

The Reviewer Motivation Problem – How to Improve the Relationship with this User Group?

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The Reviewer Motivation Problem – How to Improve the Relationship with this User Group?

Reviewers are a very interesting customer group in the daily business process of scientific journals, because reviewers are expected to work for the journal without a monetary reward. How to motivate reviewers? Is it possible to adopt proved strategies from scientific articles and CRM? This contribution consists of a state-of-the-art overview of the literature on scientific reviewer motivation and it introduces a new motivation hierarchy and a survey. Next, we present an analysis of reviewer's motivation in the context of a journal by conducting a survey to solve the reviewer motivation problem and show how to build relationships with reviewers.

Keywords: *Reviewer Motivation, Scientific Publishing, Long-term Relationship*

1. Introduction

1.1. Purpose

In a scientific journal there are four main participants: Readers, authors, reviewers and editors. In the best case, during his career (with growing scientific experience) a customer is participating in all groups and build a long-term relationship with the journal.

Especially, the customer group of the reviewer is a very interesting group, because a reviewer is expected to work for the journal without a monetary reward. But without these well qualified researchers the scientific quality management process is not possible. But, how to motivate reviewers? Is it possible to adopt proved strategies from scientific articles and from CRM to motivate reviewers and to create guidelines?

Because of the management and our experience of the scientific and organizational processes of a scientific journal, we know that it is often problematic to acquire reviewers and we know, every scientific journal needs a high number of good reviewers. Scientists wish to receive fast reviews with a high quality, but on the other side, they know, because of their own personal experience, how complex reviewing of a scientific article is.

For these reasons, this contribution considers the reviewer motivation problem. To find a solution for this problem, we conducted a survey based on a state-of-the-art -literature research and created guidelines and “nudges” to improve the motivation and loyalty of reviewers.

1.2 The Terms Motivation & Nudges

Motivation is the reason, why a person is acting or behaving in a particular way. It includes the person’s willingness and goals. To be motivated means to be moved to do something (Ryan & Deci, 2000b). Motivation is highly valued in all parts of life, because of its most important consequence: Motivation produces (Ryan & Deci, 2000a). Motivation theory distinguishes between intrinsic and extrinsic motivation. Intrinsic Motivation means a person really wants to do something without an incentive from a third party. Intrinsic motivation refers to doing something, because it is inherently interesting or enjoyable (Ryan & Deci, 2000b). The driving force for the Extrinsic Motivation is an external stimulus. A person is extrinsic motivated to do something, because of an incentive (e.g. salary, earn social respect, have social compassion, fear of punishment). Mostly, the driving force for a reviewer is a combination of intrinsic and extrinsic reasons.

Thaler & Sunstein (2009) popularized the term nudge. The nudge theory means a concept in behavioral economics that influences the behavior and decision making of a person without direct prohibitions or economic incentives (Hansen & Jespersen, 2013; Saghai, 2013). It is important that nudges are transparent and never misleading (Thaler, 2015).

1.3 The Testing Environment – the Journal X¹

The journal X consists of two series: A and B. XA publishes papers of short to medium length in the emerging field of Data Science and covers regular research articles and special issues on conferences, workshops and joint activities of a classification society and its cooperating partners and organizations. The submitted papers are reviewed by at least two reviewers.

Every fully reviewed and accepted paper will be published in an online-first version that is freely available and already quotable.

XB covers scientific articles which improve methods, algorithms, and processes over the whole data lifecycle. The special feature of this series is the organization of the journal around data sets.

¹ Placeholder used instead of the real name (because of identifying information)

2. Approach & Method:

2.1 State-of-the-Art-Literature Research & the Reviewer Motivation Hierarchy

In the scientific literature many studies discuss the main incentives for reviewing an article. It is important to distinguish between “scientific reviews” for journals and “product/service reviews” (e.g. Mathwick & Mosteller, 2017; Matta, & Frost, 2011) for consumer to find useful articles for our purpose. With the help of these articles (see table 1) we developed a motivation hierarchy and used it as basis for the creation of our survey.

There are three main groups of motivations (the first and the second groups are divided in subcategories):

- Self-focused personal reasons: These reasons are rather self-focused and self-achievement reasons. Zaharie & Osoian (2016) claimed that this motivation group is often the incentive for developing scholars to review an article.
 - o Group membership / personal relationships: This motivation incentive shows the wish to identify with the scientific community. This is especially important for younger reviewers, because to the role of developing scholars in the academic community: They want to be part of the scientific community, want to be recognized by the other members as part of the group, and want to build a relationship with editors, etc. This result coincides with the study of Mulligan, Hall & Raphael (2013).
 - o Insider knowledge: Nobarany, Booth & Hsieh (2016) and Kreiman (2016) showed that reviewing is a way to gain information about the state-of-the-art in the own research field (awareness). Zaharie & Osoian (2016) pointed out, that this is also a way to gain information about the review process itself and to learn what is important in a special journal. Another, less mentioned reason, is the reason of “enjoying critical reading”.
 - o Monetary rewards: Zaharie & Osoian (2016) and Squazzoni, Bravo & Takács (2013) have shown that monetary rewards decrease the motivation, quality, and efficiency of the review. But, there is one advantage of motivating reviewers with the help of a monetary reward: The reviewers meet the four-week deadline (Chetty, Saez & Sandor, 2014).
- Community-focused personal reasons: The incentives in this group are characterized by the framework of altruism and giving back and frequently is the incentive for senior reviewers (Zaharie & Osoian, 2016), which already received reviews from the community in the past and are (valued) members of the scientific community.
 - o Good scientific work / reputation in the field: The motivation reason in this incentive scheme is the improvement of scientific work in general. The reviewer wants to encourage good research (Nobarany, Booth & Hsieh, 2016), benefits from the impact of the authors’ work on the scientific discipline (Kreiman, 2016), and to help to establish or maintain a good reputation in the own scientific field (Nobarany, Booth & Hsieh, 2016).
 - o Joy of helping (Enjoy helping): In the study of Mulligan, Hall & Raphael (2013) 85% reported that they just enjoy helping authors to improve their papers. Also, this reason helps to improve scientific work in general.
 - o Giving back / altruism: Nobarany, Booth & Hsieh (2016) showed that the idea of “giving back” is a motivation reason. The reviewers reported that they received reviews from the community, so they feel that they should review for the community. Also, Kreiman (2016) found that reviewers benefit through the pleasure that an altruistic act can provide. Mulligan, Hall & Raphael (2013) substantiated these reasons.
- Organizational reasons: A good organization of the review process is mandatory. If the process is unclear or complex, nobody likes to be involved in this process. Also, if the process is clearly defined, it is important to consider general rules in the review

process to improve the satisfaction of the reviewers. Such an organizational aspect is the choice of a good time period between the assignment and the deadline of the review.

Reference + Year	Method (Approach & Research Tool)	# RR	“Main” Results – Short Overview
Mulligan and Raphael, 2010	Global study *needed time approx. 15 min *invited 40000 researchers from over 10000 journals * contacted via e-mail and requested to complete the survey + reminder	4037 10%	69% of the reviewers are satisfied with the current system of peer review. The article examined the influences and attitudes of the reviewers towards peer review and found that peer review is valued, but needs to be improved, e.g. 56% feel that guidance is needed and 68% wished a formal training in peer review. Double-blind peer review is seen as the most effective form of peer review, because it seems to be the most objective and helps eliminate reviewer bias.
Squazzoni, Bravo and Takács, 2013	Modified version of the standard experimental framework “Investment Game”	136 –	Monetary rewards decrease the quality and efficiency of the review process. This coincides with the results of other researchers (e.g. Vohs, Mead, & Goode, 2006; Heyman and Ariely, 2004; Bowles, 2008; Frey and Jegen, 2001).
Mulligan, Hall and Raphael, 2013	Relates to the 5 years old study in Mulligan and Raphael (2010)	4037 10%	The responding reviewers are mostly community-focused: 90% review papers to play an active role in the scientific community, and 85% just enjoy helping authors to improve their papers.
Chetty, Saez and Sandor, 2014	Experiment over a 20-month period *Participants randomly assigned to 4 groups	1500 –	The experiment with 1,500 referees at the Journal of Public Economics shows that the shortening of the deadline from six weeks to four weeks reduces the median review times from 48 days to 36 days.
Zaharie and Osoian, 2016	Semi-structured interviews with reviewers from natural and social sciences	42 82.4%	Younger reviewers tend to apply the “self- achievement frame” while senior reviewers were rather part of the “community focused oriented frame”.
Nobarany, Booth, and Hsieh, 2016	Questionnaire *invited 1952 reviewers of submissions to conference CHI 2011.	307 15.7%	The results show which factors are important for the motivation of reviewers. The authors asked for the position, review experience, level of involvement, area of education, gender, the reasons for reviewing, and to indicate how much each of the different influences the motivation for reviewing.
Kreiman, 2016	Literature review and considering his own long experience.	– –	The article shows interesting information about the motivation to participate in the review process, an inspiring list of journal JSLHR and the has a good literature overview.

Key to table 1: # = Participants; RR=Response Rate in %

Table 1: Literature Overview

2.2 Survey

With the help of the survey we want to find out, which incentives motivate existing and (potential) new reviewers. Next, we aim at the improvement of the satisfaction of the reviewers with X’s review process and would like to create best practices to motivate reviewers. As target group for the survey, we selected all registered reviewers of the journal

XA. We randomly split all registered reviewers into two groups (Group 1; G1 and Group 2; G2) with 58 persons each. It is important, that only 48 (26 in G1 and 22 in G2) of the 116 contacted reviewers have completed at least one review on XA. The other 68 invited persons are either assigned at the moment or only registered. The first group (G1) was invited at Friday, 1:46 pm via email and the second group (G2) at Tuesday, 1:46 pm via email, as well. The text of both invitation emails was identical. We sent no reminder and in the survey there was no mandatory entry. The overall response rate was 31.0%. Due to the small sample size the difference between the respondents in the groups is not significant. The questions and a short overview of the results are shown in the tables 2 to 7 in the appendices. The survey (background of each question) was developed with the help of the evaluated motivation groups and the papers in table 1.

3. Findings

On the basis of the results of the survey we developed guidelines and nudges to improve the motivation of reviewers according to the different motivation groups. We discussed our results with a group of reviewers on a scientific conference. As an online-first journal we want to use the possibilities to contact our authors with help of the journal system (OJS). We provide a first view on the wished motivation incentives and the resulting changes in the CRM of X:

Self-focused personal reasons:

Question 2 of our survey shows that only a few of the responding reviewers are self-focused. To gain insider knowledge seems an incentive for reviewing for nearly 42%.

Monetary rewards are no option for X, because the quality and efficiency of the review process decreases and for financial reasons.

An incentive for some reviewers would be to get a certificate of reviewing from journals. This certificate should indicate the level of efforts (number of reviews). In this connection, different reviewer recognition platforms are discussed (e.g. publons.com). The predominant opinion of the senior reviewers was, that something like a certification or a recognition platform is not needed. Younger reviewers (e.g. post doctorates) are thinking about to add such an award to the CV. (Electronic) certificate (personal delivered) or public appreciation was a rather controversial topic. The wish to be honored for the review is a part of the motivation incentive group membership/ personal relationships.

Community-focused personal reasons:

The second question in our survey indicates that most of the X reviewers do the reviews for the community (95%) and want to ensure the quality of the scientific work and the reputation in the field (75%). Another motivation reason is personal contact. Our experiences in the management of X, in another experiment in the journal environment and many studies in the field of CRM demonstrate that personal “customer contact” is important. Customer acquisition is comparable with the assignment of reviewers. Our experience indicates that the positive response (commitment) of new potential reviewers who get invited via personal email with a personal reference is at a level of 61.3%. The positive response by potential reviewers who get invited through the OJS by the editor of the journal is only at 8.3%. This is surprising, because the invited persons and the editor had a personal relationship. So, this experience shows that personal communication matters. Next, we have shown that the motivation reason giving back / altruism is an important incentive. Many studies indicate that motivation reason giving back / altruism is an important incentive. Many studies indicate that appreciation is important. Therefore, at least once a year, X wants to appreciate the reviewers by saying “Thank you”. A good opportunity is it to combine this appreciation with a Christmas-/New year -greeting card (electronic) . It seems that this nudge leads to a

higher motivation to review another article in the next year or to finish a overdue review (before the Christmas break).

Organizational reasons:

We discussed the adaption of the “timeslot” and the “reminder”: Chetty, Saez and Sandor (2014) recommend 4 weeks as a suitable timeslot. Our experience indicates, that on average the completed reviews need 3.4 weeks (approximately 24 days), and also the result of question 1 has shown a median of 4 weeks (58% are satisfied with this deadline; 80.6% would prefer a longer deadline). But on the other side, we have to consider the needs of the authors. Obviously, a trade-off between reviewers’ (enough time for review) and authors’ (fast review) preferences exists. X decided to stay with 4 weeks (“default”), but grant an extension to 6 weeks on request. According to the Nudge theory, setting such a default leads to fewer deviations (Campbell-Arvai, Arvai & Kalof, 2014; Pichert & Katsikopoulos, 2008). In addition, a reminder will be set 1 week before the end of the deadline (wished by 91.7%). Furthermore, the majority of reviewers wished to read the review of the other (second) reviewer of the evaluated paper to see how another reviewer assessed the paper.

With the help of the survey we found meaningful motivation incentives for reviewing an article for the journal X and implemented them in the journal environment (e.g. OJS). First results shown that the changes have a positive impact and help to motivate reviewers.

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Appendices

Question 1: In your opinion, how many weeks are the perfect time slot to complete a review? (Time between assignment and deadline in weeks).

	All	G1 (Friday)	G2 (Tuesday)
average	5.44 weeks	4.85 weeks	6.19 weeks
median	4.0 weeks	4.0 weeks	5.0 weeks
min; max	2 ; 16 weeks	3 ; 8 weeks	2; 16 weeks
<= 4 weeks	52.7%	60%	43.8%
<= 5 weeks	58.3%	65%	50%
<= 6 weeks	80.6%	85%	75%

Table 2: Results Question 1: Perfect time slot to complete a review

Question 2: Which reasons motivate you to review an article?

Reasons [<i>Order of the answers during the survey</i>]	All	G1	G2
Giving back (I receive reviews → I feel I should review for the community) [2]	94.4% (34)	95.0% (19)	93.8% (15)
Help other researchers to improve their work / encourage good research [7]	75.0% (27)	75.0% (15)	75.0% (12)
Part of my job [1]	55.5% (20)	55.0% (11)	56.2% (9)
Read new research before anyone else / I want to know what is new in my field know what is new in my field [5]	41.7% (15)	50.0% (10)	31.0% (5)
Get insider's knowledge of the review process (Because of the knowledge about the review process, I learn about how to write more effectively) [3]	41.6% (15)	35.0% (7)	50.0% (8)
Include the reviews in my curriculum vitae [6]	22.2% (8)	20.0% (4)	25.0% (4)
Enjoying critical reading [4]	22.2% (8)	20.0% (4)	25.0% (4)
Social recognition / Social pressure [8]	2.7% (1)	5.0% (1)	0.0% (0)
Other reasons (please comment) [9]	11.1% (4)	10.0% (2)	12.5% (2)

Table 3: Results Question 2: Motivation reasons in decreasing importance. The results are shown in per cent “%” and in persons “()”.

Question 3: Do you wish to get reminded one week before the end of the deadline?

Answer	All	G1 (Friday)	G2 (Tuesday)
yes	91.67% (33)	85% (17)	100% (16)
no	2.78%** (1)	5% (1)	0% (0)
maybe / no matter	5.56% (2)	10% (2)	0% (0)

Table 4: Results Question 3: Is a reminder wished? The results are shown in per cent “%” and in persons “()”.

** This person sets a reminder in his or her calendar by itself and reported that he or she is delivering the reviews in time.

Question 4: How many reviews do you do in one year (on average)?

	All	G1 (Friday)	G2 (Tuesday)
reviews/year (on average)	12.26	12.35	12.14
min. r/y (median)	8	10	4.5
min. ; max. r/y	0;50	0 ; 30	1;50
<= 12 r/y; r/y (average)	72.2% ; 6.08 rev.	70.0% ; 6.9 rev.	75.0% ; 5 rev.

Table 5: Results Question 4: Reviews per year on average

Question 5: How long (in hours) do you need for one review (on average)?

	All	G1 (Friday)	G2 (Tuesday)
hours/review (on average)	11.62	10.0	13.56
hours/review (median)	5.5	4.5	8.0
min. ; max. h/r	1;50	2;50	1;40
<= 5h/r in % and persons; h/r (average)	50.0% (18); 3.2h	65.0% (13); 3.26h	31.3% (5); 3.0h

Table 6: Results Question 5: Reviews per year on average (last row in per cent “%” and in persons “()”).

Question 6: Do you work in a university or in a company

	All	G1 (Friday)	G2 (Tuesday)
University	88.9% (32)	95.0% (19)	81.25% (13)
Company	5.5% (2)	5.0% (1)	6.25% (1)
Else ((1) own company; (1) research institute))	5.5% (2)	0% (0)	12.5% (2)

Table 7: Results Question 6: Where are you working? The results are shown in per cent “%” and in persons “()”.