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# Are Open Access Journals Trusted by Chinese Scholars?

XU Jie [1] DAVE Nicholas[2] SU Jing [1] ZENG Yuanxiang [3]

1 School of Information Management, Wuhan University, Wuhan 430072, China
2 CIBER Research Ltd., Newbury RG14 5DU, UK
3 College of Literature and Journalism, Sichuan University, Chengdu 610064, China

**Abstract**: A total of 686 Chinese researchers were surveyed about matters of trust arising from their scholarly use/reading, citing and publishing behavior. The questionnaire survey was proceeded and informed by two focus groups attended by two dozen Chinese researchers. The findings showed that Chinese researchers appeared lukewarm on the topic of OA journals as a whole. The quantitative research showed that some of them liked the principle of OA, but many were suspicious and confused about OA publications. In terms of diversity, younger researchers and biologists/life scientists were more in favor of publishing in OA journals. The biggest misunderstanding about OA journals is that Chinese scholars confused OA with the who-pays-will-get-published model which comes without peer review. The other common confusions included the belief that all OA journals were not properly peer reviewed and none was published by reputable publishers.

**Key words**: Open Access Journal; Trust; Chinese Scholars

## 1 Introduction

This is a work in progress and the presentation will contain updates. The research reported here was stimulated and influenced by CIBER's exploratory research on trust in scholarly communications conducted in 2012-2013 funded by the Alfred P. Sloan Foundation. The CIBER study, conducted in collaboration with the Center for Communication and Information Studies at the University of Tennessee Knoxville, examined how researchers assign and calibrate authority and trustworthiness to the sources and channels they choose to use, cite and publish in and discussed how they deal with the trust and authority consequences of the digital transition, especially in regard to changing digital behaviors, social media and open access publishing[1,2].

As a follow-up study focusing on Chinese scholars and in order to make the findings comparable, the research replicated the questions and methods of the CIBER study. Although the broad aim of the study was to investigate how Chinese researchers deal with the trust and authority consequences of the digital transition, the results reported here focus just on the impact of open access on their scholarly communications. So the principle research questions are to show: (1) are OA journals trusted by Chinese Scholars? (2) the reasons for their trust or distrust of OA journals.

With the government's support and promotion of OA, more and more Chinese academic libraries, research institutes, as well as scholarly publishers, have committed themselves to the OA cause[3]. Dozens of university libraries moved beyond their traditional role to perform as academic publishers, not only by collecting, preserving and disseminating intellectual outputs of the university researchers, teachers and students, but also by selecting, reviewing, evaluating and reorganizing internet resources, creating the meta-data records and developing a web resource navigation system[4]. Both the Chinese Academy of Science and Chinese Academy of Social Science introduced special policies to encourage and support their members to archive outputs in institutional repositories or publish papers in OA journals. As of 31 September 2013, a total of 59 journals published in mainland China were registered in the Directory of Open Access Journals (DOAJ).

An important question, of course, is whether the rapid development of OA movement changed the model of traditional scholarly communication and is bringing about a new environment in which scholarly information is freely available to all

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**First author**: XU Jie, Ph D, associate professor, specializes in scholarly communication. E-mail: xuj@whu.edu.cn
**Corresponding author**: ZENG Yuanxiang, Ph D, lecturer. E-mail: zengyuanxiang12@163.com

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users? Another is whether Chinese authors trust OA journals and recognize them as a reliable source for reading and citing scholarly information and a recognized channel to disseminate outputs?

OA journal is becoming a hot topic for many Chinese scholars and a lot of research works related to this topic were published. Many have discussed the current status (such as discipline, publisher, the journals' websites functionality, the way to access full text, etc.) of OA journals in China and identified key challenges and problems associated with Chinese OA journals[5-8]. Several researchers reported that OA has been changing the model of traditional scholarly communication and brought a free scholarly literature to a wider audience[9-10]. Scholars tend to believe that the development of OA journals have positive impact on scholarly communication [3]. As for commercial scholarly publishers, the business model was still not very clear[11].

Some studies particularly looked into OA journals in humanities and social sciences. Hu[12] analyzed 147 humanities and social sciences journals offering OA and identified the key challenge and problems associated with OA journals in the humanities and social sciences in China. He outlined that promoting OA movement and enhancing the functionality of OA journal websites were important strategies to develop OA journals in China. Also, he pointed out that the transition of humanities and social sciences scholarly journals from print to OA is extremely difficult. Guo, Xue & Li[13] compared the situation of humanities and social sciences OA journals in other countries and indicated that OA journals in humanities and social sciences were developing slowly in China. Their research result showed that there was a link between OA and citation, that is publishing with OA journals would increase the citing rate of individual papers.

Moreover, there wasan increasing number of bibliometric studies on OA journals related research outputs in the past decade in China[14]. Using Chinese National Knowledge Infrastructure (www. cnki. net) as the data resource, Zhao and Wu[15] identified a total of 1,364 articles (all in Chinese language) that related to OA (till January 10, 2013). They used co-word analysis method and strategic diagrams to detect the research themes of these articles and then found that: (1) influence of OA over the information sharing and scholarly communication, (2) comparative study of OA publishing and journals subscribing, (3) development strategy of OA, (4) quality evaluation of OA journals were the most extensively discussed topics by Chinese scholars.

All of the surveys and studies described above were limited to describing the current situation from a publishing perspective. Data were collected from OA journal platforms andbibliometrics analysis were conducted to provide a holistic view of the current status of OA journals in China. Thus, the existing research showed what the situation is, but didn't explain why it is like it is. It is therefore necessary to provide evidence from Chinese authors and explore how they are getting along with OA journals.

## 2 Methodology

The study utilized both qualitative and quantitative approaches in order to study Chinese scholars' attitudes and behaviors related to the trustworthiness of OA journals. The questionnaire developed and used by CIBER in the previous research was translated into Chinese and distributed to Chinese researchers. The questionnaire was distributed online via SurveyMonkey and Sojump. Publishers such as Springer, John Wiley and Sons, Inc., Sage Publication, Taylor & Francis sent out an invitation to Chinese authors to take part in the survey. The questionnaire was made available between March and May 2014. A total of 662 valid responses were collected. Participants were asked to rate the importance or agreement with 9 statements related to the trustworthiness of OA journals. By assigning a number to each point on the five-point Likert scales, it is possible to average all the responses to see if Chinese researchers trusted OA journals.

In order to scope the study and help structure the questions, two focus groups were run. These groups were held during the period of May 2014 to June 2014. In all a total of 24 researchers attended focus groups. Each group lasted 3 hours and 12 researchers attended. During the discussions, participants were asked the two groups of questions about OA journals and they were encouraged to discuss freely the related topics.

1) Knowledge of OA journals?

(1) Have they ever read/cited/published in OA journals?

(2) Do they read/cite/publish in OA journals? And why?

(3) What is the difference between OA journals and other journals?

2) What makes them trust or distrust OA journals?

(1)Do they check the publisher of OA journals?

(2) Do they trust properly peer reviewed OA journals?

(3) On what conditions will they read/cite/publish in OA journals?

## 3 Results

### 3.1 Demographics

In the all of 662 questionnaire respondents, men accounted for 78% of them all. The average age of the subjects was 33 years. Regarding subject fields, 54% were from the physical sciences, 26% biosciences, 16% social sciences and 4% humanities. Forty-six per cent worked in research intensive universities, 20% were from research institutes, 16% from

teaching intensive universities and 10% from hospitals or medical schools. The rest came from a miscellany of organizations. Although all respondents were Chinese some of them (15%) worked in other countries, including Canada, the United States, Japan, Taiwan, Thailand, Singapore, the United Kingdom, Vietnam and Germany.

For the focus group discussion, the demographics of participants are presented in Table1.

**Table 1 Focus Group Participant Demographics**

| Demographic | Item | N (total $n$=24) | Percentage |
|---|---|---|---|
| Academic level | research fellow | 5 | 21% |
| | PhD candidates | 17 | 71% |
| | Postdoc | 2 | 8% |
| Discipline | humanities | 7 | 29% |
| | social sciences | 7 | 29% |
| | physical science | 5 | 21% |
| | biological science | 3 | 13% |
| | chemical science | 2 | 8% |
| Age | <30 | 16 | 67% |
| | 30-39 | 7 | 29% |
| | 40-49 | 1 | 4% |
| Gender | male | 14 | 58% |
| | female | 10 | 42% |

## 3.2 Questionnaire Survey

Generally, Chinese scholars appeared lukewarm on the topic of open access, showing no great enthusiasm or negativity for that matter in the questionnaire survey (see the mean value of each statement inTable 2). They came closest to agreeing that open access helps poor countries to access scholarly publications (mean value=3.81), and tended to agree that peer reviewed OA journals are trustworthy (mean value=3.75). They also mildly disagreed with the implied criticism of open access publishing, which implies that Chinese researchers do not believe that the reason for not publishing (mean value=2.79) in an open access journal is question marks over quality.

**Table 2 Views of Chinese Researchers on Statements About the Quality and Trustworthiness of Open Access Journals (Mean Agreement Ranking)**

| | Rank | Statement | Mean Value* | Standard Deviation |
|---|---|---|---|---|
| Using and reading information from OA journals | 1 | Open Access publications that are peer reviewed are trustworthy. | 3.75 | 0.70 |
| | 2 | Checking to see the means by which it has been disseminated/published (e.g. in a subscription journal, an Open Access journal, a repository, a blog) | 3.22 | 1.25 |
| Dissemination and publishing in OA journals | 1 | Open Access journals make trustworthy research information accessible in countries where journal subscriptions cannot be afforded. | 3.81 | 0.75 |
| | 2 | I have no problem publishing in an Open Access journal if it is properly peer reviewed. | 3.63 | 0.70 |
| | 3 | I publish in an Open Access journal only if it is published by a reputable publisher. | 3.62 | 0.85 |
| | 4 | I don't publish in Open Access journals because they are of low quality. | 2.79 | 0.90 |
| Citing information from OA journals | 1 | I have no problem citing an article published in an Open Access journal if it has been properly peer reviewed. | 3.63 | 0.79 |
| | 2 | I prefer to cite articles published in an Open Access journal only if they are of a reputable publisher. | 3.34 | 0.98 |
| | 3 | I don't cite articles published in Open Access journals because they are of low quality. | 2.71 | 0.94 |

a. Researchers were presented with four statements and asked the extent to which they agreed with them. The scale was: Strongly agree (5), Agree (4), Neither agree nor disagree (3), Disagree (2), Strongly disagree (1). The higher the mean value the more important the activity.

**Table 3 Significant Differences of Attributes of Scholars in Different Ages/Disciplines When Publishing/Citing Research Work**

| Behavior | Reference Attributes | ages | | | discipline | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | <35 | ≥35 | Sig. | Life Science | Physical Science | Humanity Studies | Social Sciences | Sig. |
| Publishing | It is Open Access | 2.75 | 2.49 | 0.039 | 3.00 | 2.59 | 2.92 | 2.36 | 0.001 |
| Citing | It is Open Peer Reviewed | 2.23 | 1.88 | 0.005 | 2.29 | 2.10 | 1.76 | 2.03 | 0.004 |

b. Bold indicates activities that are under 0.05 significance level which means to be of significant differences.

When asked how important open access is when deciding where to disseminate/publish, young researchers (mean value=2.75) looked more favorably, albeit not very favorably on publishing in an open access journal. Compared with scholars from other disciplines, biologists and life scientists (mean value=3.00) were more likely to publish research papers in OA journals (see Table 3). As regards citing practices, again, young researchers (mean value=2.23) seemed more likely to cite sources disseminated with comments posted on a dedicated website (open peer review) than established researchers (mean value=1.88). And life scientists (mean value=2.29) felt easier to cite OA resources or literatures with open peer review.

### 3.3 Focus Group Discussion

In general, the focus group discussions supported the findings of the questionnaire. All of 24 participants (100%) agreed that OA journals helped provide unrestricted online access to peer-reviewed literature, and a total of 19 (79.2%) researchers were happy to cite OA journal if it has been properly peer reviewed. Such positive remarks were accompanied by negative views on the high profit of some big commercial scholarly publishers (mentioned by 5 participants, 20.8%) and complaints about the locked access to Google, Facebook and other widely used online tools (mentioned by 16 participants, 66.7%).

However, as discussions progressed, and came to the questions what makes a journal OA and what is the kernel of OA publishing, the focus group revealed surprising misunderstandings. Unfamiliarity and preconceived notions made some Chinese scholars distrust or dislike OA journals. Interestingly, merely 17 (70.8%) participants showed familiarity with peer review systems , and only one research can defined what proper peer review system is. Among all 24 participants, only 3 (12.5%) researchers have published works in OA journals, and they are all biological scientists. We found this was quite significant thus asked them in details about their OA publishing experience. Two of them published in the same journal: PLOS Biology, the first journal of the Public Library of Science with a high impact factor of 9.343 in the year of 2014. Both authors mentioned the high quality and the strict peer review process when asked why they trusted PLOS Biology. The other author published his paper in the journal of BMC Bioinformatics in 2013. He presented as follows:

"I published my paper in this journal because it is highly relevant to my field and I've got a fund that I could pay for about US$ 2000 for OA publishing."

However, when being asked: "Did OA journal get you cited?" None of them said "Yes". For the rest 21 participants who had not published paper in the form of OA, 12 of them (57%) admitted that they were not familiar with OA publishing model and 2 humanities stated that they have no idea of what OA journal is.

The in-depth discussion allowed us to discover more about what researchers did not like about OA journals. The most common misunderstanding was that OA journals are "vanity" journals that are simply published for the money received (agreed by 12 participants, 50%). A historian stated that: "It is totally wrong for researchers to be asked to pay to publish. Authors should be paid for publishing their good quality research results." A few researchers (3, 12.5%) agreed with his statement and one social scientists showed his concerns about copyright issues: "It might be too easy to plagiarize from OA published papers." Another common preconception was that OA journals were the products of a breed of new, not to be trusted publishers, interested in money above all else (agreed by 10 participants, 42%). A social scientist's comment had been widely accepted by other participants, he said:

"There is a big market here with rapidly growth of China's R&D investment and the increasing need of scientific work publishing outlets."

In terms of publishing, a total of 15 (62.5%) researchers declared that they would not publish in OA journals. Most of them (10, 42% of all participants) believed that OA journals are not peer reviewed or do not have proper peer-review systems as strict as established journals. As for the rest who tended not to publish in OA journals, 3 scholars (12.5% of all participants) doubted there is a real need for 'everything is free and available somewhere'. "After all the target audience is such a small group" as one of them said. The other 2 participants were all humanities, and one of them said:

"Even if I wanted to publish in an OA journal and get more readership, we do not obtain much in the way of research funding and, as a consequence, cannot find the money to pay for publishing."

A big difference can be seen here, when reading and using OA journals, Chinese researchers were more positive (they thought OA journals were properly peer reviewed) while publishing in OA journals, they seemed more hesitate (they doubted OA journals were peer reviewed). Such contradictory statements suggested how different their attitude were when deciding what to read and where to publish. And revealed how little Chinese scholars knew about OA.

As the discussion developed and some misunderstandings were corrected, participants retracted their earlier statements about ubiquitously never trusting OA and were willing to trust OA journals in certain circumstances. Being properly peer reviewed (20, 83.3%) and published by a reputable publisher (18, 75%) were mostly mentioned. However, it is worth noting that when one of the participants said that:

"I will publish in OA journals as long as academic administrative authorities acknowledged them as ISI indexed journals."

All the rest of researchers during the group said that they could not agree with her more. This reflected the fact that the authorities always accept journals with an impact factor whether they are OA or not.

## 4 Discussion

### 4.1 Reasons Why Chinese Scholars Trust or Distrust OA Journals

Both quantitative and qualitative researches showed that Chinese scholars lukewarm on the topic of open access and a lot of misunderstandings on OA journals existed. As readers,

Chinese scholars liked the principle of OA and welcomed the unrestricted online access that OA journals provided to academic literature, especially in circumstances that do not allow free access to widely used search engines such as Google Scholar. However, in terms of citing and publishing in OA journals, Chinese scholars showed more distrust. They were willing to publish in OA journals in certain circumstances, such as being properly peer reviewed and published by a reputable publisher, and most important precondition was the authority acceptance.

The most important reason why they do not trust OA journals was that they considered that author-pays-for-publication schema was wholly money-oriented, poor quality vanity publishing. This was partly because the author-pays-for-publication model is notorious in China, because in some second-rated journals and publishers, content is not seriously peer-reviewed before publishing.

They did not publish in OA journals also partly because of the current scientific evaluating system inChina. Chinese scholars felt a big pressure to publish papers in journals accepted by traditional index such as SCI, SSCI and A&HCI. And academic administrative authorities who evaluate research outputs increasingly attach much to impact factor. In this case, trusted or not is not as important as being accepted by current scientific evaluation system. This could explain the questionnaire findings why Chinese scholars appeared lukewarm on the topic of open access. And this is also the reason why biologists and life scientists were so eager to publish in OA journals; there were quite a number of established open access journals with high impact factor in their field.

### 4.2 Diversities in Age and Discipline

Not surprisingly, biologists and life scientists were much more familiar with open access publishing and they were the most optimistic about it. They did not only publish articles in the form of "Gold OA" with the financial support from funders, but were also deeply involved in institutional repository and self-archive practices. Humanities researchers and social scientists were particularly hard to convince about the quality of OA journals; they were very suspicious about the "real motives" behind OA, and they were also concerned about the copyright issues. They suspected that the reviewers might not be independent and easily bribed due to the author-pays-for-publication model.

In terms of age, young researchers looked to be more enthusiastic about OA. This is partly because the early career researchers are at the start of their careers and under considerable pressure to publish papers to obtain scholarly reputation. But this need to be confirmed because most of the focus group participants were younger than 35 years old and a comparative sample of established scholars should be studied.

Overall, from a trustworthiness perspective, this research showed that peer reviewed journals retain and even have increased their importance as the preferred and trusted vehicle for formal research communication. Chinese scholars did not trust OA journals mainly because of the current scientific evaluating system in China is still peer-reviewed journals focused system.

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