

On Incentives for Open Access Publishing: A Survey at IMIA's Annual General Assembly During HEC2016

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Abstract

Open access provides an alternative opportunity of publishing research articles besides the traditional subscription-based publication model. Facilitating higher visibility, accessibility, and dissemination, among others, open access addresses modern needs of our information and communication society. Though these factors are vital, there also do exist initial problems to become prevalent. Especially, costs like article publication charges seem to have an impact on the author's decision not to publish open access. In order to gain a deeper insight on incentives for open access publishing (as well as on barriers for not publishing open access), we developed a specific survey within the scope of our Trans-O-MIM project. Conducted at HEC2016, we primarily involved participants of the Annual General Assembly of the International Medical Informatics Association (IMIA). As main incentives and motivation for open access publishing had been identified: article indexing, impact factor, accessibility/availability, dissemination, and visibility.

Keywords:

Open Access Publishing, Motivation, Surveys and Questionnaires

Introduction

In recent years, a change in the publication landscape can be observed. Besides the traditional publication model, an alternative model is about to establish itself [1-3]. Open access publishing aims to fulfill needs of modern information and communication society. The Internet allows publishing journal articles or even whole journals online and the open access model takes on this development by offering all content freely available to readers. Also, many research funding organizations and governments have changed their policies and demand to publish funded research outcomes open access [4, 5]. To finance this new publication model, authors are often charged so-called article publication charges (APC).

Nearly all journals offer their authors an open access option [6]. But the mere fact that there is a new possibility of publishing research articles does not necessarily mean that authors make use of it. Currently, only about 13% of all research papers are published open access [7]. Besides all positive attributes of open access publishing - for example higher visibility and citation rates - there are also many concerns. Significant barriers to open access publishing are an often-higher effort for the authors and the above-mentioned publication charges [8, 9].

When authors make a decision how to publish their work - traditional or open access - they are usually influenced by certain factors. Within the framework of the project "Trans-O-MIM" (full title "Strategies, models and evaluation metrics for the goal-oriented, stepwise, sustainable and fair transformation of established subscription-based scientific journals into open-access-based journals with *Methods of Information in Medicine* as example") [10, 11], funded by the German Research Foundation (DFG), we intended to identify incentives tempting authors into publishing open access. These results are conceived to help transform the journal *Methods of Information in Medicine* successfully into an open access journal.

The goal is to explore factors that influence authors positively in matters of open access publishing. To compose a good, and later on accepted, open access business model, it is crucial to understand the needs and wishes of researchers and authors, respectively. By means of a survey among medical informatics scientists we explored decisive incentives.

Most importantly in the decision-making process for a journal is Impact Factor, a fast turnaround time and most of all the publication charges. This leads to the question of to which limit these charges are considered as appropriate and tolerable. In this context, it is moreover presumed that most of the authors do not have that much experience in open access publishing. For the utilization of the survey results this hypothesis shall be investigated additionally.

At the beginning of this investigation several general research questions were collected. These were broadly diversified in terms of incentives for open access publishing. General thoughts in this context were (e.g.):

- how experienced authors are in open access publishing
- if incentives are actually required and if so who needs to be incentivized
- whether there are other factors that may influence authors in their decision for publication

This constituted the initial point for more detailed questions derived from a broader context and the methodology of surveys and survey design.

In the subsequent sections, we describe the questionnaire intended to get answers to these questions, its conduct and results. Furthermore, we will discuss these findings pertaining to an adequate open access business model and close with a conclusion.

Methods

We designed a questionnaire in order to ask experts from the fields of medical informatics, biometry, and epidemiology about their knowledge regarding existing open access journals and about their incentives to publish research articles open access. The paper-based version of our questionnaire was created in cooperation with and typeset by Schattauer Publishers (Figure 1); each optimized in terms of presentiveness and usability.

Which incentives tempt authors into publishing Open Access?

Dear participants of HEC 2016,

please allow us some questions in the context of the DFG-project "Trans-O-MIM" (www.pli.de/en/forschung/impulse/trans-o-mim-form), which deals with the transition of subscription-based scientific journals into open-access-based journals with "Methods of Information in Medicine" as example.

Please fill out one form, either on paper or electronically (see QR-Code). Thank you!

As a reward for your help we will offer a free Open Access article in "Methods of Information in Medicine" amongst all participants. If you want to take part please fill in your e-mail address:

1. Which factors influence your decision to choose a journal? (importance on a scale from 1 = not important to 10 = very important; 0 = not applicable)

- Articles are indexed e.g. in PubMed Central
- Impact Factor of a journal
- Publication charges
- Prestige of a journal
- Visibility and dissemination
- Topic fits optimally to the journal
- Ability to attach supplementary material/data
- Members of the editorial board
- A fast turnaround time
- Anything else, please specify

2. Have you ever published a journal manuscript in Open Access?

Yes ☐ No ☐ n.a.

3. Do you know any Open Access journals in the field of Medical Informatics, Biometry and / or Epidemiology?

Yes ☐ No ☐ n.a.

4. If you answered the previous question with "yes", have you already published in one of them?

Yes ☐ No ☐ n.a.

5. What is your motivation to publish in an Open Access journal? (in keywords)

-
-
-

6. Which amount of article processing charges (APC) is appropriate and which is tolerable in your opinion?

	appropriate	tolerable	n.a.
1) up to 1.000 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) 1.001 € to 1.500 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) 1.501 € to 2.000 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) 2.001 € to 2.500 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) more than 2.501 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. What are the three main reasons for you NOT to publish your work in an open access journal? (in keywords)

-
-
-

8. Do you have any other comments, e.g. on the incentives to publish in an Open Access journal?

www.umfrage.de

Schattauer

Figure 1 – paper-based version of survey

Our questionnaire contains a short introduction about the "Trans-O-MIM" DFG-project and a guidance how to fill in the questionnaire. The questionnaire itself consists of eight questions, namely:

- Which factors influence your decision to choose a journal? (importance on a scale from 1 = not important to 10 = very important; 0 = not applicable)
 - Articles are indexed e.g. in PubMed Central
 - Impact Factor of a journal
 - Publication charges
 - Prestige of a journal
 - Visibility and dissemination
 - Topic fits optimally to the journal
 - Ability to attach supplementary material/data
 - Members of the editorial board
 - A fast turnaround time
 - Anything else, please specify
- Have you ever published a journal manuscript in open access?
- Do you know any open access journals in field of Medical Informatics, Biometry and / or Epidemiology?

- If you answered the previous question with "yes", have you already published in one of them?
- What is your motivation to publish in an open access journal?
- Which amount of article processing charges (APC) is appropriate and which is tolerable in your opinion?
 - Up to 1.000 €
 - 1.001 € to 1.500 €
 - 1.501 € to 2.000 €
 - 2.001 € to 2.500 €
 - More than 2.501 €
- What are the three main reasons for you NOT to publish your work in an open access journal?
- Do you have any other comments, e.g. on the incentives to publish in an open access journal?

Before our questionnaire was printed, a review with three experts in the fields of publishing and medical informatics was done. The experts mentioned were the current and the senior Editor-in-Chief of the journal "Methods of Information in Medicine" and a member of the DFG-committee for research libraries and information systems. All questions were discussed and improved based on the input of these experts. Afterwards, an online version of our survey was developed using a specific tool called "eSurvey Creator" (<https://www.esurveycreator.com>) (as shown in Figure 2).

Which Incentives Tempt Authors Into Publishing Open Access?

Which amount of article processing charges (APC) is appropriate and which is tolerable in your opinion?

	appropriate	tolerable	n.a.
up to 1.000 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.001 € to 1.500 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.501 € to 2.000 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.001 € to 2.500 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
more than 2.501 €	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Start Next

Figure 2 – online version of survey

In order to reach a large group of experts we decided to place our survey at HEC (Health Exploring Complexity: An Interdisciplinary Systems Approach; GMDS & DGEpi & IEA-EEF annual meeting, Medical Informatics Europe – MIE2016; 28 August – 2 September 2016), one of the main international conferences in the field of medical informatics, biometry and epidemiology. HEC 2016 had been visited by about 1,400 conference participants. During this conference, some special meetings of expert associations were held; e.g. IMIA's Annual General Assembly among others. We used this meeting to directly contact and inform the participants of

IMIA's Annual General Assembly about our survey and invited all of them to participate. In addition, we also offered all conference participants to take part in our survey.

In order to merge survey results, we digitalised the completed paper-based questionnaires before evaluation. Responses presented in results section are given in original. Only free text answers were summarized and numerated for ease of exposition.

Results

35 [70%] out of 50 participants of IMIA's 2016 General Assembly took part in our survey. Furthermore, 27 additional participants of HEC2016 filled-in the survey. Results shown in this section are based upon questionnaires gathered from IMIA's 2016 General Assembly.

Question 1

Starting with the first question dealing with influence factors on journal decisions, the following results were achieved.

Table 1 – "Which factors influence your decision to choose a journal" (question 1) – results in absolute values ^(*)

	10	9	8	7	6	5	4	3	2	1	0
a.	18	8	3	1	3	-	-	-	-	-	2
b.	12	5	8	2	2	4	-	1	-	-	1
c.	8	1	7	6	3	6	-	2	-	1	1
d.	6	6	10	6	2	-	-	1	1	-	3
e.	8	5	11	4	2	1	1	1	1	1	-
f.	4	5	11	3	5	5	-	-	1	1	-
g.	1	-	2	5	4	5	6	3	4	3	2
h.	-	2	5	4	3	6	2	1	6	5	1
i.	-	2	6	9	3	3	3	1	-	3	1
j.	*	*	*	*	*	*	*	*	*	*	*

^(*) Additional influence factors specified by participants were: "Appear on the government list of journals that release budget for the university", "brings out future updates on the topics published", "good and transparent review process (with feedback)", "good experience, excellent review process, well written constructive reviews", "government policy", "opened review process", "Quality of reviews" and "submission system".

Questions 2

Going on, 26 [74.3%] from our 35 participants have already published a journal manuscript in open access, whereas 8 [22.9%] did not while 1 [2.9%] stated "n.a".

Questions 3

26 participants answered the question if they know any open access journals in the field of medical informatics, biometry and / or epidemiology. 17 [65.4%] out of these 26 participants knew at least one open access journal whereas 4 [15.4%] did not, while 5 [19.2%] stated "n.a.". Journals mentioned more than once were "Journal of Medical Internet Research (JMIR)", "BioMed Central (BMC)" and "Public Library of Science (PLOS)".

Questions 4

Those 17 participants who answered 'yes' to the previous question were asked if they have already published in one of the journals mentioned. 8 [50%] did whereas 7 [43.8%] did not, while 1 [6.3%] stated "n.a.". Journals mentioned more than once here were BMC and JMIR. One participant did not answer this question.

Question 5

Regarding the motivation to publish in an open access journal - answered by 33 participants - the following answers were given more than once:

1. accessibility / availability – 15 times [45.46%]
2. dissemination – 9 times [27.27%]
3. visibility – 8 times [24.24%]
4. citations / fast process / (funding) policy – 4 times each [12.12% each]
5. fast review – 2 times [6.06%]

Question 6

Talking about article publication charges (APCs) all 35 participants answered the question with the following results.

Table 2 – "Which amount of article processing charges (APC) is appropriate and which is tolerable in your opinion" (question 6) – results in absolute values

	appropriate	tolerable	n.a.
up to 1,000€	12 [34%]	12 [34%]	11 [31%]
1,001€ to 1,500€	6 [17%]	9 [26%]	20 [57%]
1,501€ to 2,000€	2 [6%]	10 [29%]	23 [66%]
2,001€ to 2,500€	1 [3%]	1 [3%]	33 [94%]
more than 2,501€	1 [3%]	1 [3%]	33 [94%]

When no answer was given on paper-based version here, we classified the answer as "n.a".

Question 7

When being asked about the main reasons for them not to publish their work in an open access journal - answered by 31 participants - the following answers were given more than twice:

1. costs – 21 times [68%]
2. reputation – 6 times [19%]
3. no funding / review (process) – 4 times each [13% each]
4. impact factor / quality – 3 times each [10% each]

Question 8

With respect to the last question, two out of six comments gave additional information addressing open access and were not already covered by another question of the survey:

- "There should be a means to waive for discount. The page charges for the author depending on the quality of content, value addition to the confirmity and economic status of the authors(s)."
- "Having so many invitations to become a reviewer / editorial board from open access journals. I doubt the quality of reviewers. I hope MIM make full use of current selected reviewers."

Discussion

Even though 60 percent of our participants already published in open access journals, many of them seem less ambitious in addressing the open access paradigm in depth. When talking about open access, costs will always be one of the first remarks on the table.

Regarding explanatory factors for journal decision in general, article indexing has been declared as most important; and more important than the impact factor and/or prestige of a journal as second priority. Visibility and dissemination as

third priority had also been declared as being more important than publication charges.

Among the main five motivations for publishing open access, accessibility and availability, dissemination, visibility, citations and a fast processing time had been mentioned.

On the downside, participants had been concerned about costs (above all), reputation, no funding, the review process, impact factor and quality.

In terms of costs, article publication charges (APCs) up to 1,000€ had been thought of as being appropriate whereas article publication charges (APCs) up to 2,000€ had been thought of as being tolerable in general tendency.

Limitations

A limitation to this survey is the small number of participants. For the evaluation of our questions we only had 35 answered questionnaires. However, these participants were experts in their field (medical informatics, biometry and epidemiology) so their opinions may have a particularly high explanatory power. Moreover, this survey was kept rather general and preset leading solely to first insights.

Future perspectives

Based on the presented survey and its results we intend to conduct another significantly larger study. Therein researchers in the field of medical informatics will be asked about incentives for open access publishing in detail. The study may also be accompanied by semi-structured interviews of experts to gain new ideas in terms of incentivizing open access publishing for authors.

Conclusion

In conclusion, there have not been any novel findings at all based on the survey. There is indication that open access does not seem to be a big talking point among scientific researchers according to our findings. If so, what is the basis for this circumstance? Although all influence factors seem to be (and have already been) well-known, it turned out to be more difficult than expected to successfully transform well-established subscription-based scientific journals into open access journals.

Although number of participants was small we wanted to share our findings as they provide indicator first impressions. Based on these insights, a follow-up study as mentioned above is going to take place in 2017/2018.

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