Open Access in developing countries – attitudes and experiences of researchers

Authors: Andy Nobes[ab]*, Siân Harris[ac]

*Corresponding author: anobes@inasp.info

[a] INASP, 2/3 Cambridge Terrace, Oxford OX1 1RR, UK
[b] orcid.org/0000-0002-1472-7898
[c] orcid.org/0000-0001-5737-3551

Abstract

Open Access is often considered as particularly beneficial to researchers in the Global South. However, research into awareness of and attitudes to Open Access has been largely dominated by voices from the Global North. A survey was conducted of 507 researchers from the developing world and connected to INASP's AuthorAID project to ascertain experiences and attitudes to Open Access publishing. The survey revealed problems for the researchers in gaining access to research literature in the first place. There was a very positive attitude to Open Access research and Open Access journals, but when selecting a journal in which to publish, Open Access was seen as a much less important criterion than factors relating to international reputation. Overall, a majority of respondents had published in an Open Access journal and most of these had paid an article processing charge. Knowledge and use of self-archiving via repositories varied, and only around 20% had deposited their research in an institutional repository. The study also examined attitudes to copyright, revealing most respondents had heard of Creative Commons licences and were positive about the sharing of research for educational use and dissemination, but there was unease about research being used for commercial purposes. Respondents revealed a surprisingly positive stance towards openly sharing research data, although many revealed that they would need further guidance on how to do so. The survey also revealed that the majority had received emails from so called 'predatory' publishers and that a small minority had published in them.

Introduction

Much has been discussed about Open Access (OA) and its potential benefits in other studies and pro-OA messages (Budapest, 2002; Schmitt, 2018; Tennant, 2016). In particular, the concept of OA to published peer-reviewed research has long been considered beneficial to researchers in the developing world (Nobes, 2016). However, much of the research into the impact of OA and much of the lobbying in favour of OA has come from North America and Western Europe. This criticism has continued with feedback into the development of Plan S (Hinchliffe, 2019; Debat & Babini, 2019).

A wide picture of author attitudes and experiences has been given by a number of large-scale international studies carried out by publishers such as Wiley (Wiley, 2015) and Taylor & Francis (Taylor & Francis, 2013, 2014). These studies showed a positive attitude and wide awareness of OA, but also showed concerns around lack of access to research from other researchers, commercial usage of research (particularly with reference to the least-restrictive Creative Commons licences)

and low usage of institutional repositories. They also show a difference in attitudes to OA depending on whether the researcher is in the role of reader or author. However, many such studies are dominated by Northern voices.

Less is known about the access and OA experiences of researchers in the Global South, although isolated studies have shown situations in particular countries or institutions (for example, Ouya & Smart, 2007; INASP, 2016a).

Localized studies are very useful for informing local policies and OA mandates at institutional, country or funder level, and reflect many of the findings from the global studies. However, research systems also need to be considered in a global context. Critics have argued that OA has not benefitted the developing world as much as anticipated, and not aided North-South/South-North communication and collaboration as originally intended, although more recently there have been some favourable accounts of the impact on the developing world (Iyandemye & Thomas, 2019; Tennant, 2019).

The international development organization INASP has long supported and championed access to published research in a range of ways (Gwynn, 2019). INASP programmes have supported Southern institutions to negotiate with subscription publishers for free and appropriately discounted access,[1] support and host local OA journals,[2] and support researchers to develop their research writing and publication.[3] The wide network of developing-country researchers in INASP's AuthorAID database provided an opportunity for in-depth research into attitudes to OA across Africa, Asia and Latin America, with a particular focus on early-career researchers.

The study reported here was prompted by conversations with researchers, librarians and others in many partner countries. Some in INASP's network have voiced strong support for OA (INASP, 2016b,c). However, discussions within the AuthorAID network and with librarians have also revealed concerns about data sharing, commercial usage and the risks of accidentally publishing in journals with dubious publishing practices (Nobes, 2017). INASP has also observed confusion between free access and OA and recognizes that projects that enable free access to e-resources in qualifying countries or institutions can add to this confusion.

Methodology

A survey was conducted in 2016 of researchers from the Global South to ascertain experiences and attitudes to OA publishing. These researchers were members of the AuthorAID network.[4]

The survey was conducted using SurveyMonkey and consisted of 24 questions exploring the demographics of the group, research and publishing practices, experiences of Open Access from the perspectives of being a reader and an author, attitudes to Open Access, and attitude to Open Data sharing.

The invitation to complete the survey was sent to approximately 3,000 researchers and these researchers made up the bulk of respondents. The survey was also shared on social media and 29 of the respondents came to the survey from Facebook or Twitter. As an incentive to complete the

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[1] www.inasp.info/theme/information-access
[2] www.inasp.info/project/journals-online-project
[3] www.authoraid.info
[4] INASP's AuthorAID database contains over 20,000 researchers (12,000 at the time of the survey) from 174 countries

survey, respondents were entered into a prize draw to win Amazon vouchers. It should be noted that this group was self-selecting.

In total, there were 507 respondents (response rate of 17%). The majority of questions were optional. Therefore there is some variation in the numbers given in the Results and Discussions section between different questions.

The survey respondents came from 73 countries, with 44% from Africa, 37% from Asia and 11% from Latin America. The lower response from Latin America is probably due to the survey only being conducted in English. In addition, 5% of respondents were from the Middle East and 2% from Eastern Europe.

In terms of gender, 74% of the respondents were male and 26% female. At the time of the survey (March 2016), women made up 31% of the AuthorAID membership, so gender balance of the responses was reasonably representative of the population from which the survey was taken, although may not be representative of the Global South research community as a whole. For future studies we will aim to improve the gender balance of responses. Also in line with the demographics of AuthorAID members, who are predominantly early-career researchers, 38% of respondents were aged 24–34, 35% were aged 35–44 and 15% were aged 45–54. Respondents were distributed between medicine and health (33%), social sciences (32%), STEM (29%), and arts and humanities (6%).

It should be noted that the respondents were self-selected from the AuthorAID network and completed the survey online. The authors therefore assume that the respondents have at least a baseline experience of digital technology and some awareness of research communication needs (Hrdličková, 2017). In addition, some survey questions could have been worded differently to avoid ambiguity.

Results and discussion

The survey of researchers in the Global South revealed a wide-ranging picture of attitudes to and awareness of Open Access. Results fall into the main topics of use of OA literature, publishing in OA journals, OA awareness, and related issues, including licensing terms and data sharing.

Access to academic journals
Survey respondents were asked about their access to academic literature. In response to the question "Do you have access to all the academic literature you need to carry out your research?", only 8% agreed, although 51% chose the less emphatic option of "mostly, but some literature is not accessible". In contrast, 34% said most literature is *not* accessible and 7% said they had very little or no access at all to the academic literature they needed (Table 1). This seems to suggest that there is still a problem with access to literature in developing countries. However, it is worth bearing in mind Harle's (2010) research from universities in Malawi, Kenya, Rwanda and Tanzania, which uncovered a poor awareness of what resources were available. That study found that, on average, 72% of journals reported as 'unavailable' were actually available at those universities. Harle concluded that it was not the availability of scholarly information that was the problem, but rather the awareness of the e-resources available. The same research found that 29% of researchers self-reported an unsatisfactory or 'non-existent' awareness of e-resources. It should be noted that Frass et al. (2013) found that even researchers in 'developed' countries reported problems with access; they found that, in response to the statement 'Researchers already have access to most of the articles they need', 37% agreed and 38% disagreed.

Discussions between INASP and partners, and internal surveys within our networks, have also revealed gaps in awareness of e-resource availability through the developing-world access initiatives established by INASP, Research4Life[5] and EIFL,[6] as well as through OA content. Discussion of this awareness issue, and activities to address it, is outside the scope of this paper. However, it is clear that many developing country researchers are not finding the research literature they need for their own research.

Table 1: Do you have access to all the academic literature you need to carry out your research?

Yes	41
Mostly, but some literature is not accessible	247
Some – most literature is not accessible	161
Very little or none at all	33

Figure 1: Do you have access to all the academic literature you need to carry out your research?
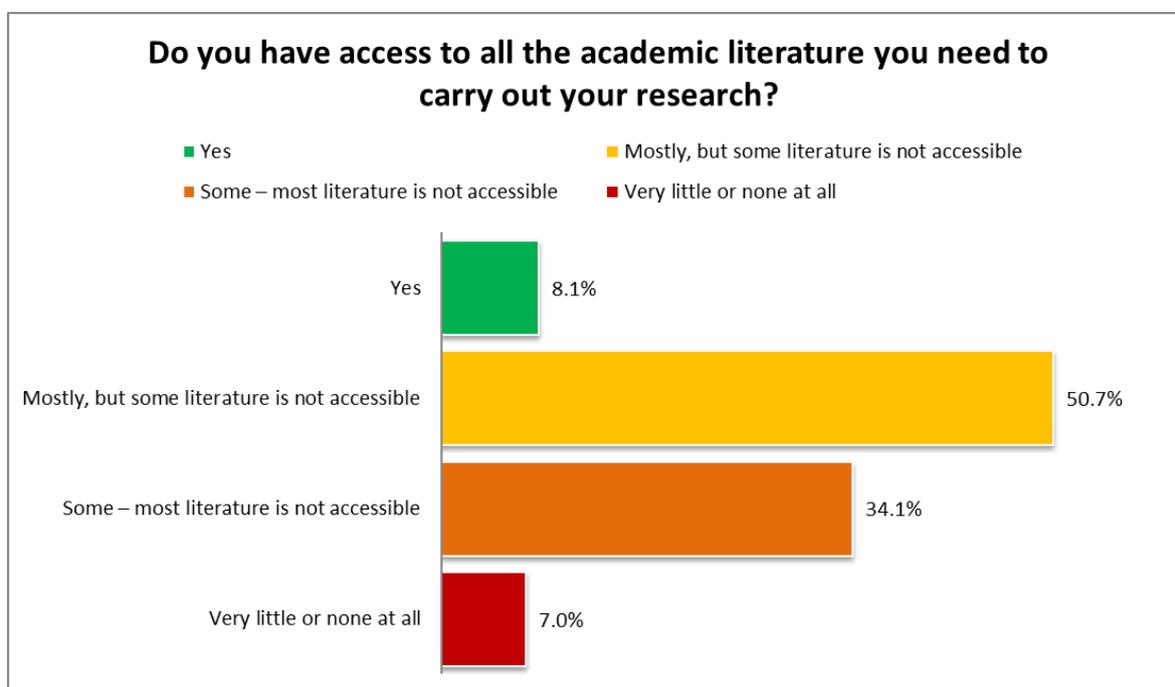
Searching for literature – sources used

When it comes to finding research literature, the survey reflected the earlier findings of Harle (2010) that Google was the most popular way to search for literature. In our study, 89% of respondents said they use it always or often (rising to 99% when people who use it sometimes or rarely are included). Google Scholar was the second most popular source, with 70% of people saying they used it always or often (rising to 97% when people who use it sometimes or rarely are included). Publisher websites came third with 56% using these methods used always or often, slightly ahead of 'other web services' such as ResearchGate, Academia, Mendeley and social media with 52% using them always or often (Table 2). It is worth noting that many of these platforms link to free versions of content. Other sources, such as university libraries and websites, other information services, both

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[5] www.research4life.org

[6] www.eifl.net

international and local, were less used. However, all of the sources asked about were used in some way by over 50% of respondents.
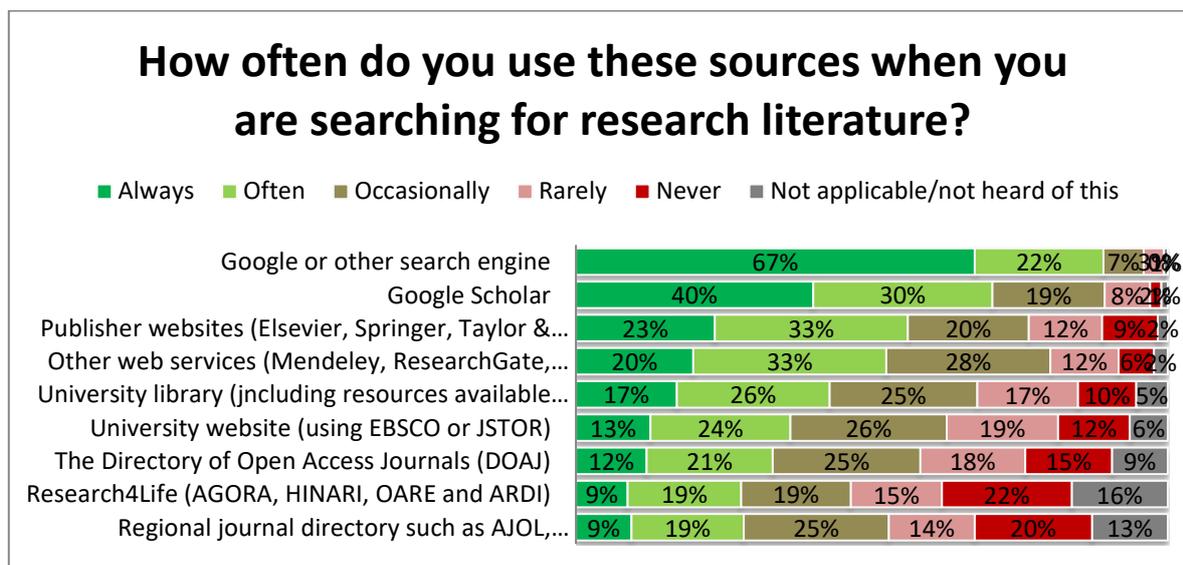
There were no respondents who reported not using any search facilities. Searching via the developing-world access initiative Research4Life was low but usage will vary depending on local access to those schemes (for example, 25% of respondents were from either Nigeria or India and neither of these countries have free access to resources via HINARI/AGORA). Some other local search tools may be limited by barriers such as language and awareness.

The high usage of Google above other searching methods is unsurprising, but potentially problematic. In Harle's 2010 study, which found that 73% of researchers used Google to find journal content, this was suggested as one of the most common reasons for the 'under-discovery of subscription resources' as it often caused users to bypass the 'correct' access points. As it currently stands, the complex system of authorisation portals and systems is a matter of contention for many, and makes accessibility more difficult (Powell, 2015). Tambo et al. (2016) argue that this in itself is an argument for universal OA. However, it's clear from other local studies that researchers' information searching and internet navigation skills also need significant improvement (Dulle 2010; Emojorho et al. 2012; Mohammed 2014, Harle 2010), and there needs to be more awareness of library resources and OA resources such as DOAJ (Mohammed 2014).

Table 2 – "How often do you use these sources when you are searching for research literature?"

Source	Always	Often	Occasionally	Rarely	Never	Not applicable/not heard of this
Google or other search engine	67%	22%	7%	3%	0%	1%
Google Scholar	40%	30%	19%	8%	2%	1%
Publisher websites (Elsevier, Springer, Taylor & Francis, Wiley, Emerald, Sage)	23%	33%	20%	12%	9%	2%
Other web services (Mendeley, ResearchGate, Academia.edu, social media)	20%	33%	28%	12%	6%	2%
University library (jncluding resources available through INASP)	17%	26%	25%	17%	10%	5%
University website (using EBSCO or JSTOR)	13%	24%	26%	19%	12%	6%
The Directory of Open Access Journals (DOAJ)	12%	21%	25%	18%	15%	9%
Research4Life (AGORA, HINARI, OARE and ARDI)	9%	19%	19%	15%	22%	16%
Regional journal directory such as AJOL, BanglaJOL, SLJOL, SciElo	9%	19%	25%	14%	20%	13%
My supervisor or colleague	8%	23%	34%	22%	9%	4%

Figure 2 – "How often do you use these sources when you are searching for research literature?"

How often do you use these sources when you are searching for research literature?

■ Always ■ Often ■ Occasionally ■ Rarely ■ Never ■ Not applicable/not heard of this

Source	Always	Often	Occasionally	Rarely	Never	N/A
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Google Scholar	40%	30%	19%	8%	2%	1%
Publisher websites (Elsevier, Springer, Taylor &…	23%	33%	20%	12%	9%	2%
Other web services (Mendeley, ResearchGate,…	20%	33%	28%	12%	6%	2%
University library (jncluding resources available…	17%	26%	25%	17%	10%	5%
University website (using EBSCO or JSTOR)	13%	24%	26%	19%	12%	6%
The Directory of Open Access Journals (DOAJ)	12%	21%	25%	18%	15%	9%
Research4Life (AGORA, HINARI, OARE and ARDI)	9%	19%	19%	15%	22%	16%
Regional journal directory such as AJOL,…	9%	19%	25%	14%	20%	13%

Usage of institutional repositories

Institutional repositories (IRs) also play an important role in making research papers publicly available and there have been many initiatives to develop IRs in developing countries, particularly in Africa. We therefore we included a question to investigate researchers' understanding of IRs. Over a decade ago, Swan and Brown (2007) reported that amongst UK researchers, nearly three quarters were unaware of whether their institution had a repository and, where there was awareness of a repository, only 40% had deposited in it. In our study, 56% were aware of their institution's repository, with 34% actually accessing it.

Our results are more encouraging than the more local-scale studies. Lwoga's (2013) Tanzanian research found that 36.6% were aware of their IR, with 20% only being familiar with the concept of self-archiving. In Kenya, Mutwiri reported a 44.9% awareness, In the Caribbean, Iton and Iton (2016) reported only 22% awareness, and in Iran, Khalili (2012) only found 10.1% who knew about IRs. However, on a global level, Frass et al (2013) reported that global researchers use IRs frequently for searching (over 50%).

Our question could not explore whether the lack of awareness of an IR was due to the lack of an IR or due to, for example, poor communication. Only 2% explicitly stated that their institutions did not have an IR, although 35% were not sure if their institution had an IR or not. Lwonga and Questier (2014) reported that IR usage was low in Tanzania due to there not being many IRs in general, and lack of awareness of rights to self-archive. Islam and Ahkter (2013) reported that IRs are still at an infancy stage in Bangladesh, with even librarians unaware or uncomfortable with the concept.

In terms of depositing, 17% had deposited their work in their institution's IR. However, the nature of the demographics of the respondent group (dominated by early-career researchers) meant that many had not yet published a paper.

There have been several studies that attempted to measure the percentage of global researchers who deposited their work in an IR. Wiley's 2015 survey data revealed that 43% had archived or deposited their research (with 57% of those respondents having deposited in an IR and 43% on their

own web page). Creaser (2010) reported that just over half had self-archived, yet Frass et al (2014) only reported 23% posting to an IR. In local studies, Lwoga's (2013) Tanzanian study reported that 26.8% had self-archived and Mutwiri (2014) found 20.9% depositing in an IR. However, in many of these studies, there is a variation in terms and terminology in the questions asked (for example, 'self-archiving' is a much broader term than 'depositing in an IR').

Since the study was conducted, the landscape has been evolving rapidly, with the emergence and growth of a plethora of e-print (pre-print and post-print) servers and aggregation/discovery services such as unpaywall.[7] Future studies should take this into account and investigate attitudes and knowledge towards the different aspects of self-archiving and usage of Green OA, as well as remembering that there are varying regional perspectives.

Table 3 – "What experience have you had with institutional repositories?"

I am not aware of my institution's digital repository	35%
I am aware of my institutions digital repository but I have not accessed it	22%
I have accessed my institution's digital repository	34%
I have deposited research in my institution's digital repository	18%
I have accessed material via another institution's digital repository	31%
I have accessed material via a repository directory such as OPENDOAR or ROAR	9%
My institution doesn't have one	2%

Figure 3 – "What experience have you had with institutional repositories?"
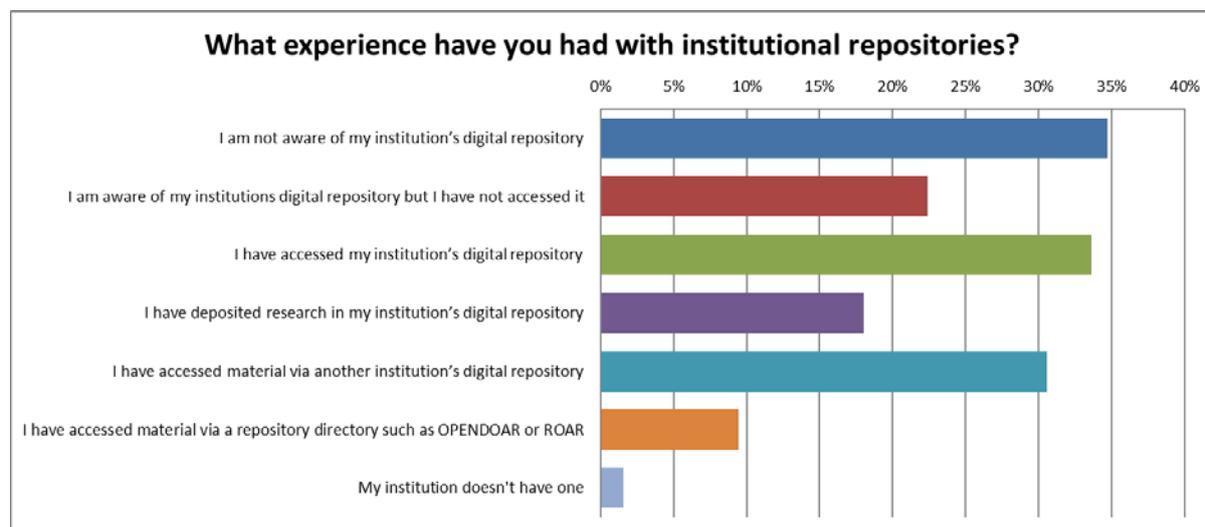
Attitudes towards OA journals

Questions concerning understanding and experience of the basic OA concept are rarely asked in larger studies because it is usually assumed that researchers in the study group have a good understanding of OA. In response to our question "Have you encountered and read Open Access journals or articles in your own literature searches and research?", 9% of the subjects said they had not encountered OA research, 8% were familiar with OA but didn't find it useful, and 13% were aware, but weren't sure how useful it was. However, the majority view was much more positive –

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[7] unpaywall.org

40% found OA research quite useful and 30% extremely useful. Free text responses revealed some very pro-OA researchers:

*"Open access journal articles can be easily disseminated to the audience, and users get up-to-date research output."*

"It's a very good source for intellectual [sic] for scholars in poor countries where research is poorly funded."

Previous localized studies have revealed mixed awareness of OA journals, ranging from 42.5% in Iran (Khalili, 2012) to 74.3% Kenya (Mutwiri, 2014) and 93.5% in Tanzania (Lwoga 2013). These studies tend to focus on groups in individual institutions, so can vary significantly. Interestingly, Lwonga's (2013) research also asked where researcher awareness came from, with 32.1% mentioning workshops and seminars and 27.6% publisher promotions. Clearly the institute in question had worked to improve awareness and had had support from publishers. Similarly, Mutwiri (2014) found that 19.7% of respondents had found out about OA from workshops and seminars. Lwonga and Questier (2014) later summarized that adoption of OA generally followed on from the attitude of the faculty.

Table 4 – "Have you encountered and read Open Access journals or articles in your own literature searches and research? How useful have they been to you?"

No, I've not encountered Open Access research	40
Yes, I am aware of Open Access research, but it hasn't been very useful for me	35
Yes, I am aware of Open Access research but I'm not sure how much has been useful to me	58
Yes, I have used Open Access research and it has been quite useful	181
Yes, I have used Open Access research and it has been extremely useful	132

Figure 4 – "Have you encountered and read Open Access journals or articles in your own literature searches and research? How useful have they been to you?"
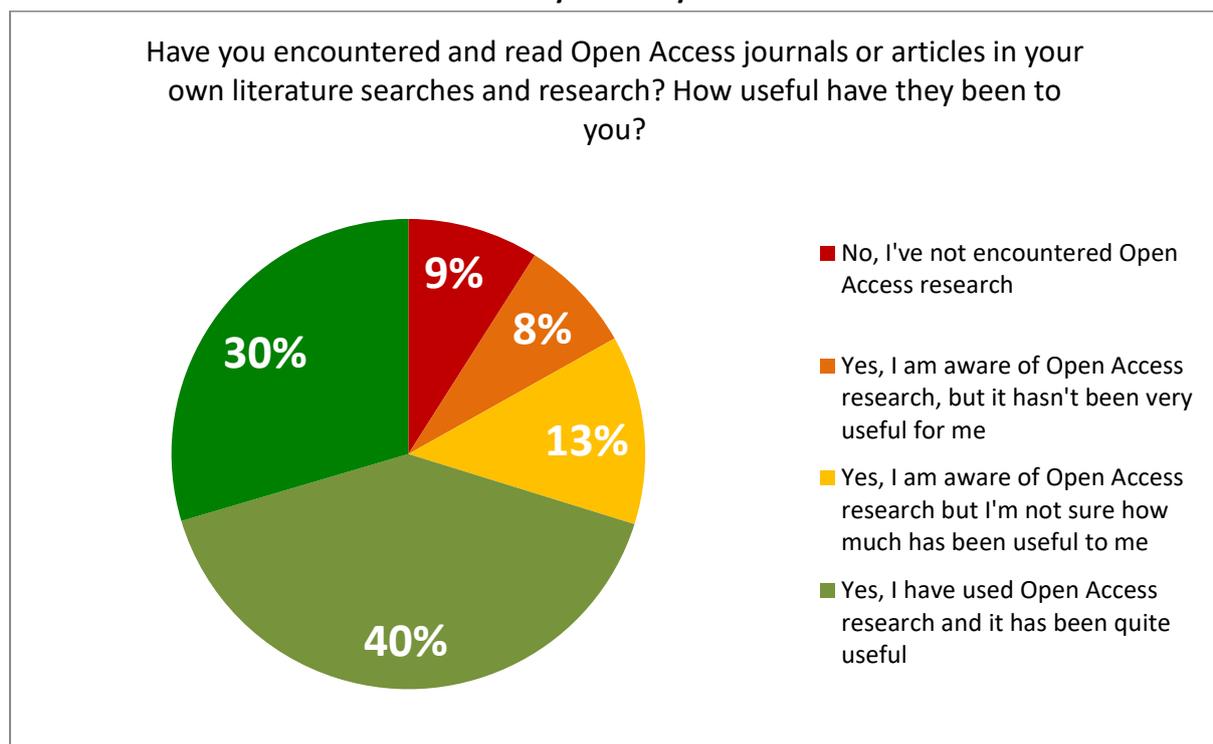
Perceptions of Open Access journals

The survey asked more about perceptions of OA journals. The results showed perceptions were generally good – and remarkably consistent - across all areas, particularly quality of editorial board and reviewers (27% very good; 48% good) and quality of research (26% very good; 28% good). There was a slight drop in perception in reliability, trustworthiness and reputation, but overall, feelings were positive, with only a small number of respondents reporting a poor or very poor perception (Table 5).

These positive results contrast with other studies, which show less positive perceptions of OA journals around the world. Frass et al's (2013) study had 34% agreeing with the statement that OA journals were of a 'lower quality'. This can vary by discipline – for example Hahn and Wyatt (2014) found a strong scepticism of OA journals as lacking prestige and quality amongst business researchers. There is also a slightly negative view of OA journals by tenure and promotion committees, based on a fear of quality and peer review (Hurrell & Meijer-Kline (2011), although this was reversed in Nariani and Fernandez's (2012) study.

Local studies have backed up this scepticism. Shuva and Tasir's (2016) Bangladeshi survey found agreement that OA generally lead to higher citations, collaborations and fast publication, but that 55% of Bangladeshi researchers would chose print-only journals due to the poor perception of OA by university authorities that they were not a 'widely accepted platform for research'. Furthermore, 62% thought that OA journals were 'not always peer reviewed'. Similarly, in India, Singson et al (2015) reported that 45% had a negative perception of OA journals with 40% believing they 'lacked quality'.

Some comments in our study reflected this suspicion of Open Access journals:

"There are so many Open Access journals which are not credible and do publish papers without even reviewing them. No comments are provided to improve the submitted papers."

However, some critics seemed to be aware that there was a clear distinction between reliable and 'predatory' Open Access journals:

"It depends on who is the publisher of the Open Access journal. I mean if it is published by Elsevier, Emerald, SAGE, I would say the quality of editorial board and reviewers, reliability as well as all the points you mentioned would be in between very good and good. However, if a journal is published by a predatory publisher, I would say the quality and other factors would be very poor or poor."

This stronger trust of Open Access journals from large, Global North-based publishers is a challenge for Southern journals. It reflects other observations by INASP (Murray and Cumming, 2017) and is an important area for further exploration.

Table 5 – "What is your perception or experience of Open Access journals?"

	Very good	Good	Average	Poor	Very poor
Quality of editorial board & reviewers	116	202	81	15	7
Quality of research	112	203	91	9	6
Reliability	92	188	115	18	8
Trustworthiness	85	189	114	26	7
Reputation	84	171	132	24	10
Response times to authors	90	167	133	23	8

Figure 5 – "What is your perception or experience of Open Access journals?"
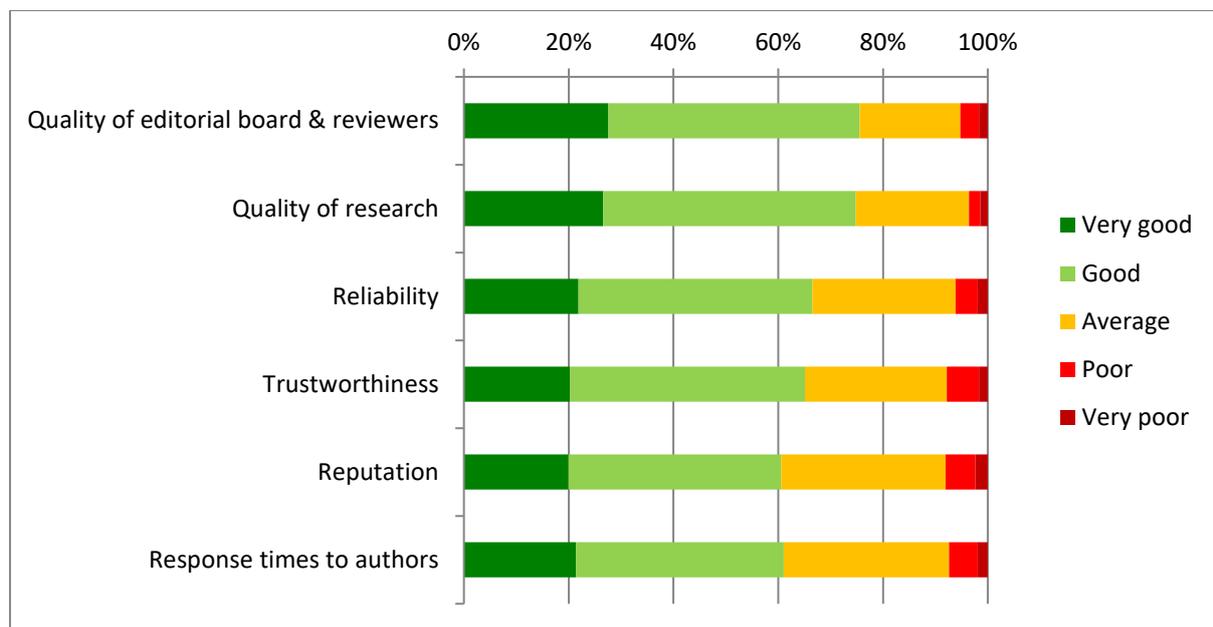
What is most important when looking for a journal?

In addition to exploring OA as a means to access research, this survey also explored researchers' experiences of OA as a way of sharing their own work. In response to the question "When looking for a journal to publish in, what is most important?", "Relevant to my discipline" was the most-selected answer. This was followed by journal impact and journal reputation. Also important were journal indexing and peer review quality. Despite all the positivity about OA in the survey comments, this came in seventh place, below journal readership. Only 19% of respondents choose OA in their top four decision factors (Table 6).

This is similar to other studies, at both national and international levels. Rodriguez (2014) similarly found that prestige, relevance and Impact Factor were top priorities, with OA bottom. Iton and Iton's (2016) Caribbean study saw reputation and Impact Factor top, way above 'free access'. Adjei (2016)'s Ghanaian study is a rare exception, with OA a close second to journal reputation, 'no APC' in third and indexing coming last. That particular study was a small sample (67) of researchers attending a research writing workshop, so might be an outlier.

If researchers choose, or need, to publish specifically in an OA journal the same traditional issues are still seen as important – Nariani and Fernandez (2012) found that indexing and Impact Factor were the most common considerations in choosing an OA journal. Similarly, Shuva and Tasir (2016)'s Bangladeshi study found that "…researchers prefer to publish in OA journals that possess qualities of prestige and editorial practice associated with traditional international journals" – peer review process and impact factor were seen as the most important motivational factors when publishing in OA journals. Our question did not make it clear if we were talking about considerations for publishing in OA or subscription journals, but we suspect the results may have been very similar.

Overall, the results found that developing country authors face the same pressures to publish in high impact, high reputation journals as other researchers around the world, despite many positive feelings toward Open Access.

Table 6 – "When looking for a journal to publish in, what is most important? Please rank according to importance, with (1) being most important and (8) being least important"

	1	2	3	4	5	6	7	8	TOTAL	SCORE
Reputation of journal	15.01% 56	17.16% 64	19.30% 72	11.80% 44	11.26% 42	11.26% 42	10.46% 39	3.75% 14	373	5.18
Whether the journal is indexed	12.87% 48	15.82% 59	12.60% 47	10.99% 41	9.92% 37	17.43% 65	14.21% 53	6.17% 23	373	4.71
Journal impact factor	23.32% 87	18.23% 68	15.01% 56	12.60% 47	10.19% 38	8.58% 32	7.51% 28	4.56% 17	373	5.53
Whether the journal is Open Access	4.56% 17	6.17% 23	9.65% 36	8.58% 32	14.48% 54	16.35% 61	22.79% 85	17.43% 65	373	3.50
The quality of the peer review	9.38% 35	13.67% 51	16.35% 61	18.23% 68	16.35% 61	14.21% 53	7.77% 29	4.02% 15	373	4.88
The relevance to my discipline	26.81% 100	17.16% 64	12.33% 46	17.43% 65	9.92% 37	5.36% 20	5.90% 22	5.09% 19	373	5.68
The readership of the journal	3.75% 14	8.85% 33	9.92% 37	13.67% 51	19.57% 73	18.23% 68	16.09% 60	9.92% 37	373	3.95
The country the journal is published in	4.29% 16	2.95% 11	4.83% 18	6.70% 25	8.31% 31	8.58% 32	15.28% 57	49.06% 183	373	2.56

Figure 6 – "When looking for a journal to publish in, what is most important? Please rank according to importance, with (1) being most important and (8) being least important"
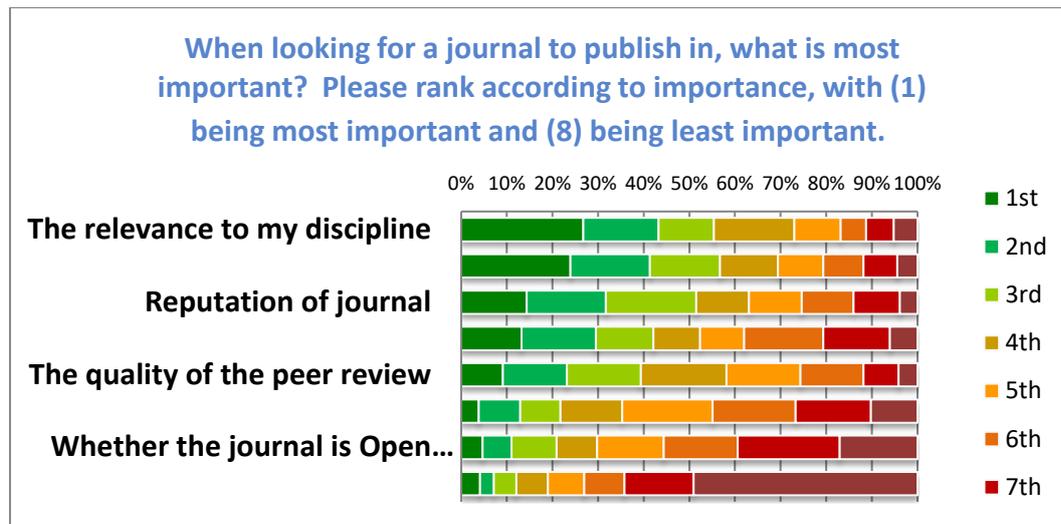
Publication record of participants

When looking at the publication records, most of the survey respondents (72%) had published papers, and these authors had roughly equal experience of publishing in subscription and OA journals – 17% had only published in subscription journals, and 11% had published only in OA journals, with 44% having published in both. Overall, 55% of the total respondents to this question had published in Open Access journals, or 76% of those who have published at least one paper (Table 7).

Many surveys have shown that there tends to be a mismatch between researcher's usage and publishing via OA. Frass et al (2013)'s respondents were undoubtedly keen to use OA (50%+ searched IRs regularly, for example), but only 21% had published a paper via OA (although many indicated they would do so in future). Smaller studies also reflect this. Khalili (2012) found that 58.3% of Iranian researchers were readers of OA, but only 27.2% were authors via OA. Similarly, Lwonga and Questier (2014) reported that 38.9% had disseminated their work via OA but 64.4% had used OA outlets to find information. 75.5% of Mutwiri's (2014) Kenyan researchers have used OA journals but only 27.5% had published in OA journals.

In our study, 82% claimed to use OA research (and 70% found it useful), but the study also showed that respondents were frequent publishers of OA research – 55% of respondents had published a paper in an OA journal (which is 76% of those who had published any paper). Although we also saw a gap between percentage of users and publishers of OA, it is less marked in our study than previous findings.

Table 7 – "In the past three years how many research articles have you published?"

Authors with no publications	28%
Authors who have published in only subscription journals	17%
Authors who have only published in only OA journals	11%
Authors who have published in subscription and OA journals	44%

Figure 7 – "In the past three years how many research articles have you published?"

In the past three years how many research articles have you published?

- No publications — 28%
- Publications in subscription journals — 17%
- Publications in OA journals — 11%
- Publications in subscription and OA journals — 44%
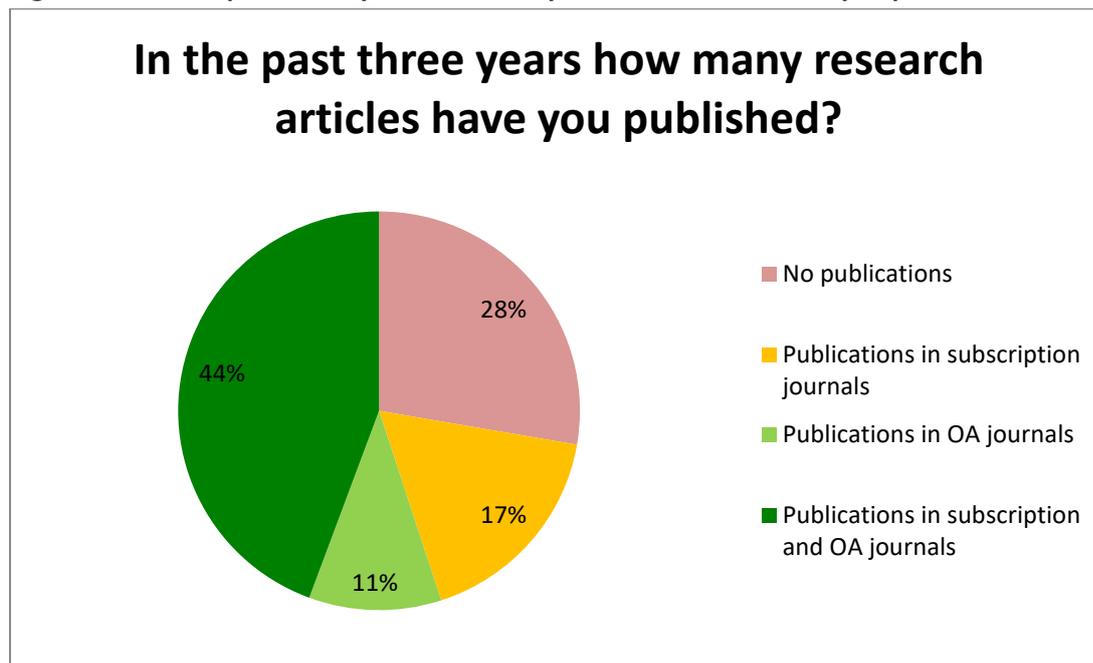
Publishing in OA journals with/without APCs

The survey also looked at experiences with Article Processing Charges (APCs), which some journals charge for publishing papers. Of those who had published in an OA journal, 31% had published only in journals that had charged an (APC), 29% had only published in journals that did not charge an APC, and 40% had published in a mixture of APC and non-APC OA journals. In total, 71% of those who had published in an OA journals had paid some kind of APC in the three years leading up to the survey (Table 8).

One free-form comment in the survey was:
"I try as much as possible to publish Open Access, particularly those that do not charge APCs as I cannot afford that."

Another said:
"Open Access Journals should not charge an Article Processing Charge (APC) or have waiver policy for authors from developing countries"

The percentages we saw were surprisingly high considering the possibilities for developing-country authors to apply for APC waivers with many large publishers (although around a quarter of our survey respondents were from India or Nigeria, which are ineligible for most waivers) and the possibility that researchers publishing as a result of a collaboration may not have been aware of APC payment,. The percentage from our survey was slightly higher than the percentage from the Wiley (2014) survey, which found that 63% had paid an APC, while Dallmeier-Tiessen's very large OA survey (2011) found that 50% of respondents paid no APC for their last OA article, and a further 25% paid an APC of less than £1000.

Table 8 – Types of OA journals published in

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Authors publishing in OA journals charging APC	31%
Authors publishing in OA journals with no fee	29%
Authors publishing in OA journals with APC and without	40%

Figure 8 – Types of OA journals published in
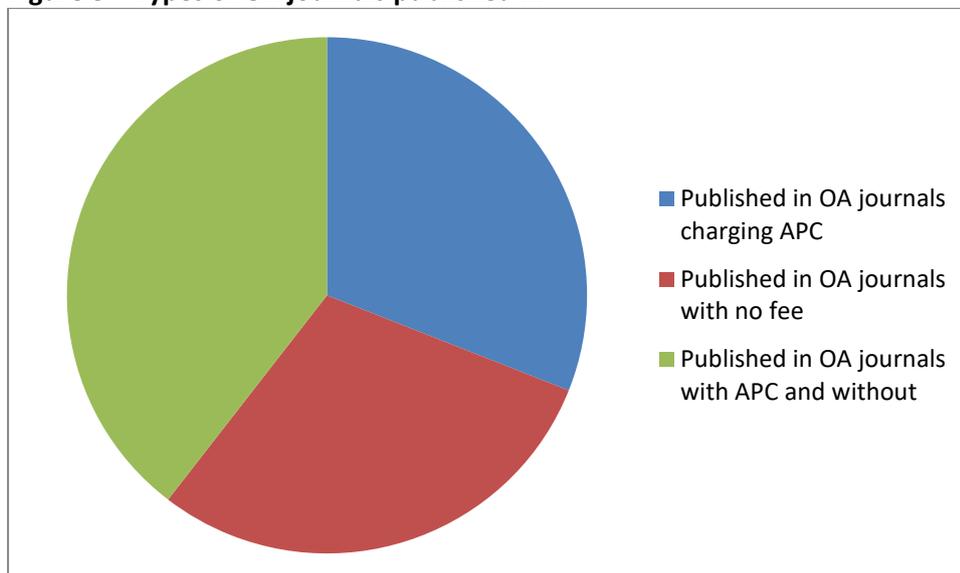
As our study focused only on researchers in the Global South – with a particular slant towards early-career researchers – our findings raise particular questions and concerns about the effectiveness of waiver policies. Indeed only 14% of our respondents said they had received an APC waiver, but again, this may reflect confusion over what constituted 'no APC' or APC waivers (Table 9). This contrasted with 60% of the 181 people who answered this question in our survey who reported that they had paid the APCs themselves, 18% said their university or institution paid the APC, and 14% said they had received external funding.

The high percentage of our respondents that had paid APCs was also unexpected given that developing-country researchers may be more likely to publish in local or national journals, which are much more likely to be APC-free, so called 'platinum' OA (Nobes 2016). Future research should ascertain the nationality of OA journals to see how common this is. Further research into the size of these APCs and how they vary depending on the country of publication would also be interesting.

Table 9 - How did you pay the APC?

I paid the APC myself	60%
I received a waiver for the APC	14%
I received external funding to pay for the APC	8%
My university/institution paid for the APC	18%

Figure 9 - How did you pay the APC?

How did you pay the APC?

Legend:
- I paid the APC myself
- I received a waiver for the APC
- I received external funding to pay for the APC
- My university/institution paid for the APC

(Slices: 60%, 14%, 8%, 18%)
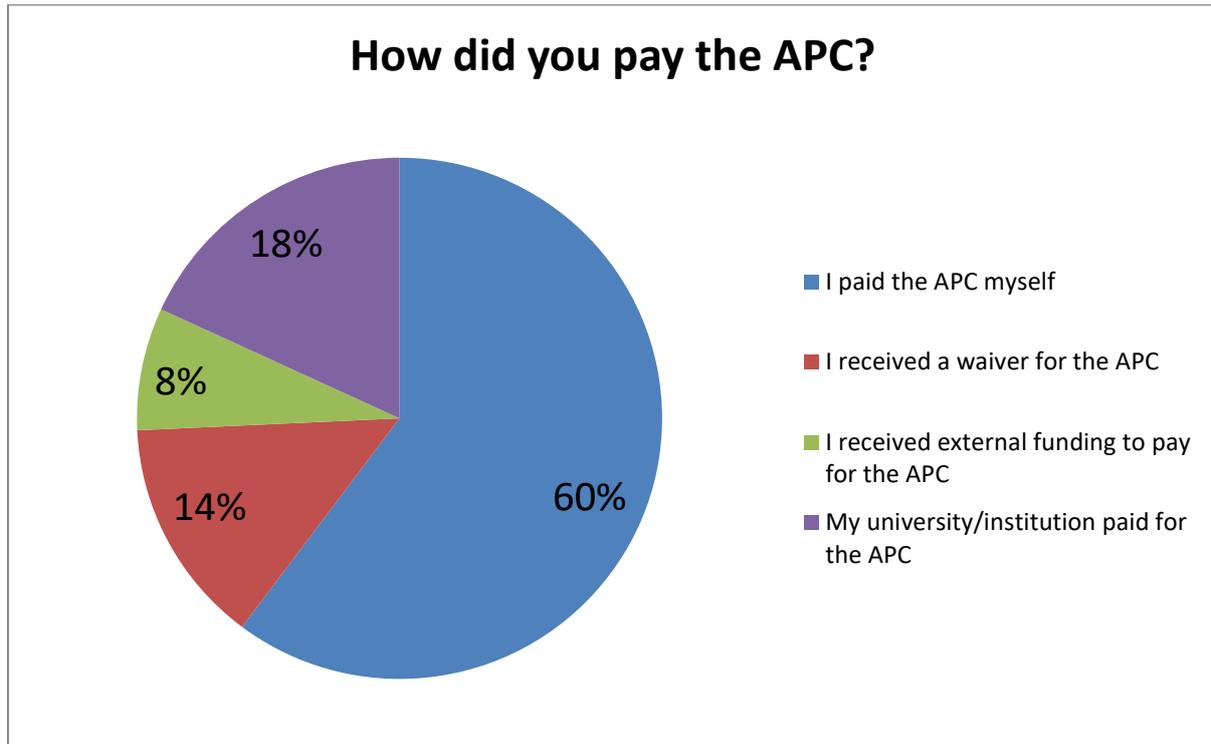
Researcher views on sharing and reuse

Respondents were asked about their views on the rights of readers to use their research in a number of different ways. They were generally happy for research to be used for teaching and education (provided they were properly credited), with 83% agreeing, 15% suggesting there should be some restrictions on this and only 1% disagreeing. There was also a positive reaction to sharing research with their friends and colleagues, with 73% agreeing. There was less positivity for the copying of articles, with 57% agreeing and 35% believing that there should be restrictions (perhaps in terms of quantity) (Table10).

Authors were much less positive about derivatives and commercial usage. Just under half thought readers should be able to repost their research in another medium, such as a blog or book chapter, and 34% thought readers should be able to adapt or change their content for their own uses – 34% disagreed. A majority (52%) thought that readers should not be allowed to use research for commercial purposes, versus only 18% who agreed.

In summary, people are reasonably happy for people to use their article for teaching and sharing with colleagues, for example, but much less happy with adapting the content and very unhappy with commercial usage.

Table 10 – "Readers should be allowed to…"

|	AGREE	AGREE WITH SOME RESTRICTIONS	DISAGREE	TOTAL	WEIGHTED AVERAGE
Readers should be allowed to make copies of an article	57.64% 215	34.85% 130	7.51% 28	373	1.50
Readers should be allowed to share an article with friends/colleagues	72.92% 272	24.13% 90	2.95% 11	373	1.30
Readers should be allowed to repost the article on another medium such as on a blog, or as a book chapter (crediting the author/original source)	48.92% 182	32.80% 122	18.28% 68	372	1.69
Readers should be allowed to adapt or change the content for their own uses (crediting the author/original source)	34.86% 129	31.62% 117	33.51% 124	370	1.99
Readers should be allowed to use articles for teaching/education (crediting the author/original source)	83.38% 311	15.28% 57	1.34% 5	373	1.18
Readers should be allowed to reuse articles for commercial purposes (crediting the author/original source)	18.55% 69	30.11% 112	51.34% 191	372	2.33

Figure 10 – "Readers should be allowed to…"
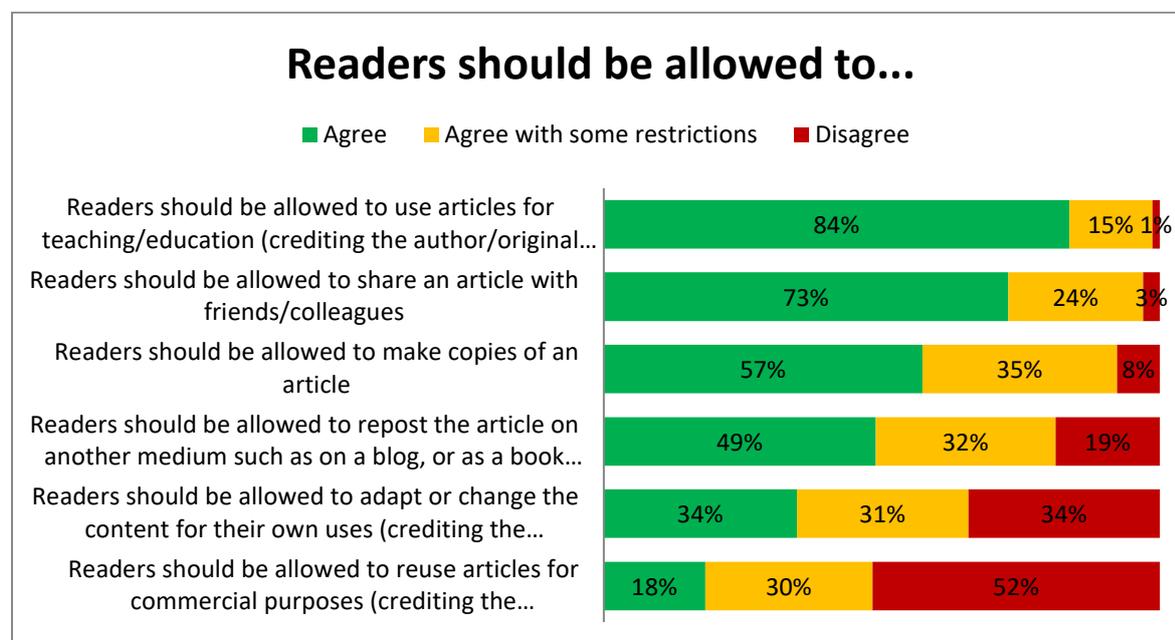
Creative Commons

Respondents were also asked on their views of Creative Commons licences. We found that 60% were familiar with these licences, with 20% of that number having already published using them (Table 11).

Table 11 – Knowledge of Creative Commons Licences

No, I have not heard of Creative Commons before this survey	41%
Yes, but I've not used a Creative Commons licence in my work	40%
Yes, I've used a Creative Commons licence in my work	20%

Figure 11 – Knowledge of Creative Commons Licences

Are you familiar with Creative Commons licences?

- **No, I have not heard of Creative Commons before this survey** — 40%
- **Yes, but I've not used a Creative Commons licence in my work** — 40%
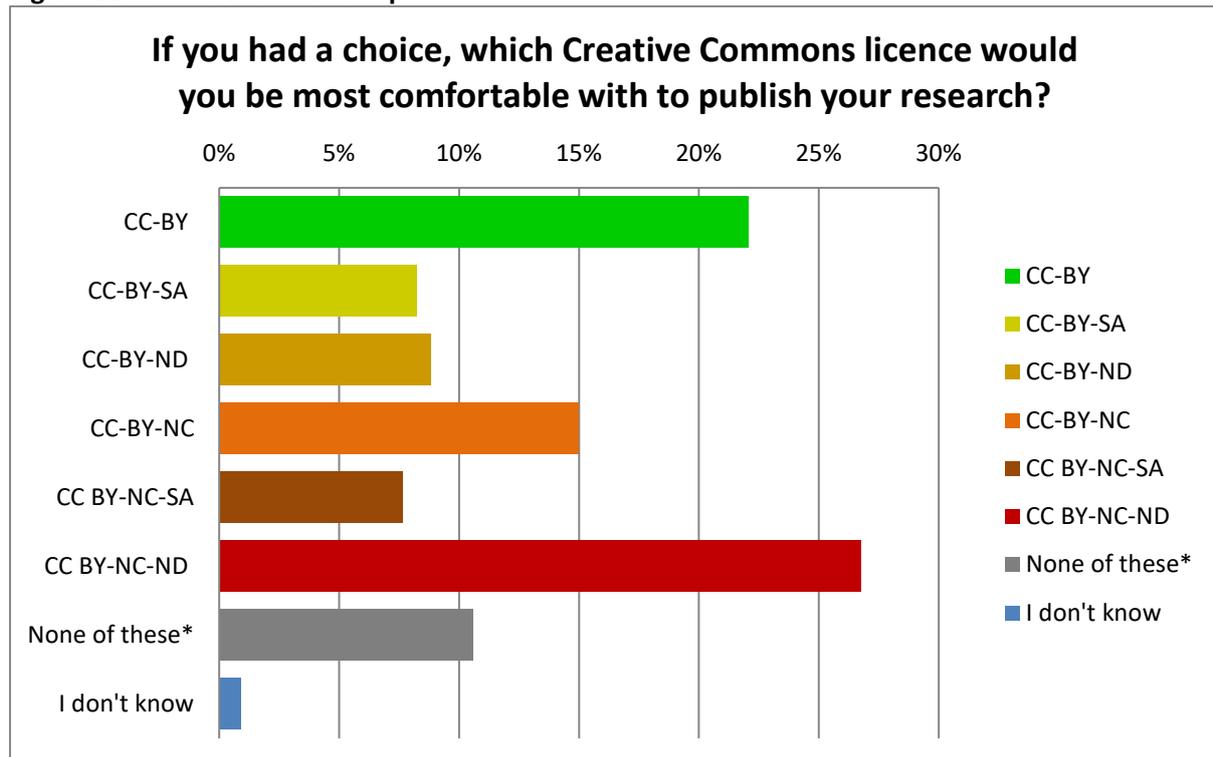- **Yes, I've used a Creative Commons licence in my work** — 20%
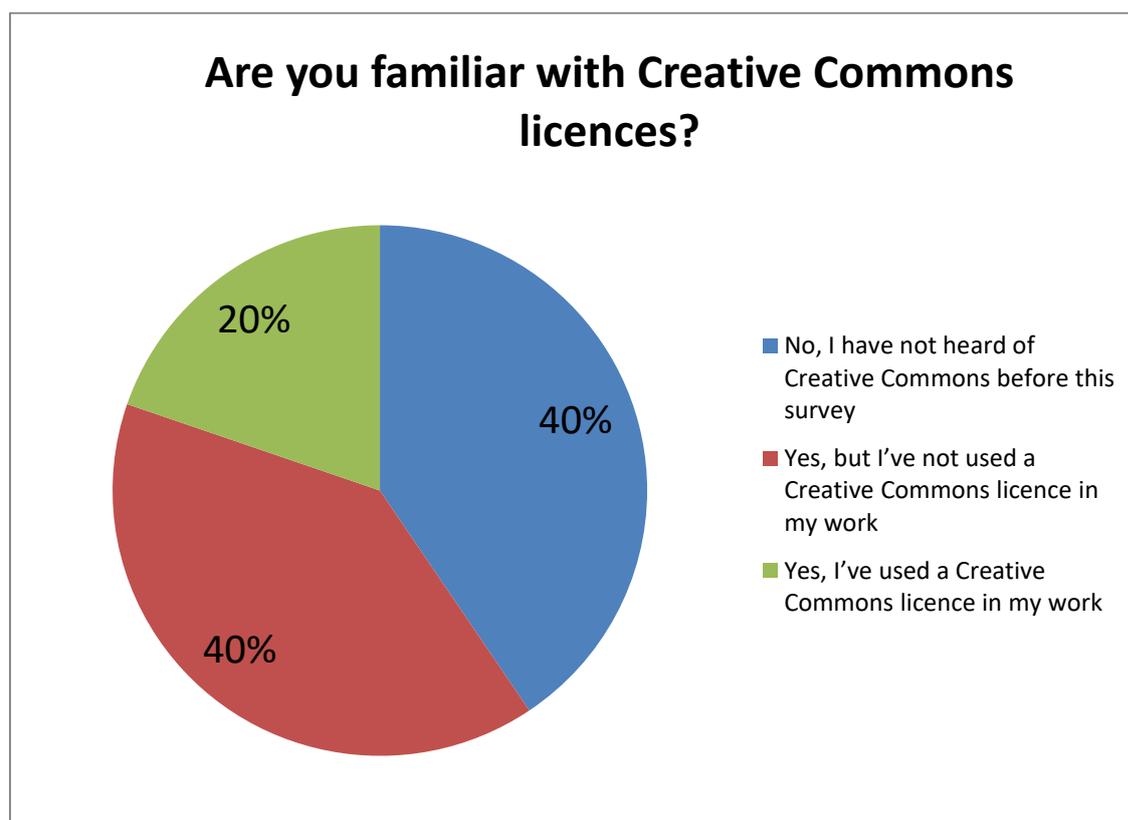
There was a significant difference of opinion on the merit of the different types of licence, however. The most popular was the most restrictive CC-BY-NC-ND licence, with 27%. However, the second most popular was the most open licence – CC-BY – with 22%, followed in third place by CC-BY-NC. 11% stated they did not want to choose a CC licence at all (Table 12).

In total, 60% chose a licence that had a non-commercial clause, reflecting the results of the previous question – that the majority have concerns about commercial usage of their work. However, it should be noted that all respondents had the opportunity to answer this question, irrespective of whether they indicated awareness of CC licences, and this could have skewed the results.

Table 12 – Creative Commons preference

CC-BY	22%
CC-BY-SA	8%
CC-BY-ND	9%
CC-BY-NC	15%
CC BY-NC-SA	8%
CC BY-NC-ND	27%
None of these*	11%
I don't know	1%

Figure 12 – Creative Commons preference

If you had a choice, which Creative Commons licence would you be most comfortable with to publish your research?

It is interesting to note the differences between the opinions on sharing and Creative Commons licences. There seems to be a small contradiction between 40% not choosing a licence with a NC clause (Table 12) and only 18% agreeing that their research could be used commercially (Table 10). This would suggest that many authors are unaware that the CC-BY licence does not protect against commercial usage. This contradiction is not unique to this study, however. For example, Frass et al (2013) found that 44% agreed with the statement "There should be no restrictions on reuse of research outputs", yet CC-BY was the least popular choice of licence.

As Van Noorden (2013) commented: "Researchers don't understand how publishing licences affect 'open' research papers, and that more work needs to be done to explain why licences matter… Even researchers who publish in OA journals want to place restrictions on how their papers can be re-used – for example sold by others for commercial profit".

Overall, there are differing opinions on the merit of the different Creative Commons licences, and a divide between researchers who were keen for their research to be shared as widely as possible and others who were worried about their research being misused, or financially exploited. There was also a lack of understanding of the commercial clause in Creative Commons licences, but this is by no means unique to developing country researchers.

**Perspectives on open data sharing**

Participants were then asked about their attitudes to open data sharing. The response was surprisingly positive. It was previously the opinion of the authors that developing-country researchers were unsure and even suspicious of the idea of sharing their data. However, the results showed that 36% had shared, or were going to share, their data. Another 44% were quite happy to share their data but were not sure how to do so. 11% were nervous about sharing their data, but only 9% said they did not want to share data (Table 13).

This represents a very high percentage of 80% who were willing to openly share their data. It is worth comparing with Wiley's survey on data sharing (Ferguson, 2014) that showed 52% of researchers having shared their data and 48% not, ranging from 55% sharing in Germany to a low of 36% in China.

Table 13 – Data sharing

I have, or I am going to openly share data from my existing research	36%
I am happy to openly share research data but I'm not sure how to do it	44%
I am nervous about openly sharing my research data	11%
I do not want to openly share research data	10%

Figure 13 – Data sharing
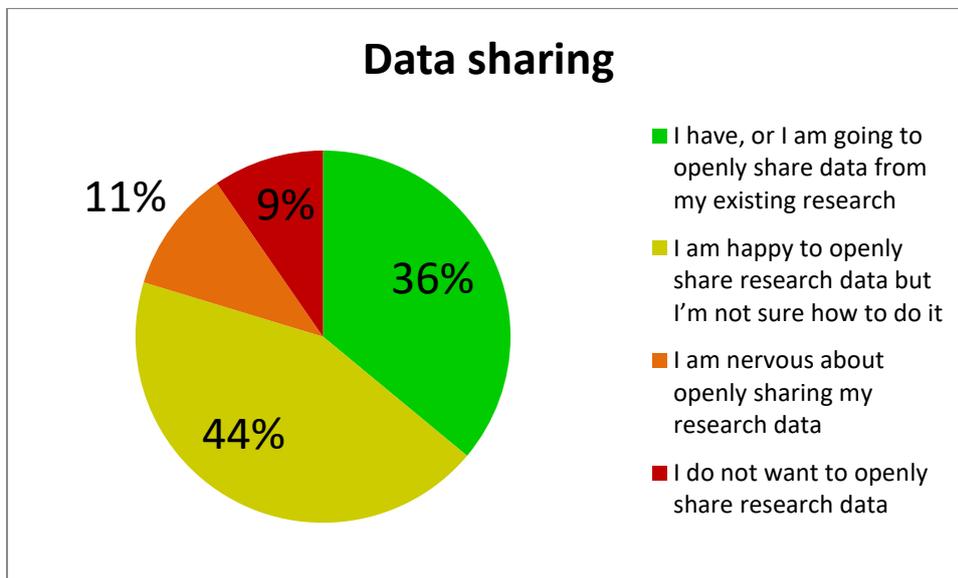
The results also recorded reasons for not wanting to share data, with the top reasons being plagiarism or lack of acknowledgment, ethics/confidentiality, or theft data (Table 14). Bezuidenhout and Chakauya (2018) have recently discussed the hidden incentives and disincentives for sharing research data among scientists in LMICs.

Overall, the results show that researchers are positive about data sharing, but need training in best practices on data management and sharing, as well as information on IP and plagiarism.

This topic warrants further research and will be the subject of a future study.

Table 14 – reasons given for not wanting to share data openly

Data being used without my acknowledgement	11
Ethics/confidentiality	9
Stealing data/publishing before I do	9
Plagiarism	7
I worked hard on gathering data	6
Worried about commercial exploitation	5

Journals with dubious publishing practices

INASP has experienced that 'predatory' journals are increasingly a problem for developing-country researchers, who are particularly vulnerable to inadvertently publishing in such journals (Tennant et al, 2019). In this study, 35% reported that they had no experience of them, but 56% reported that had received emails from predatory journals (the most common marketing strategy is to spam potential authors). Finally, 6% had reported actually having published in such journals. This is a major challenge but is outside the scope of discussion on this paper. INASP is working with other members of the Think. Check. Submit. committee, along with AuthorAID researchers, to understand the scale of the problem better and ways to address it (Think. Check. Submit., 2018).

Conclusions

This study found a mixed picture in terms of awareness, use and level of support for OA from researchers in Africa, southern Asia and Latin America. Access is still a problem for many researchers, but some of the access challenges come from lack of awareness. There are differences in attitudes to OA depending on whether researchers are using this model as readers or authors. We found a generally positive view of OA, but the pressure of "publish or perish" means that researcher priorities are still driven by concerns about Impact Factor and prestige above access.

The study also found positive attitudes to the sharing of research but concerns about commercial reuse. Similarly, there were positive attitudes to data sharing but a need for support.

The findings in this study broadly agree with previous studies but give a particularly international perspective of predominantly early-career researchers in the Global South.

The study deliberately covered a wide range of aspects of OA. Areas for deeper exploration in future studies include awareness and use of different licences, institutional repository use, open data and the extent of the challenge from journals with dubious publishing practices, as well as further analysis of this dataset by country and region.

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