure to publish can be at odds with the goal of making a difference with research; high-impact journals are unlikely to be the best way to reach policymakers and certainly won't get knowledge to smallholder farmers or to parents of children who would benefit from a healthcare intervention. Additionally, with so much emphasis on getting published in academic journals, there can be limited time for researchers to promote and communicate their research via other channels and to broader audiences.

> *"My work is evaluated on the basis of number publications as well as the credibility of the publisher."*
> Woman, Kenya

> *"My recent research on quality of care was evaluated by our national postgraduate college and found to be innovative, timely and of good quality. My findings have been disseminated to institutions to improve service delivery as well as been submitted to a good journal for publishing so as to add to the body of knowledge internationally."*
> Woman, Nigeria

> *"[Researchers] are kind of in a dilemma. They believe they have to do fantastic things, but they are actually bogged down where they are, and they are job insecure"*
> AuthorAID Steward

Nevertheless, the commitment of researchers to achieving some form of societal impact was evidence: 85% of researchers responding said that they have a responsibility to make their findings known outside of academia and an impressive 95% believed that they can make an impact on development in their country. They acknowledged that the main users of their research are other academics (84%), but 56% believe that their research is also used by practitioners and 47% pointed to policymakers as intended users.

The survey also explored attitudes to and experiences of research assessment. When asked "what indicators or metrics are used to assess you as a researcher for career and promotion purposes?" 77% pointed to research papers while 57% pointed to conferences and 50% responded with journal metrics.

In the qualitative responses, more than half of the respondents reported that research outputs and 'impact factor' were the biggest factors for their opportunities for promotion. Most (66%) felt that their research was recognised, although significantly fewer (44%) felt they were rewarded for this. Men were more likely to believe that their work was recognised (70% of men vs. 61% of women) and rewarded (48% of men vs. 38% of women).

The responses to these questions suggest that researchers see their roles as being particularly concerned with making a difference. They indicate that further work to bring assessment and promotion criteria better into alignment with those broader goals would be valuable, and could bring dividends to Southern research systems.

> *"Today research is evaluated more in terms of metrics and numbers than by the lives behind those numbers."*
> Woman, India

> *"I guess the number of papers or the journal which has published my research has little to do with the rigor and quality of my work."*
> Man, Pakistan

Aggregating the responses to this question, we developed a phrase to represent the collective attitude to research that the survey revealed; we have weighted each word relative to the frequency with which they were used.

"Excellent research is research which..."

Is ethical, contributes EVIDENCE and
KNOWLEDGE, SOLVES
PROBLEMS,
provides new SOLUTIONS, and makes an
IMPACT on SOCIETY

Against the backdrop of these expectations, the survey also asked what researchers had done to communicate their research in the last year. "Published in an international journal" was selected by 51% of respondents, while a similar percentage (49%) said they had presented to colleagues. Slightly smaller numbers had published in a local journal (34%) or presented at an international conference (27%) or national conference (32%). Just a quarter of respondents (25%) had shared their research as a blog post or on social media and only 11% had written a policy brief.

There was a mixed picture in terms of support for such research communication activities, with 51% saying they had sufficient opportunities to communicate their findings. In the qualitative responses, most respondents believed that more funding would be helpful in promoting their work. This might be funding to support research publications, access to appropriate research tools, travel grants for young researchers, or financial support to meet the fees charged when publishing (Harle & Warne, 2020). Others mentioned that there should be more opportunities for researchers to disseminate their research via national conferences and to policymakers.

"I think it's reinforcing what some of us have been saying for a long time, that actually the usefulness and the use of research is what's really important. Whereas in terms of research excellence, for so long, it's been driven entirely by the kind of academic quality and rigour of the research and the originality of the research question. I think this is a really strong statement from researchers in the Global South, that it's really important that the research which is done is done to address a problem and finding solutions to a problem."

AuthorAID Steward

"Excellent research is research which..."

"...applies scientific methods to generate solutions for societal good and the findings communicated to stakeholders."
Man, Ghana

"Excellent research is research which finds causes of a particular problem and provides solutions to the community to build public trust in research in order to help change the world."
Man, Nigeria

"Excellent research is research which has been conducted systematically based on ethically collected empirical data to give a comprehensive report to a reader either to improve the knowledge or finding solution to a problem."
Man, Sri Lanka

"...answers a relevant societal need, well planned , uses appropriate research methods within a sound ethical context."
Man, Ghana)

"...is thoughtfully written with good background knowledge, practically executed with trained personnel, scientifically interpreted good quality data and well written paper that imparts knowledge to generations."
Woman, India

"...needs vision, creativity and diversity; provides robust and ethical evidence."
Woman, Madagascar

"Is based on sound scientific questioning, rigor and helps solve problems keeping equity in mind and is accessible to all."
Woman, India

"Is informed by real community needs, that is done ethically, and that eventually contribute towards community and national development."
Man, Nigeria

Theme 4: Collaboration

Researchers are overwhelmingly keen to collaborate with their peers, but almost two thirds lack funding and opportunities to do so.

The survey revealed a large disconnect between what researchers want to happen and what they experience: 90% think it is very important to collaborate with other researchers outside their own institution but 64% lack opportunities to do so.

The main barrier to collaboration, according to respondents, is lack of funding, a topic that is discussed further in Theme 6. Some respondents report a lack of institutional support, time, and access to collaborators. Thematic analysis of qualitative responses revealed that "the most significant thing that could be done to improve recognition of research produced in your country" was thought to be expanding collaborative opportunities (both national and international).

Despite these barriers, 61% said that they have undertaken collaborative research within their own country and 40% have collaborated with those in another country. There is also a gender gap, in so far as more men than women collaborated with others; this is discussed further in the gender report (Skovgaard, 2023).

Perhaps the most surprising finding, amongst those who had collaborated internationally, was that 79% felt that their contribution was recognised. This contrasts with many reports that we have heard from researchers, through AuthorAID, who had been omitted from the authors list on a paper, had been treated more as data collectors than partners, or had been unable to access the data or final publications resulting from projects to which they had contributed (Baganda, 2021; Haelewaters et al., 2021). Although only 6% of survey respondents said that they were unhappy with the recognition they received, there were many free-form comments that highlighted that negative experiences of international collaborations still persist.

"Limited resources constrain the high quality researches using advanced technology in my country but collaborative research with developed country researcher can be a way out to improve recognition."

Woman, Nepal

Why did you feel that you weren't recognised as part of your international collaboration?

"While we do the actual on the ground work, when reports of the research are produced, I feel relegated to the last on the authorship despite the efforts. There is also an assumption among some western colleagues that we can't write strong or good reports that meet their quality."

Woman, Uganda

"We provide expert knowledge to in country ngo's both local and international who then write up proposals to funding institutions and forget to acknowledge source of info or collaboration with sources of information."

Man, Zimbabwe

"I was part of an 'academic' trial, as principal investigator in our country. As such, conventionally, we aren't recognized as authors. I guess I expected more, but to be honest, I don't really know what i expected."

Woman, Philippines

"Despite you being the powerhouse of data processing and field work, they said upon publishing the name list should bear 'professors, lecturers', since you're just a technician. Sometimes you're just acknowledged, and they publish your work as main authors."

Woman, Botswana

Another interesting part of this theme to emerge was the effect of the COVID-19 pandemic on collaboration opportunities. There were some positives, where the restrictions on travel for everyone worldwide opened up more opportunities for virtual networking. However, there were also some negatives, where video communication made it harder to build personal connections or work side-by-side to develop research approaches. These issues are explored in more detail in Theme 7: Impact of the COVID-19 Pandemic. Political instability in the researcher's country was also identified as a barrier to research and collaborative work in some cases.

Research collaboration

"More collaborative research activities should be encouraged especially for senior and junior researchers."

Woman, Tanzania

"Collaborative research would prove primary in significantly improving the recognition of research in our country."

Woman, Pakistan

"I could improve the research in my country by collaborating with the research institutions, especially the academics to carry out more training when it comes to data management, scientific writing and also collaborative research with the hospitals and academic institutions."

Woman, Ghana

Stephanie Adama from Ghana observing cervical cancer cells

Theme 5: The status of research and the research system

Research produced and published locally – outside of international collaborations and well-known 'international' journals – is often seen to be of lower status, but this is improving. Suggestions to improve this include more funding and collaboration opportunities, and greater efforts to communicate research beyond academia.

The survey found that the status of research in respondents' countries is mostly felt to be 'moderate', while the status of 'international' research in the same fields is mostly felt to be 'good'.

This difference in perception connects to researchers' concern with mobility: 67% feel that it is very important to experience research in another country and a further 21% feel it is important. Furthermore, 22% saw it as probable that they would work in another country, with a further 57% saying working in another country would be a possible step for them to take.

Overall, 42% saw their location as a disadvantage to their research career. There was, however, a significant variation in responses: those most likely to think that their location was a disadvantage included respondents in Sudan (59%), Bangladesh (52%), Nigeria (51%), Egypt (49%), Mexico (45%) and Pakistan (45%); whereas only 21% of South Africans, 24% of Tanzanians, 29% of Vietnamese, 31% of Rwandans and 32% of Malawians agreed. Many of these results align with the findings of the 'context positivity' index, with those most happy about their research context being in Malawi, Tanzania, South Africa, and Rwanda and those least happy being in Sudan, Mexico, Bangladesh, and Pakistan.

Thematic analysis was conducted on the free-form question "What is the most significant thing that could be done to improve recognition of research produced in your country?". The top four suggestions focused on the following themes:

1. Greater allocation of funding/budget for research

2. Better publication and dissemination of research

3. Expanding collaborative opportunities (both national and international)

4. Research designed for greater societal impact

Other suggestions included more opportunities to develop skills and knowledge; improving the quality of research and regulation; policy level engagement or reform; and better access to mentors.

The most common response to both questions related to the availability and level of funding, which is explored further in Theme 6. The second most common response, related to collaboration, is explored in Theme 4.

How to improve the status of research

"Funding is required for students and early career researchers to generate evidence that in-forms policy and programming decisions"

Man, Zimbabwe

"Providing sufficient funding for researchers and/or research/academic institutions; establishing rigorous evaluation system for quality of (academic/scientific) research outputs."

Man, Ethiopia

"[More funding to] promote a culture of research within the institution through collaboration with international researchers."

Man, Nigeria

"Provide more training to junior researchers on publishing their work and increase the opportunity to young researchers."

Woman, Tanzania

"To improve the quality of research provide funding as well as collaborative research oppor-tunities to enhance the capacity of research"

Man, Pakistan

"Involve people in the community and policy makers in research. Create funding for quality research work, provide standard labs for research work, encourage collaborative research with different fields and internationally."

Woman, Nigeria

Postgraduate students working at the Drosophila lab of the Centre for Advanced Medical Research and Training (CAMRET), Usmanu Danfodiyo University, Sokoto, Nigeria. By Kamaldeen Olalekan Sanusi.

Theme 6: Funding

86% of researchers lack sufficient funding and their institutions are unable to invest sufficiently in the basic infrastructure required for research.

Funding emerged as a significant issue for many respondents in our first survey in 2020 and we sought to explore this issue further in this survey. The qualitative findings were clear: 86% of respondents said that they do not receive sufficient funding to carry out their research.

Thematic analysis provides further insight into where researchers see the funding gaps. When asked "If you or your institution could receive additional financial support, what should be invested in, to ultimately help you achieve your research goals?" the most common responses related to infrastructure. Researchers said they needed the tools for strengthening the technical capacity of their institution, including the software and hardware needed for their research.

Many comments also referred to financial support and support for individual researchers to develop skills and knowledge, for example to access training in proposal writing and research communication.

Respondents also noted the need for more support to access, publish and disseminate their research papers.

"If you or your institution could receive additional financial support, what should be invested in, to ultimately help you achieve your research goals?"

"Laboratory equipments, facilities and consumables."
Woman, Nigeria

"Support for registration fee and travel to conferences and seminars."
Man, India

"Upgrade the existing research infrastructure like office space, internet connectivity and improve ambience."
Man, Nigeria

"Publication fees for high impact factor journals to get published manuscripts for academic purposes."
Woman, Ethiopia

"Funding small grants research projects for mentoring early career researchers."
Man, Tanzania

"Support to carry out research projects at local and national levels."
Man, Uganda

"Resources for research (i.e. access to libraries, software, equipment etc)"
Man, Ghana

Theme 7: Impact of the COVID-19 pandemic

The longer-term impact of COVID continued to be felt as researchers overcame interruptions to their research and careers, but it has also created new opportunities for virtual networking and training.

The 2020 survey was conducted in the early stages of the COVID-19 pandemic when national lockdowns and travel restrictions had only been in place a few weeks. A late addition was made to the survey to ask about the impact of the pandemic and a report was published of the key findings (Dooley, 2020).

In that first survey, respondents highlighted key concerns around funding, delays to work, interruptions to collaborations and limited travel. There were also some comments about opportunities, especially in medical and healthcare research. The comments provided little information at that time to enable us to make direct observations about the impact on mental health and concerns about careers did not emerge as key concerns.

Since then, members of the AuthorAID community have shared their experiences in a series of blog posts, which have built on these themes.[6]

The 2021 survey was conducted just over a year and a half after the first, and at a time when pandemic restrictions were generally moderate. In this second survey, although travel was beginning to open up, the same themes surfaced again. In addition, their impact had become clearer, with more comments pointing to career challenges and mental health implications.

Buna Bhandari, an AuthorAID Steward, conducted a thematic analysis of the qualitative responses to this question and identified some key themes.

Limited funding for research

Many respondents highlighted how both international and national research funders had shifted their funding towards efforts to mitigate COVID-19 and to vaccine-related activities. This has had an inevitable impact on other research activities that are not related to COVID-19 or public health.

> *"Funding opportunities will reduce because the social sciences have not been a priority funding area. The COVID pandemic has shifted the focus in entirety to public health. Other pressing development issues like livelihoods, food security, water security have taken a backseat."*
>
> Woman, India

Responses suggest that the pandemic and its aftermath led to a reduction in funds for basic scientific research and impacted how projects have been run. There were specific concerns expressed about the impact of this shift on funding for international travel, buying reagents for laboratory work, and for conducting fieldwork.

In addition, shifts in funding globally made it harder to travel to meet or to receive visits from international colleagues, reducing the opportunities for training and mentoring that these often bring.

Some respondents also expressed demotivation caused by limited funding and the need to change their jobs.

> *"Less mobility, delayed research, issues with access to research subjects, shift of focus and financial resources towards COVID challenges."*
>
> Man, Uganda

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6   See the collection of stories in the AuthorAID news section at
     www.authoraid.info/en/news/?selected_facets=categories_facet%3ACOVID-19

Impact on how research was conducted

Early career researchers who were involved in primary research or field-based research reported that their research was negatively affected by travel bans, lockdowns, social restrictions and social isolation implemented to manage the pandemic. They expressed it as a "challenge for observation and data collection". Primary research also suffered due to reduced opportunities to access in-person support from colleagues outside of their institutions.

"The pandemic had a great impact. In Mexico, we did not have the opportunity to access our laboratories because the universities closed. Moreover, funding was reduced to divert resources to situations related to the pandemic."

Man, Mexico

In addition, the closure of universities and scarcity of reagents caused problems for laboratory-based research.

And, while some researchers switched to online tools for surveys and other data collection, not all countries and contexts were equipped with the required technology, and such approaches were not appropriate for every piece of research. Research conducted within hospitals had challenges too; although hospitals remained open, they were busy and were mainly focused on managing COVID-19 cases.

Disruptions to career development

The funding and logistics already discussed in this section impacted the start of new research degrees (master's and PhDs) and new research positions. Delays were also caused by border closures and travel restrictions and by new vaccination and COVID testing requirements.

For research that was already underway, timelines were also disrupted. Respondents reported being less likely to get a scholarship, fewer interactions with their supervisors, and reduced opportunities to participate in skill development training, leading to some career opportunities being lost.

Some respondents also reported losing their jobs as a direct or indirect result of the pandemic.

"It has reduced the chances of getting funds and fellowships abroad. A fellowship has been postponed for a year and later changed to a virtual fellowship due to COVID-19 pandemic. In the future, too if the limitations this pandemic imposes continue, it may hamper opportunities of collaboration and funding for scholars in disadvantaged locations like mine."

Man, Ethiopia

"It has delayed completion of my PhD research since I could not travel to Kenya for my presentation. It has also reduced the chances of me interacting with my respondents hence delaying progress on my work."

Man, Zambia

Delays to publications and other research outputs

Such delays did not just affect researchers' careers; they also delayed the communication of and therefore potential impact of the research itself. Many respondents said publication of their research was delayed and that their research productivity was lower as a result of the pandemic restrictions.

"The COVID-19 pandemic has broadened the way I carry out research and relate with other researchers. It has given me opportunities to participate in several online conferences that I would not have had the financial capability to attend. Collaboration has been done using different online platforms."

Woman, Nigeria

An increased role for technology

Despite the many challenges, there were some opportunities identified too. Respondents highlighted the growth in opportunities to collect data using virtual methods, and some highlighted how online data collection, online conference attendance, and online training provided many opportunities to participate in different activities, despite restrictions to movement.

> *"Yes, I believe the change has been positive as a lot more people are using online mediums to connect. Right from expenses to being able to collaborate with experienced researchers....it has become easier especially as a beginner."*
>
> Man, Nepal

Some saw this shift as saving on the time and money that would be required to attend training activities or conferences in person. They added that the issue of getting a visa to travel to other countries to attend events was also addressed by having virtual meetings.

Other comments showed how the use of such technology also reduced accessibility gaps in research.

However, this advantage was not universally felt. Other comments revealed the challenges to accommodating online engagement in places where the internet or electricity are unreliable or expensive. They experienced difficulties in virtual networking events or were unable to join; this was identified as a barrier to virtual collaboration for those in resource-limited settings.

A shift to virtual networking and collaboration

Opportunities to participate in virtual meetings, conferences and training increased dramatically during and following the pandemic and these provided new ways to network and collaborate; some researchers perceived that opportunities for collaboration had increased as a result. Some respondents noted that the online shift helped them to find experts in related fields more easily, increasing the opportunity to collaborate.

However, many respondents saw travel restrictions, that prevented them from attending face-to-face training, conferences, and other events, as major barriers. They felt that those restrictions reduced their interaction with possible collaborators and funders. In addition, many saw virtual events as less effective as and less engaging than face-to-face events, leading to less collaborative work. They also commented that many exchange programmes, training activities and meetings were suspended due to funding cuts and priority shifts.

> *"Positive side was that I could attend many workshop/training virtually for free which would cost heaps if not virtual. Also, I could connect and network with international researchers and students for scientific talks and collaboration."*
>
> Woman, Nepal

> *"The COVID-19 pandemic has broadened the way I carry out research and relate with other researchers. It has given me opportunities to participate in several online conferences that I would not have had the financial capability to attend. Collaboration has been done using different online platforms."*
>
> Woman, Nigeria

Motivation and commitment

Some respondents were able to find collaborators virtually but noted that it is tough to monitor progress virtually, making collaboration less effective.

Many participants felt that potential collaborators were not interested in doing so remotely. Not being able to have as many physical interactions left some collaborators less motivated and less committed. Delayed timelines also hampered collaborations and some collaborations ended due to the lack of interaction.

"Yes, it has become quite easy to find collaborations. However, these collaborations have also become quite inefficient because it is hard to monitor the progress of your partner remotely, and some of your collaborators can have multiple assignments with other institutions making them very inefficient."

Man, Uganda

"COVID-19 has changed collaborative research endeavours hugely. Earlier, face-to-face meetings would add enthusiasm each time we met. Online meeting, however, does not add that level of enthusiasm!"

Man, Nepal

Insights from the AuthorAID Stewards

In Theme 2 (positivity) those working in medicine and healthcare revealed that they were slightly less positive than researchers in other disciplines. Although researchers in this area benefitted from more funding and a greater focus on research, those researchers are also often clinicians and have been closer to the unfolding public health emergency.

As one Steward observed:

"When you look at medicine and healthcare, researchers have been less positive than in other disciplines. Since COVID, the incidence of burnout is so higher in healthcare professionals. And it's not going down as much as you'd expect now that incidence of COVID is not as bad. So, of course, you can understand that if there's still a lot of burnout that is still there, then it's going to reflect in their positivity to life and career in general."

There were also some comments about collaboration opportunities as a result of the changing situation that researchers found themselves in:

"Speaking myself as a researcher, I have been extremely productive over the last two and a half years in terms of international collaboration, but it is definitely not something you do in person. So many new opportunities actually came up there."

Conclusions

It is clear from this latest Voices of Early-Career Researchers survey – as it was from the survey conducted in 2020 – that many researchers in low- and middle-income countries face a range of challenges in conducting and communicating their research. They face challenges progressing in their career, particularly in securing the support and funding to complete a PhD. They are passionate about making an impact with their research, but are assessed and rewarded mostly according to academic publications, their research is not always given the recognition it deserves, and they need further investments in funding, infrastructure and support to enable collaboration with other researchers around the world. These challenges have generally been exacerbated by the COVID-19 pandemic.

Unsurprisingly experiences vary significantly between researchers according to the context in which they work. Some of these experiences are common across countries, regions, disciplines, or genders while others are much more individual – such as whether a supervisor is supportive or if experience of a collaboration is good.

The 'positivity index', with its two components based on 'personal positivity' and 'context positivity', is a useful tool, and helps to tease out the factors that influence a researcher's experience, and to understand how they vary between different researcher groups and contexts. However, unanswered questions remain, and because terms may be interpreted differently by researchers in different contexts, we should be careful drawing too-firm conclusions.

Overall, the survey highlights the breadth, depth and importance of research going on across the Global South and the commitment of ECRs in the South to research that "is ethical, contributes evidence and knowledge, solves problems and provides new solutions, and makes an impact on society".

For INASP, the survey emphasise the important role that AuthorAID and related initiatives can play in helping researchers develop their research skills, providing a platform for making connections and fostering opportunities, and advocating for a more equitable and inclusive global research ecosystems.

Recommendations

How can institutions, programmes, funders, and policymakers help address the challenges raised in this survey, and do more to support the next and emerging generation of researchers? The results suggest several areas that need to be addressed:

1. **Recognise and support all early career researchers, including those yet to complete a PhD.** Most of the members who join AuthorAID are scientists and scholars and are doing important research in despite not having a PhD. It is important to recognise their work, the challenges they encounter, the support they need to progress and to make an impact, and to reframe how we understand the 'early career researcher'.

2. **Continue to invest in inclusive online tools and training.** While online cannot replace physical interactions and face-to-face learning, and is not universally accessible, it can do much to ensure that early career researchers have access to the advice, support and information that they need.

3. **Capacity strengthening initiatives must respond to different contexts to be effective.** Providing opportunities for researchers to undertake training and develop their skills is essential, but initiatives need to be designed to meet – or to be adaptable to – the needs of researchers in diverse locations, disciplines, and to respond to the different needs of women and men.

4. **Support supervisors and mentors.** Experienced, senior academics and researchers have a key role to play in supporting and mentoring early career researchers in their teams and helping to create more positive organisational cultures. But supervisors and mentors may themselves need training to do this well, and with too few available, efforts to recognise and support them in these roles are important to retain and grow the pool.

5. **Encourage change in research assessment and evaluation.** Research leaders, funders and regulators need to encourage changes in the way research and researchers are valued and assessed. Researchers need help to understand and navigate different modes of assessment; incorporating critical discussion of metrics and evaluation in training could help researchers to push for change in their own institutions.

6. **Support engagement with policy and practice.** Researchers are passionate about their research making an impact on practice and policy. Training and support in research design, communication and engagement can be valuable, if it enables researchers to understand and respond to the way knowledge and evidence are used in their own contexts.

7. **Enable researchers to make the most of collaboration and networking.** Collaboration is increasingly important to research careers, but it can be challenging for early career researchers to find partners and build new collaborations, especially to establish clear roles and expectations, ensure equitable partnerships with those in more powerful roles and institutions, and ensure that their expertise and contributions are fully recognised.

8. **Signpost funding and opportunities to researchers better.** While the absolute availability of research funding is a major constraint, assisting researchers to find and interpret funding calls and submit well-written proposals to the right funders can ensure that they benefit more from the funding that is available.

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