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An empirical study of goal intentions and monetary compensation for reviewers in information science

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Abstract

In this paper, we study manuscript reviewers in terms of their goal intentions, effort level, and monetary compensation. With this aim, we surveyed corresponding authors who have published in four Information Science journals about their role as reviewers. Based on the survey responses (a sample size of 193 reviewers), we analyzed what their goal intentions are with respect to manuscript evaluation, and whether it is possible to better motivate them to choose higher evaluation goals. We also studied whether a reviewer with a present bias is more likely to choose a higher goal regarding the manuscript evaluation if they are sufficiently compensated. We found that "Quality control" is the most likely goal intention regarding the evaluation of a difficult manuscript, while "Networking opportunities" is the least likely one. We also found that in a competitive deadline scenario, at least a quarter of the respondents seemed to overvalue immediate rewards over future benefits and intentions. However, 42,5% of the survey respondents were more likely to accept higher evaluation goals if they received some monetary compensation. Furthermore, we found that reviewers with an overly strong present bias will need a

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monetary incentive to write a review report for a difficult manuscript in a competitive deadline scenario, with “Quality control” as their evaluation goal.

Keywords: Reviewers; Present Bias; Goal Intentions; Monetary Compensation; Effort Level; Survey.

1 Introduction

Reviewers are essential to control the scientific quality of manuscripts submitted to academic journals. Without their continued effort, it would be impossible to guarantee a correct communication of the scientific results obtained by researchers in any field of science. The problem is that the effort required of them continues to increase due to the growing number of manuscripts submitted to peer-reviewed journals. For example, (Johnson, Watkinson and Mabe 2018) found that more than 3 million articles are published annually among 33,100 peer-reviewed English-language journals and 9,400 non-English-language journals. However, this study did not take into account the increase in research and articles related to COVID-19.

Due to the huge number of submissions, reviewers receive more and more invitations to review manuscripts. Unfortunately, with this increase in invitations to review, added to the remaining research, teaching, and management tasks that reviewers must perform in many cases, they may not find enough motivation to write high-quality review reports within a short period of time. In fact, according to (Huisman and Smits 2017) the average review time is 17 weeks. Furthermore, reviewers are human resources who can exhibit different types of biases (Langford and Guzdial 2015, Garcia, et al. 2020), for different reasons: academic background, experience, emotions, and health (Zhang, et al. 2021).

One of the factors that cause a particular type of reviewer bias (i.e., present bias), which we will address in this paper, comes from combining their role as a reviewer with other tasks that offer them more significant benefits in the short term. Reviewers with a present bias focus on the here and now, placing more importance on immediate rewards than on future intentions and benefits. This is so because they are usually authors in the research field, but also manage research centers' processes, and are often faculty members. This plurality of occupations for reviewers means they have very busy schedules, often leading them to put off peer review assignments. On many occasions, they may not have enough motivation to prioritize a revision task over others in which they obtain an immediate benefit. Furthermore, the evaluation of a difficult manuscript can also require a high level of effort on the part of the reviewer, which, together with the low compensation received, increases their propensity to procrastinate or even to decline the review invitation.

In the literature, several articles have studied the different aspects of academic procrastination and motivation, exploring the underlying mechanisms and proposing effective interventions to improve academic performance and well-being. For example,

(Steel 2007) represents a comprehensive review of the research on procrastination, focusing on the causes and consequences of this phenomenon. The author argued that procrastination is a self-regulatory failure resulting from a combination of personality, situational, and cognitive processes. (Steel 2007) identified several strategies that can be used to reduce procrastination, including goal-setting, time management, and cognitive-behavioral therapy. (Pychyl and Flett 2012) argued that procrastination is a common problem with serious consequences, including reduced productivity, poor academic performance, and adverse psychological outcomes. They highlighted the importance of self-regulation in overcoming procrastination and suggested that interventions to improve self-regulation skills can effectively reduce procrastination.

(Ferrari 1995) reviewed the theory, research, and treatment of procrastination and task avoidance. They showed that procrastination is a complex behavior with various factors, including personality, cognitive processes, and situational factors. They provided an overview of the research on procrastination, including its antecedents and consequences, and highlighted the need for effective treatments. (Vansteenkiste 2004) examined the synergistic effects of intrinsic goal contents and autonomy-supportive contexts on individuals' motivation to learn, perform, and persist. This study found that individuals who pursued goals that aligned with their values and interests and who were provided with autonomy-supportive environments exhibited higher levels of intrinsic motivation, goal attainment, and persistence than those who did not. The authors suggested that individuals' motivation can be enhanced by designing learning environments that promote autonomy, relatedness, and competence.

(Deci 1999) presented a meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. These authors argued that while extrinsic rewards can increase performance in some cases, “extrinsic motivation should not be used because it deprives human interest and pleasure in activities”. However, in a meta-analysis of 96 experimental studies, (Cameron, J., Pierce, W. 1994) found no consistent evidence that reward decreases intrinsic motivation. Furthermore, (Eisenberger, R., Pierce, W. D., Cameron, J. 1999) developed general interest theory which criticizes the limitations of cognitive evaluation theory proposed by (Deci, E., Ryan, R. M. 1985). According to the general interest theory, under certain conditions, extrinsic rewards can enhance intrinsic motivation. Using a meta-analysis, (Eisenberger, R., Pierce, W. D., Cameron, J. 1999) found that “reward for meeting absolute performance standards did not affect free choice but increased self-reported interest.” They argued that applied studies commonly found positive or null relationships between reward and intrinsic motivation. Their findings suggested that “reward procedures requiring specific high task performance convey a task's personal or social significance, increasing intrinsic motivation”, (Eisenberger, R., Pierce, W. D., Cameron, J. 1999).

The previous articles provided an overview of the current research on procrastination and motivation, suggesting that developing self-regulation skills may be an effective way to improve efficiency. By understanding the underlying causes of procrastination and adopting effective self-regulation strategies, reviewers can overcome this challenge and improve their overall productivity. Thus, using a formal model, (Garcia, et al. 2023)

analyzed how to motivate reviewers with a present bias to work harder. Their formal study found that providing reviewers with a clear sense of progress and a specific goal can help to increase their motivation and reduce the effects of present bias. In addition, offering incentives such as monetary compensations can also effectively motivate reviewers with a present bias to work harder. Finally, they suggested that journal editors can use these strategies to improve the quality and speed of the review process.

In this paper, the peer-review process is represented as follows. First, at date 0, a reviewer receives an invitation to review a manuscript (see Figure 1). At this time, they choose their goal intentions regarding the manuscript evaluation. Next, at date 1, the reviewer receives a cost for the effort required to evaluate the manuscript (see Figure 1). In this scenario, reviewers with a strong present bias may prefer to postpone tasks that do not provide them with short-term benefits. Finally, at date 2, the reviewer receives an instrumental gain related to the perceived quality of the reviewer report they sent to the editor, given their initial goal intentions (see Figure 1).

Previously, in this same line of thought, (Garcia, et al. 2023) found conditions under which reviewers prefer to exert a low level of effort in a peer review process. In particular, in situations such that the reviewer has a present bias and therefore prefers to perform tasks that produce immediate benefits, rather than tasks that only produce potential benefits in the future. In that situation, (Garcia, et al. 2023) suggested that offering an adequate compensation to the reviewers can overcome those present-biased preferences. Using a formal model, they also predicted that if a reviewer with a moderate present bias chooses a higher goal regarding the manuscript evaluation, they will put more effort into the review process.

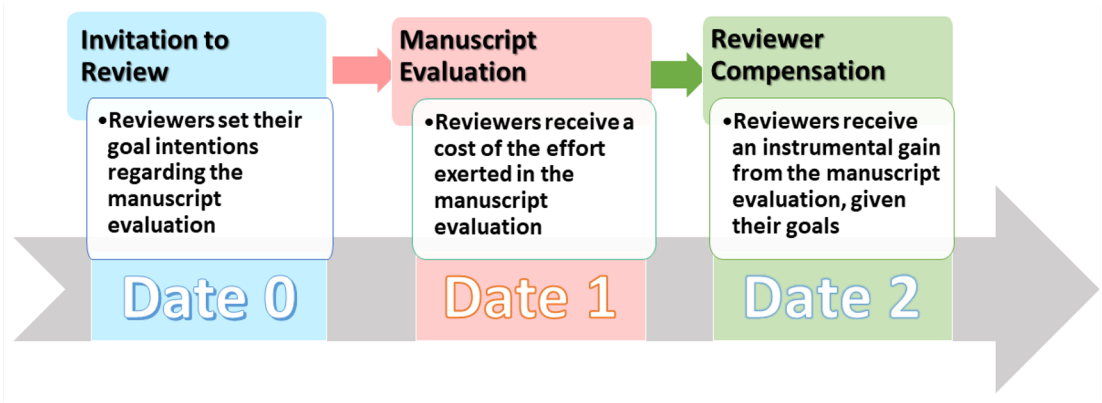


Figure 1: Timing of the peer review processing.

In this paper, the research question addressed is: What motivates reviewers in Information Science? With this aim, we study the profiles of reviewers with respect to their

goals, effort levels, and performance. However, what do we understand by reviewer profiles? To explain this, let us consider a simple example of two professors with different reviewer profiles: Mary and Max. On one hand, Mary is a very well-organized and meticulous faculty member. Upon arriving at her office, Mary first attends to her emails and organizes the day's calendar. In addition to the classes she has to attend, her most urgent commitment is to write a report to secure a peer-reviewed grant with a close deadline. However, she also has to write a review report for a difficult manuscript in a complex peer review process. Therefore, Mary organizes her calendar to meet each task's completion date. On the other hand, Max is a colleague of Mary who also starts the day by attending to the email and to his classes. He also has the same urgent commitments, i.e., to write a report to secure a peer-reviewed grant with a close deadline and to write a review report for a difficult manuscript. Unlike his colleague Mary, however, Max does not plan his schedule as meticulously, instead working on the task with the most pressing deadline and, when possible, choosing those tasks that produce immediate benefits. Therefore, he has present-biased preferences.

At date 0, when they received an invitation to review a difficult manuscript, Mary chose quality control and helping the profession as goal intentions for the peer-review process. Whereas Max chose staying up-to-date and networking opportunities as his goal intentions regarding the manuscript evaluation. At date 1, in a competitive deadline scenario, Mary chose to write a review report for the difficult manuscript, while Max chose to write a report to secure his peer-reviewed grant. Finally, at date 2, the deadline for the evaluation of the manuscript arrives and Mary sent a review report to the editor on time, having complied in her inform with the items associated with overall quality, novelty, results, and readability. However, Max did not meet the review deadline and was late in sending the report to the editor. His editor then wrote Max again to remind him of the review deadline, and as a result, Max spent a few hours out of his busy schedule writing a report for the difficult manuscript being reviewed. It means that after repeatedly putting off his review task, in the end, Max had to rush to submit his report just after the deadline, leading to a low-quality recommendation. Therefore, Mary's report met her evaluation goals and she was somewhat satisfied with this positive performance. However, Max's report did not meet his goal intentions and he felt some degree of dissatisfaction with this negative result. In our example, Mary and Max exhibited different profiles as reviewers, in terms of their goal intentions, present-biased preferences, level of effort, and performance.

In order to address the aforementioned research question (i.e., what motivates reviewers in Information Science?), in this article we present an experimental study about the reviewers' profiles in Information Science. With this aim, we analyze the responses of a survey we conducted in December 2022. Survey participants were corresponding authors of articles published in four top Information Science journals. In the following sections, we first analyze the features that characterize in our study the behavior of a reviewer regarding the manuscript evaluation. Second, we discover associations between reviewer profile characteristics, i.e., their goal intentions, present-biased preferences and

reviewer compensation. Third, we study the instrumental utility gain for different reviewer profiles. To conclude, we will discuss the main findings obtained with our analysis.

2 Reviewer profiles in Information Science: Data and Model

2.1 Survey

An online survey was conducted from December 22, 2022 to January 22, 2023. Corresponding authors of papers published in the Journal of Information Science (between 2000 and 2022), Journal of Informetrics (between 2007 and 2022), Journal of the Association for Information Science and Technology (between 2014 and 2022), and Scientometrics (between 2000 and 2022) were invited to complete the survey. This was a population size of N = 4400 corresponding authors from four top information science journals. Even though the survey did not collect any basic demographic information from respondents, the corresponding author is the researcher who takes primary responsibility for communication with the journal during the various phases (for example, the manuscript submission process, peer review, and publication). In general, the corresponding authors are senior researchers or highly experienced group leaders. Therefore, they will normally be more representative of associate or full professors than of PhD students. From this population of N = 4400 corresponding authors, there were 193 respondents of whom 100% were manuscript reviewers: 52,33% are reviewers with high experience; 37,82% with medium experience; and 9,33% are reviewers with low experience.

Appendix A illustrates the survey questionnaire and the responses we obtained from the survey participants. Several of the most relevant questions in the online survey have arisen directly from the propositions that were stated and proved in (Garcia, et al. 2023) using a formal model. However, a potential limitation of our study is that most of the survey questions could be subject to social desirability bias, as they were asked directly, rather than using an alternative scheme (for example, a vignette design).
In Appendix A, we show more detailed information about the survey results. In particular, we show the frequencies obtained for the responses of ten questions in the survey. All the questions posed in the online survey, the raw data collected, and the software used to perform the analysis shown in the following sections are available at
https://github.com/rosadecsai/reviewer_profile.git

2.2 Reviewer profile characteristics

In this section, we study the features that characterize in our study the behavior of a reviewer when they receive an invitation to review a manuscript: (1) goal intentions; (2) present-biased preferences; (3) monetary incentives; (4) level of effort; (5) performance

regarding the manuscript evaluation; (6) reviewer satisfaction with their performance given the goal intentions; and (7) reviewer's utility gain.

2.2.1 Goal intentions regarding the manuscript evaluation

When a reviewer receives an invitation to review a manuscript, they can choose their goal intentions (e.g., quality control or networking opportunities). These goal intentions represent what they want to achieve in their performance. In the online survey, Question 1 was defined to study those goals chosen by a reviewer in the evaluation of a manuscript (see Appendix A).

Question 1

When receiving an invitation to review a high-difficult manuscript, my goal intentions for the evaluation of the manuscript are: (Check all that apply)

Q1.1 Quality control

Q1.2 Helping the profession

Q1.3 Staying up-to-date

Q1.4 Networking opportunities

Q1.5 Just enjoying it

Q1.6 I have no goal intention

Regarding Question 1, Q1.1 "Quality control" and Q1.2 "Helping the profession" represent higher, rather non-egotistical, goals that aim to maintain the standards of the peer review process and to ensure quality scientific communication. However, Q1.3 "Staying up-to-date", Q1.4 "Networking opportunities", and Q1.5 "Just enjoying it" represent self-serving goals of reviewers who want to obtain some immediate personal benefit through the peer review process. Finally, Q1.6 "I have no goal intention" represents the situation of a reviewer who has no intention of achieving any goal by accepting an invitation to review.

In Table 1, we illustrate the mean and variance for each goal intention that is available in Question 1 (see Appendix A for further details). The mean value (multiplied by 100) represents the percentage of respondents who chose to answer that particular option: (1) 73,1% of the reviewers had quality control as their goal regarding the manuscript

evaluation; (2) 68,9% had helping the profession as their goal; (3) 51,3% had staying up-to-date as their goal intentions; (4) 6,7% had networking opportunities as their goal; and (5) 15,5% had just enjoying it as their goal.

Therefore, we found that "Quality Control" is the most likely goal intention regarding the evaluation of a difficult manuscript, while "Networking Opportunities" is the least likely one. Nevertheless, we also found that when receiving an invitation to review a difficult manuscript, 6,7% of those surveyed had no goal intention for the peer review process.

	Mean	Variance
Q1.1	0.731	0.198
Q1.2	0.689	0.215
Q1.3	0.513	0.251
Q1.4	0.067	0.063
Q1.5	0.155	0.132
Q1.6	0.067	0.063

Table 1 Mean and Variance of the answers for ***Question 1***

In order to illustrate the associations between goal intentions regarding the manuscript evaluation, Table 2 shows the correlation between those five goals in Question 1, by using the Kendall method. Furthermore, to find significant differences between those same goals, we have also applied the One Way ANOVA test to Question 1. The result is illustrated in Table 3. Moreover, Table 4 shows differences between pairs of goals by using the Tukey HSD test for the same Question 1.

As can be seen in Table 3, by using the One Way ANOVA test we obtained a p-value of 9.79e-74 and a F-statistic of 104.21 with 4 degrees of freedom. Hence, we found that at least one of the five goals is significantly different from the rest.

Furthermore, from the results of the Tukey HSD test shown in Table 4, we also found that between "Q1.1: Quality control" and "Q1.2: Helping the profession" do not exist a significant difference (i.e., they have a Tukey HSD p-value of 0.85). Similarly, from the Tukey HSD test illustrated in Table 4, we found that between "Q1.4: Networking opportunities" and "Q1.5: Just enjoying it" there are no significant differences (i.e., they have a Tukey HSD p-value of 0.23).

Therefore, given that Q1.1 and Q1.2 are positively correlated (see Table 2) if a reviewer chooses "Quality Control", with a high probability, they will also choose "Helping the profession". Similarly, given that Q1.4 and Q1.5 are positively correlated (see Table 2) if a reviewer chooses "Just enjoying it" as goal regarding the manuscript evaluation, with a high probability, they will also choose "Networking opportunities". Moreover, we can

conclude that “Q1.3: Staying up-to-date” is significantly different from the other four goal intentions, using the One Way ANOVA test as noted above.

	Q1.1	Q1.2	Q1.3	Q1.4	Q1.5
Q1.1	1				
Q1.2	0.12	1			
Q1.3	0.11	0.06	1		
Q1.4	0.02	0.09	0.18	1	
Q1.5	-0.06	0.04	0.19	0.11	1

Table 2: Correlation between different goal intentions (Kendall method)

Source	**Treatment**	**Error**
Sum of squares	71.65	165.02
Degrees of freedom	4.0	960
Mean square	17.91	0.17
F statistic	104.21	
p-value	9.79e-74	

Table 3: One Way ANOVA Test for Question 1

	Q1.1	**Q1.2**	**Q1.3**	**Q1.4**	**Q1.5**
Q1.1		***0.85***	0.001	0.001	0.001
Q1.2	***0.85***		0.001	0.001	0.001
Q1.3	0.001	0.001		0.001	0.001
Q1.4	0.001	0.001	0.001		***0.23***
Q1.5	0.001	0.001	0.001	***0.23***	

Table 4: Tukey HSD p-values for the five options in Question 1. Q1.1: Quality control, Q1.2: Helping the profession, Q1.3: Staying up-to-date, Q1.4 Networking opportunities, Q1.5: Just enjoying it.

Using the survey responses to Question 1, we can calculate a numerical value to represent their goal intentions as follows:

$$a = \left(1 - 1_{Q1.6}\right)\left(f_1\, 1_{Q1.1} + f_2\, 1_{Q1.2} + f_3\, 1_{Q1.3} + f_4\, 1_{Q1.4} + f_5\, 1_{Q1.5}\right) \tag{1}$$

with $1_{\mathrm{Q1.i}}$ denoting the indicator function for $Q1.i$ (with i=1,2,…,6) in Question 1:

$$1_{\mathrm{Q1.i}} = 1\ if\ Q1.i\ was\ chosen\ by\ the\ reviewer;\ 0, otherwise$$

and where $f_1, f_2, f_3, f_4\ and\ f_5$ are weighting values for the indicator functions $1_{Q1.i}$, with i=1,2,…,5, and whose sum is normalized to 1. The possible values of $f_1, f_2, f_3, f_4\ and\ f_5$ are constrained to produce a utility gain for the reviewer such that increases as goal intentions increase. Therefore, the f_j-weights simply represent a normalization.

2.2.2 Present-biased preferences

A second feature to consider in our study are present-biased preferences. This is so because, as (Laibson 1997) suggested, "individuals often exhibit some degree of present bias, which refers to the tendency for immediate gratification".

In our problem, those present-biased preferences can prevent reviewers from working hard on a difficult manuscript as they are more likely to opt for what they consider more valuable work of higher professional priority (Ackerman and Gross 2007, Hall, Lee and Rahimi 2019, Nguyen, Steel and Ferrari 2013).

Therefore, the underlying hypothesis is that, in a competitive deadline scenario, reviewers may overvalue immediate rewards over future benefits and intentions. In the online survey, Question 2 was intended to find present-biased preferences on the part of the reviewers (see Appendix A).

Question 2

In a competitive deadline scenario, I prefer to: Choose one of the following answers

Q2.1 Write a review report for a high difficulty manuscript

Q2.2 Write a report to secure a peer-reviewed grant

Q2.3 Both of the above two options

From Question 2 of the survey, we found that in a competitive deadline scenario, 42,5% of the respondents prefer to write a review report for a high-difficulty manuscript. In the same scenario, however, we also found that 25,9% of those surveyed would rather write

a report to secure a peer-reviewed grant than write a review report for a difficult manuscript (see Appendix A for further details).

Therefore, at least a quarter of the respondents seemed to overvalue immediate rewards over future benefits and intentions. Following (O'Donoghue and Rabin 1999), these tendencies are present-biased preferences. This result coincides with that of (Nguyen, Steel and Ferrari 2013) who found that approximately 25% of adults consider that they procrastinate in a consistent and problematic way.

2.2.3 Monetary incentives

Additional instrumental utility gains, such as monetary incentives, can improve the invitation-to-review acceptance rates for potential reviewers with a severe present bias (Garcia et al., 2023). Therefore, an additional hypothesis in our study is that reviewers are more likely to accept higher evaluation goals if they receive some monetary compensation for their efforts regarding the manuscript evaluation. In their absence, reviewers may not accept the high level goal that is needed to work hard on a difficult manuscript (Garcia et al., 2023).
In the online survey, Question 3 was intended to explore whether, when invited to review a difficult manuscript, reviewers are more likely to accept higher evaluation goals if they receive some monetary compensation (see Appendix A).

Question 3

When invited to review a high-difficult manuscript, I am more likely to accept higher evaluation goals (e.g., quality control, in addition to helping the profession and keeping up-to-date) if the reviewer's compensation is: Choose one of the following answers
Q3.1 $0
Q3.2 $10
Q3.3 $50
Q3.4 $100
Q3.5 $150
Q3.6 $200

From Question 3 of the survey (see Appendix A), we found that when invited to review a difficult manuscript, 57,5% of those surveyed were more likely to accept higher evaluation goals, even without receiving any monetary compensation. They chose zero-dollar compensation.

In the same scenario, however, 42,5% of the respondents were more likely to accept higher evaluation goals if they received some monetary compensation (between $10 and $200): 1 reviewer (0,5% of those surveyed) chose $10; 20 reviewers (10,4%) chose $50;

20 reviewers (10,4%) chose $100; 9 reviewers (4,7%) chose $150; and 32 reviewers (16,6%) chose $200.

Therefore, to motivate reviewers in complex review processes, the monetary compensation had to be zero or high enough. In fact, an incentive greater than or equal to $50 was able to motivate a total of 81 reviewers (42% of respondents). Whereas a monetary incentive of just $10 only succeeded in motivating one reviewer out of the 193 who responded to the survey.

2.2.4 Level of effort

A fourth feature to consider in our study is the level of reviewer effort exerted in the manuscript evaluation. In the online survey, Question 4 was intended to find the level of effort on the part of the reviewers (see Appendix A).

Question 4

I work hard in the peer review process (0: completely disagree; 10: completely agree)

From Question 4 "**I work hard in the peer review process** (0: completely disagree; 10: completely agree)", we obtained a mean value of 7.91, with a standard deviation of 1.68 (see Appendix A for further details). Therefore, we found that the majority of those surveyed strongly agreed that they worked hard in the evaluation of the manuscript.

Using the reviewer's response to Question 4**,** we can calculate a numerical value between 0 and 1 to represent their level of effort exerted in the manuscript evaluation as follows:

$$e = Q4/10 \tag{2}$$

with $Q4$ being the reviewer's response to Question 4.

2.2.5 Performance regarding the manuscript evaluation

Following (Superchi 2019), in the online survey Question 5, Question 6, Question 7 and Question 8 were intended to study the quality of the reviewer reports, both overall and in terms of the evaluation of the novelty, results, and readability.

Question 5

The quality of my reviewer report is very high (0: completely disagree; 10: completely agree)

Question 6

In terms of the evaluation of the novelty, the quality of my reviewer report is very high (0: completely disagree; 10: completely agree)

Question 7

In terms of the evaluation of the results, the quality of my reviewer report is very high (0: completely disagree; 10: completely agree)

Question 8

In terms of the article's readability, the quality of my reviewer report is very high (0: completely disagree; 10: completely agree)

From Question 5 to Question 8 of the survey, we also found that the majority of those surveyed strongly agreed that the quality of their review reports was very high (both overall and in terms of the evaluation of the novelty, results, and readability). To be more precise (see Appendix A for further details):

- From Question 5 "**The quality of my reviewer report is very high** (0: completely disagree; 10: completely agree)", we obtained a mean value of 7.79, with a standard deviation of 1.5.
- From Question 6 "**In terms of the evaluation of the novelty, the quality of my reviewer report is very high** (0: completely disagree; 10: completely agree)", we obtained a mean value of 7.72, with a standard deviation of 1.43.
- From Question 7 "**In terms of the evaluation of the results, the quality of my reviewer report is very high** (0: completely disagree; 10: completely agree)", we obtained a mean value of 8.08, with a standard deviation of 1.4.
- From Question 8 "**In terms of the article's readability, the quality of my reviewer report is very high** (0: completely disagree; 10: completely agree)", we obtained a mean value of 7.91, with a standard deviation of 1.73.

Using the survey responses to Question 5, Question 6, Question 7 and Question 8, we can calculate a numerical value to represent their performance regarding the manuscript evaluation as follows:

$$y = \frac{f_5 Q5}{10} + \frac{f_6 Q6}{10} + \frac{f_7 Q7}{10} + \frac{f_8 Q8}{10} \tag{3}$$

with $Q5,\ Q6,\ Q7, and, Q8$ being the reviewer's responses to Question 5, Question 6, Question 7 and Question 8, respectively; and where $f_5, f_6, f_7\ and\ f_8$ are weighting values for the reviewer's responses $Q5,\ Q6,\ Q7, and, Q8$ such that $f_5 + f_6 + f_7 + f_8 = 1$. Again, the f_j-weights simply represent a normalization.

2.2.6 Reviewer satisfaction

In the online survey, Question 9 and Question 10 were intended to study the reviewer satisfaction with their performance, given the goal intentions for the peer review process.

Question 9

When the review report does not meet my evaluation goal, my dissatisfaction is (0: none at all; 10: a lot)

Question 10

When the review report meets my evaluation goal, the satisfaction I get is (0: none at all; 10: a lot)

From Question 9 "When the review report does not meet my evaluation goal, my dissatisfaction is (0: none at all; 10: a lot)", we obtained a mean value of 5.52, with a standard deviation of 2.64 (see Appendix A for further details). Therefore, we found that when the review report did not meet their evaluation goal, the majority of the survey respondents agreed that, as a reviewer, they felt some degree of dissatisfaction with this negative result.

From Question 10 "When the review report meets my evaluation goal, the satisfaction I get is (0: none at all; 10: a lot)", we obtained a mean value of 7.65, with a standard deviation of 2.51 (see Appendix A for further details). Therefore, when the review report met their evaluation goal, the majority agreed that, as a reviewer, they felt great satisfaction with this positive result.

2.2.7 Reviewer's utility gain

Using a formal model, (Garcia, et al. 2023) found that a reviewer with a present bias β increases their motivation to work hard by setting a higher goal intention a regarding the manuscript evaluation.

In our model, following (Garcia, et al. 2023), the reviewer's utility gain at Date 2 (see Figure 1) is represented as a value function of their goal intention a (as given in Eq (1)) and their effort level e (as given in Eq (2)):

$$g(e,a) = \sum_{y=\underline{y}}^{\overline{y}} y\, f(y|e) + \eta\left(\mu \sum_{y=\underline{y}}^{a} (y-a) f(y|e) + \sum_{y=a}^{\overline{y}} (y-a) f(y|e)\right) \tag{4}$$

with y being the quality of the actual manuscript evaluation (as given in Eq (3)); $\mu > 1$ representing the reviewer's loss-aversion coefficient; and $\eta > 0$ being the weight attached to the gain for meeting the evaluation goal and the loss for not meeting that goal. Using the survey responses, we calculated a contingency table between y-values and e-values for those reviewers surveyed to obtain their frequency distribution of y conditioned on e, i.e., $f(y|e)$.

In Eq (4), following (Garcia, et al. 2023), $E(y|e) = \sum_{y=\underline{y}}^{\overline{y}} y\, f(y|e)$ represents the expected quality of the manuscript evaluation, conditioned on reviewer's effort; whereas

$$\eta\left(\mu \sum_{y=\underline{y}}^{a} (y-a) f(y|e) + \sum_{y=a}^{\overline{y}} (y-a) f(y|e)\right)$$

represents the loss for not meeting the evaluation goal and the gain for meeting that evaluation goal.

Following (Garcia, et al. 2023), at date 0, a reviewer with a present bias chooses a certain evaluation goal a (see Figure 1). However, at date 1, after accepting the review invitation, they choose to exert a high level of effort $\overline{e}$ regarding the manuscript evaluation if the utility gain that the reviewer will obtain from a high-effort evaluation (i.e., $U_1(\overline{e}) = -c + \beta g(\overline{e}, a)$) exceeds that from a low-effort one (i.e., $U_1(\underline{e}) = \beta g(\underline{e}, a)$):

$$U_1(\overline{e}) = -c + \beta g(\overline{e}, a) \geq \beta g(\underline{e}, a) = U_1(\underline{e})$$

or equivalently,

$$\beta[g(\overline{e}, a) - g(\underline{e}, a)] \geq c$$

where, at date 1, a high-effort evaluation $\overline{e}$ causes the reviewer a utility cost of c while that of a low level of effort $\underline{e}$ is 0; with $\beta \in [0,1)$ being the extent of a reviewer's present bias (see (Garcia, et al. 2023) for further details).

3 Discovering associations between reviewer profile characteristics

In this section, we aim to discover associations between profile characteristics of reviewers in Information Science, i.e., goal intentions, reviewer compensation, and present-biased preferences.

3.1 Reviewer compensation and goal intentions

Now, we applied the Chi-square test for association, using the contingency matrix for the survey responses relatives to goal intentions (i.e., Question 1) and to reviewer compensations (i.e., Question 3).
From the results shown in Table 5, we found a p-value of 0.035 between "Q1.1: Quality control" as goal intention and reviewer compensation. Therefore, at a significance level of 0.05 we conclude that the association between "Quality control" and reviewer compensation is statistically significant.

	Goals				
	Q1.1	**Q1.2**	**Q1.3**	**Q1.4**	**Q1.5**
Reviewer Compensation	***0.035***	0.531	0.899	1.0	1.0

Table 5: Chi-square test p-value between the survey responses for reviewer compensation and goal intentions (Q1.1: Quality control, Q1.2: Helping the profession, Q1.3: Staying up-to-date, Q1.4 Networking opportunities, Q1.5: Just enjoying it)

Furthermore, to determine which monetary incentives have the most impact in the association between quality control and reviewer compensation, we then applied the Chi-square test for association, using the contingency matrix for the survey responses relatives to "Q1.1: Quality control" and to a reviewer compensation between $0 and $200 (i.e., Question 3).
From the results shown in Table 6, we found a p-value of 0.035 between "Q1.1: Quality control" and "Q3.1: $0 reviewer compensation" (with a Pearson correlation value equal to 0.163, which means that there is a positive correlation). Hence, the survey respondents were more likely to choose the quality control goal if they did not receive any financial compensation (i.e., $0).

Table 6 also shows a p-value of 0.033 between "Q1.1: Quality control" and "Q3.6: $200 reviewer compensation", with a Pearson correlation value equal to -0.169. This means that there is a negative correlation between them.

	Reviewer Compensation					
Goal	**$0**	**$10**	**$50**	**$100**	**$150**	**$200**
Q1.1: Quality control	***0.035***	1.0	0.554	1.0	0.954	***0.033***

Table 6: Chi-square test p-value between Quality Control goal and different reviewer's compensations.

3.2 Present-biased preferences and reviewer compensation

In this section, we applied the Chi-square test for association, using the contingency matrix for the survey responses relatives to present-biased preferences (i.e., Question 2) and to reviewer compensation (i.e., Question 3). Table 7 presents the Chi-square test p-values.

From the results shown in Table 7, we found a p-value of 0.021 between "Q2.2: Write a report to secure a peer-reviewed grant" and "Q3.6: $200 reviewer compensation" (with a Pearson correlation equal to 0.182). Therefore, at a significance level of 0.05 we conclude that the association between a present-biased preference (i.e., "Q2.2: Write a report to secure a peer-reviewed grant") and "Q3.6: $200 reviewer compensation" is statistically significant. This result is consistent with (Garcia, et al. 2023)'s prediction that reviewers with a present bias are more likely to choose higher evaluation goals if they receive sufficiently large financial compensation (in the online survey, $200). This is because, in a competitive deadline scenario, a reviewer with a present bias needs additional motivation to write a review report for a difficult manuscript in a complex review process.

	Reviewer Compensation					
Present-biased preferences	**$0**	**$10**	**$50**	**$100**	**$150**	**$200**
Q2.1: Write a review report for a high difficulty manuscript	***0.031***	0.879	***0.017***	1.0	0.641	0.225
Q2.2: Write a report to secure a peer-reviewed grant	0.157	1.0	0.477	0.365	1.0	***0.021***

Table 7: Chi-square test p-values between reviewer compensation vs. "Q2.1: Write a review report for a high difficulty manuscript" and "Q2.2: Write a report to secure a peer-reviewed grant"

From the results shown in Table 7, we also found a p-value of 0.031 between "Q2.1: Write a review report for a high difficulty manuscript" and "Q3.1: $0 reviewer compensation" (with a positive correlation of 0.166). Therefore, at a significance level of 0.05 we conclude that the association between "Write a review report for a high difficulty manuscript" and reviewer compensation of $0 is statistically significant. This is so because a reviewer without present bias does not need additional motivation (i.e., monetary compensation) to write a review report for a difficult manuscript in a competitive scenario, and therefore their intrinsic motivation can be sufficient for that purpose.
Table 8 illustrates power analysis for the association between "Q2.1: Write a review report for a high difficulty manuscript" and "Q3.1: $0 reviewer compensation". Table 8 shows an actual power of 0.75 (at α error probability equal to 0,1) using our sample size of 193 respondents.

N	Actual Power[a]	Power	p H0	p H1	α err. prob.
193	,749	,748	0	,166	,1

Table 8: Power analysis for the association between Q2.1: Write a review report for a high difficulty manuscript and Q3.1: $0 reviewer compensation.

a. *Based on the Fisher z transformation and the Normal approximation with bias adjustment*

Similarly, Table 9 illustrates power analysis for the association between a present-biased preference (i.e., “Q2.2: Write a report to secure a peer-reviewed grant”) and “Q3.6: $200 reviewer compensation”. Table 9 shows an actual power of 0.816 (at α error probability equal to 0,1) using our sample size of 193 respondents.

N	Actual Power[a]	Power	p H0	p H1	α error prob.
193	,816	,815	0	,182	,1

Table 9: Power analysis between Q2.2: Write a report to secure a peer-reviewed grant and Q3.6: $200 reviewer compensation.

a. *Based on the Fisher z transformation and the Normal approximation with bias adjustment*

3.3 Reviewer compensation, present-biased preferences, and goal intentions

Now, we are interested in understanding whether a reviewer compensation between $0 and $200 leads them to choose the “Quality control” goal and different present-biased preferences (i.e., “Write a report to secure a peer-reviewed grant” or “Write a review report for a high-difficulty manuscript”). Table 10 shows the Pillai’s Trace p-values.

As can be seen from Table 10, we found that at a significance level of 0.01 (i.e., p-value = 0.004), a reviewer with an overly strong present bias will need a monetary incentive of $200 to write a review report for a difficult manuscript in a competitive deadline scenario, with “Quality control” as the evaluation goal.

From Table 10, we also found that at a high significance level of 0.01 (i.e., p-value = 0.006), a reviewer without present bias will choose to write a review report in a competitive deadline scenario without receiving any monetary compensation, with "quality control" as the goal.

	Reviewer Compensation					
Quality control and present-biased preferences	**$0**	**$10**	**$50**	**$100**	**$150**	**$200**
Q1.1: Quality control and Q2.1: Write a review report for a high difficulty manuscript	***0.006***	0.432	0.023	0.951	0.649	0.025
Q1.1: Quality control and Q2.2: Write a report to secure a peer-reviewed grant	0.027	0.716	0.456	0.501	0.871	***0.004***

Table 10: Pillai's Trace p-values between reviewer compensation, "Q1.1: Quality control" goal and present-biased preferences (i.e., "Q2.2: Write a report to secure a peer-reviewed grant", "Q2.1: Write a review report for a high difficulty manuscript" and "Q2.3: Both of the above two options ").

Now, using the survey responses, we determine for those surveyed whether higher goal intentions yield higher levels of reviewer effort, and therefore, a better performance regarding the manuscript evaluation.

With this aim, we first found the reviewer's utility gain $g(e,a)$ using the survey responses. The value function $g(e,a)$ was obtained using Eq (4) as described in Section 2.2.7.

Then, using the reviewer's utility gain $g(e,a)$, we tested if a reviewer with a present bias β increases their motivation to work hard by assigning a high goal a for evaluating the manuscript (relative to having no goal).

Following (Garcia, et al. 2023), after accepting the review invitation (at date 0), a reviewer chooses to exert a high level of effort in the peer review process if the utility gain that they would obtain from a high-effort evaluation exceeds that from a low-effort one, or equivalently if it follows the incentive constraint $\beta(g(\overline{e},a) - g(\underline{e},a)) - c \geq 0$, with $\overline{e}$ representing a high level of effort, and $\underline{e}$ representing a low level of effort.

The cost of a high level of effort (on the part of the reviewer) is c ; while the cost of a low level of effort is 0. In the incentive constraint $\beta(g(\overline{e},a) - g(\underline{e},a)) - c \geq 0$, the value of $\beta \in [0,1)$ represents the extent to which a reviewer's present bias causes time-inconsistent preferences (i.e., a lower value of β represents a higher present bias).

Using the value function $g(e,a)$ that was obtained from the survey responses (as described in Eq (4)), we found the results shown in Figure 2, Figure 3, and Figure 4. These three figures illustrate that the incentive constraint $\beta\big(g(\overline{e},a) - g(\underline{e},a)\big) - c$ increases as evaluation goal a increases. Therefore, those reviewers surveyed with a present bias β are more likely to exert a high level of effort $\overline{e}$ (i.e., the incentive constraint is true) if their goal intentions a are higher regarding the manuscript evaluation. In this computational simulation, we set $\eta = 2.13$, $\beta \in \{0.1, 0.15, 0.25, 0.3\}$, and $c \in \{0.1, 0.15, 0.2\}$.

Furthermore, Figure 2, Figure 3, and Figure 4 also show that if a reviewer's present bias is not overly strong (i.e., β is higher), there is a manuscript evaluation goal a that, after accepting the review invitation, motivates the reviewer to exert a high level of effort in the evaluation of the manuscript. This is so because the incentive constraint is true: $\beta\big(g(\overline{e},a) - g(\underline{e},a)\big) - c \geq 0$. For example, this constraint is true for $\beta \geq 0.15$ in Figure 2; while it is true for $\beta \geq 0.25$ in Figure 3 and for $\beta \geq 0.3$ in Figure 4.

From these figures, however, when a reviewer's present bias is severe (i.e., β is lower), those reviewers surveyed prefers to exert a low level of effort, due to the fact that the incentive constraint is false, i.e., $\beta\big(g(\overline{e},a) - g(\underline{e},a)\big) - c < 0$. Therefore, these figures also show that the minimum value of β for which the motivation through higher evaluation goals is feasible decreases from 0.3 to 0.15 as effort cost c decreases from 0.2 in Figure 4 to 0.1 in Figure 2. In this situation, those reviewers surveyed with a severe present bias β are more likely to exert a high level of effort $\overline{e}$ (i.e., the incentive constraint is true) if the effort cost c is lower. In our analysis, the effort cost c is lower the less complex the peer review process is, the less difficult the manuscript is to evaluate, and the more expertise the reviewer who performs the evaluation has.

The weight η in Eq (4) represents the weight attached to the gain for meeting the evaluation goal and the loss for not meeting that goal. Figure 5 shows that incentive constraint $\beta(g(e,a) - g(e,a)) - c$ exhibits the same properties as η increases its value in the range from 0.5 to 3. Therefore, the results illustrated in Figure 2, Figure 3, and Figure 4 hold if we change the value set for η in the computational simulation.

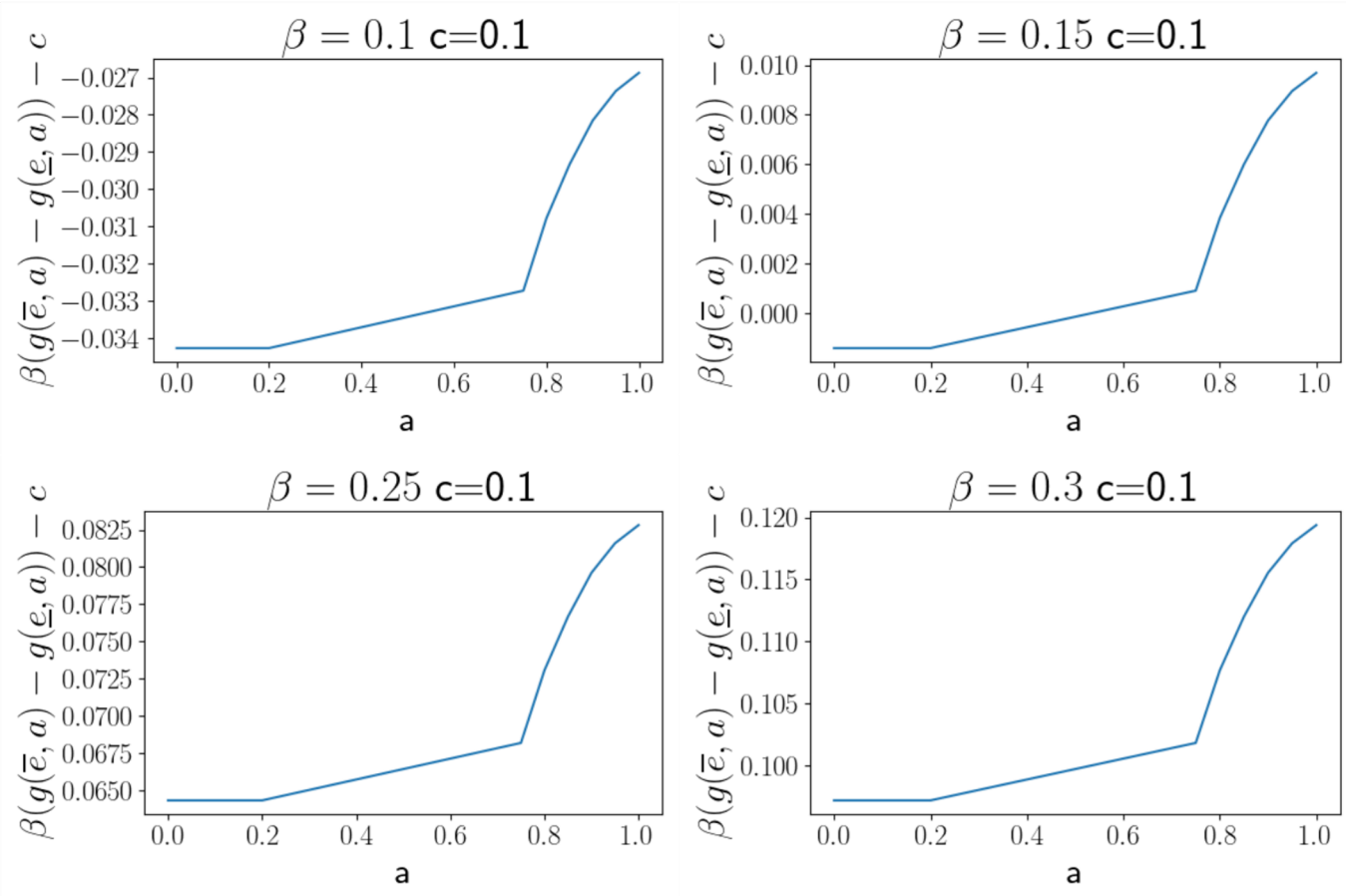


Figure 2: The value $\beta(g(e,a) - g(e,a)) - c$ increases as goal intentions a increase. The cost of high-effort is $c = 0.1$. As well, $\beta(g(e,a) - g(e,a)) - c$ decreases as present bias increases (β is lower).

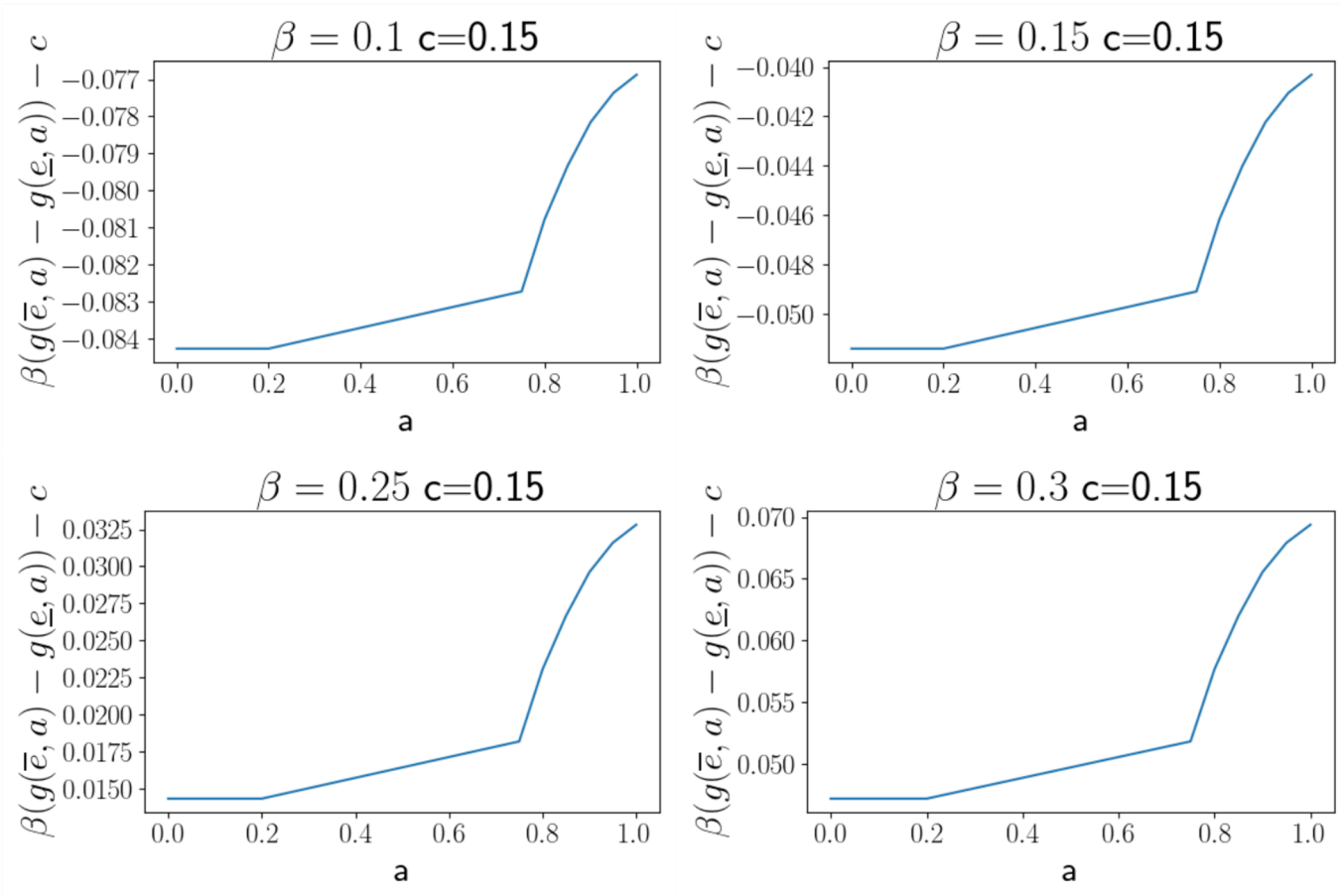


Figure 3: The value $\beta(g(e,a) - g(e,a)) - c$ increases as goal intentions a increase. The cost of high-effort is $c = 0.15$. As well, $\beta(g(e,a) - g(e,a)) - c$ decreases as present bias increases (β is lower).

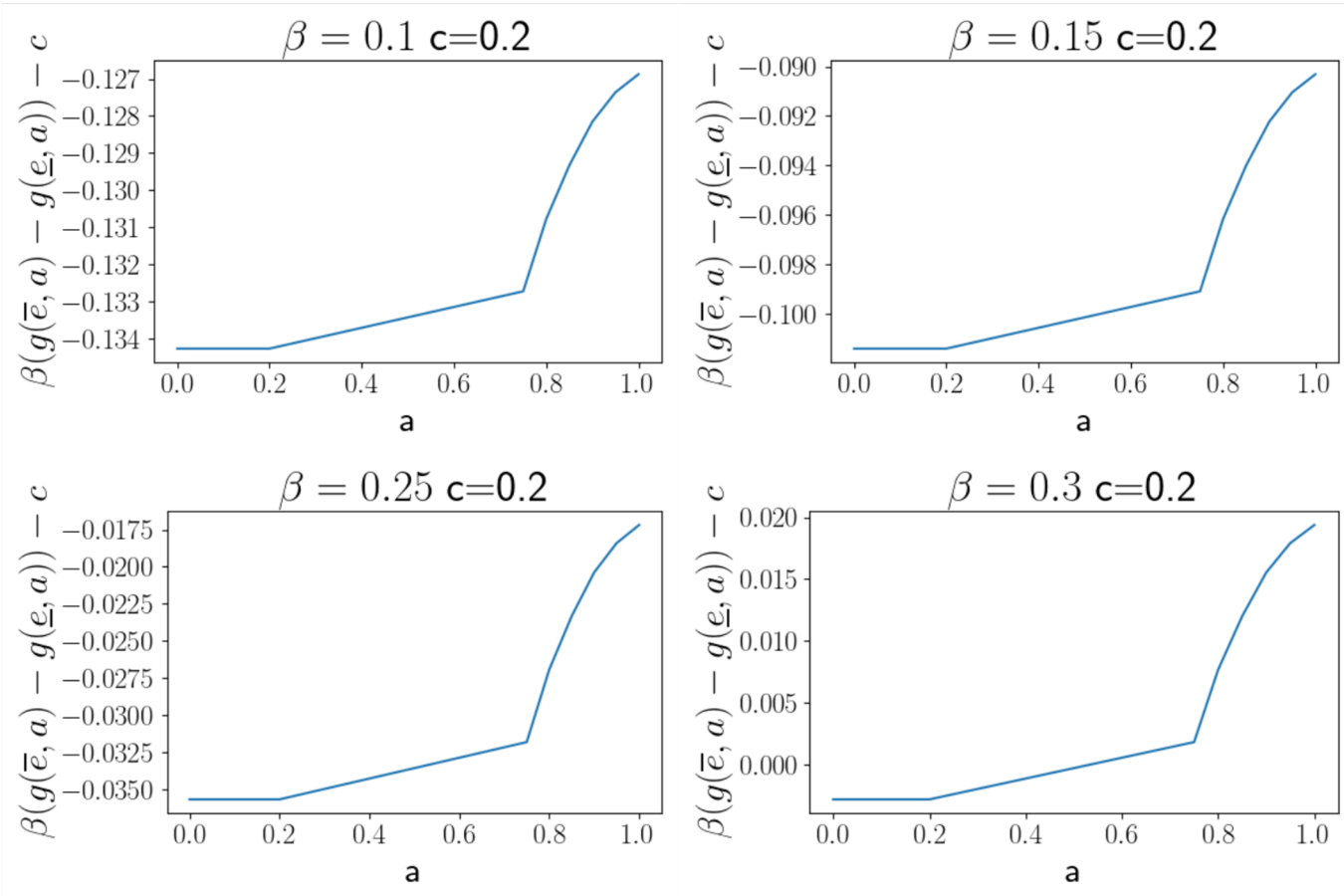


Figure 4: The value $\beta(g(e,a) - g(e,a)) - c$ increases as goal intentions a increase. The cost of high-effort is $c = 0.2$. As well, $\beta(g(e,a) - g(e,a)) - c$ decreases as present bias increases (β is lower).

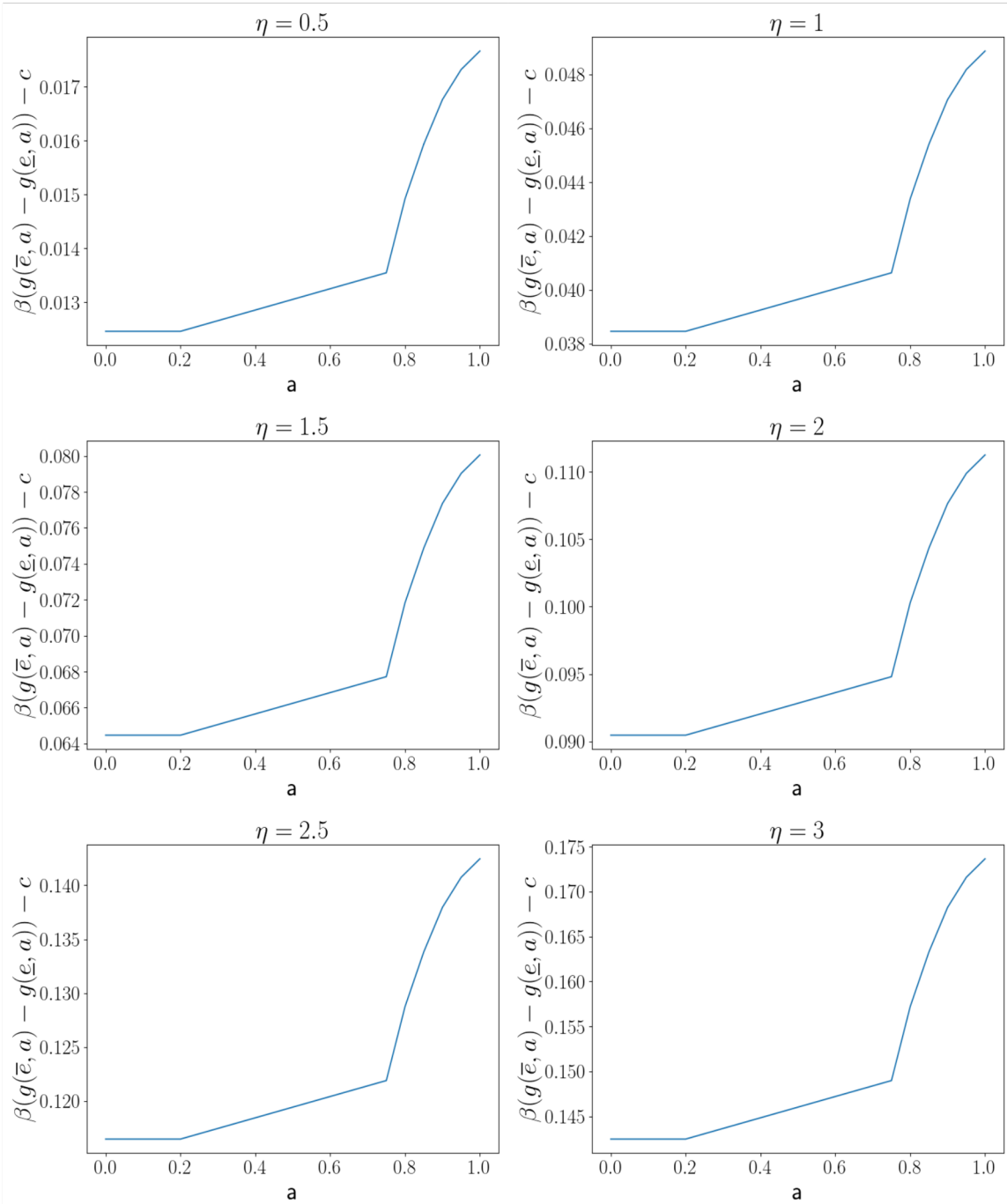


Figure 5: Incentive constraint $\beta(g(e,a) - g(e,a)) - c$ exhibits the same properties as η increases its value. In this experiment, the cost of high-effort was $c = 0.1$ and $\beta = 0.3$.

4 Conclusions

In this paper, we addressed the research question of what motivates reviewers in Information Science. We found that "Quality Control" is the most likely goal intention regarding the evaluation of a difficult manuscript, while "Networking Opportunities" is the least likely one. However, in a competitive deadline scenario, 25,9% of those surveyed would rather write a report to secure a peer-reviewed grant than write a review report for a difficult manuscript. Therefore, at least a quarter of the respondents seemed to overvalue immediate rewards over future benefits and intentions, and 42,5% of the respondents were more likely to accept higher evaluation goals if they received some financial incentive. Nevertheless, is this study a piece of evidence in favor of monetary compensation for reviewers? If so, under what conditions? What are the limitations of our study?

Here we found that in a competitive deadline scenario, a reviewer with "Quality control" as the evaluation goal and with an overly strong present bias will need a monetary incentive to write a review report for a difficult manuscript. However, if a reviewer's present bias is not overly strong, there is an evaluation goal that, after accepting the review invitation, motivates the reviewer to exert a high level of effort. Therefore, using an online survey, our answer to the first two questions would be as follows: (1) complex review processes carried out by reviewers who show severe present bias would have to be financially rewarded in a sufficiently high amount; however (2) reviewers who do not show present bias or whose present bias is not severe should be encouraged to choose high evaluation goals, as the financial incentive is not relevant to them. In conclusion, the main result of our study is that monetary compensation was important in incentivizing reviewers who exhibited an overly strong present bias, whereas financial incentives were not relevant for reviewers who did not exhibit a severe present bias. Nevertheless, high evaluation goals were important to all of them.

Regarding the limitations of this study, our survey did not collect any basic demographic information from the respondents. However, we invite only the corresponding authors of articles published in four top information science journals, who are generally senior researchers or highly experienced group leaders, to complete the survey. Another potential limitation of our study stems from the fact that most survey questions were subject to social desirability bias, especially as they were asked directly rather than, for example, through a vignette design. A third limitation is the fact that we have tested a large number of hypotheses, however we have not implemented corrective measures for multiple test cases. Therefore, a future line of research would be to analyze whether our results would change as a consequence of the introduction of these corrective measures, although we think that we will possibly obtain the same results.

References

Ackerman, D.S., and B.L. Gross. 2007. "I can start that “JME” manuscript next week, can’t I? The task characteristics behind why faculty procrastinate." *Journal of Marketing Education. 29,* 97-110.

Cameron, J., Pierce, W. 1994. "Reinforcement, reward and intrinsic motivation: Protests and accusations do not alter the results." *Review of Educational Research* 66: 39-52.

Deci, E. L., Koestner, R., & Ryan, R. M. 1999. "A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation." *Psychological bulletin, 125(6)* 627-668. https://doi.org/10.1037/0033-2909.125.6.627.

Deci, E., Ryan, R. M. 1985. *Intrinsic motivation and self-determination in human behavior.* New York: Plenum Press.

Eisenberger, R., Pierce, W. D., Cameron, J. 1999. "Effects of reward on intrinsic motivation: Negative, neutral, and positive." *Psychological Bulletin* 125: 677–691.

Ferrari, J. R., Johnson, J. L., & McCown, W. G. 1995. "Procrastination and task avoidance." *Theory, research, and treatment. Springer US.* https://doi.org/10.1007/978-1-4899-0227-6.

Garcia, J.A., J.J. Montero-Parodi, R. Rodriguez-Sánchez, and J Fdez-Valdivia. 2023. "How to motivate a reviewer with a present bias to work harder." *Journal of Informetrics* 17 (4): 101462. doi:10.1016/j.joi.2023.101462.

Garcia, J.A., R.. Rodriguez-Sánchez, and J.. Fdez-Valdivia. 2020. "The author–reviewer game." *Scientometrics* 124, 2409–2431 (2020). https://doi.org/10.1007/s11192-020-03559-6.

Hall, N.C., S.Y. Lee, and S. Rahimi. 2019. " Self-efficacy, procrastination, and burnout in post-secondary faculty: An international longitudinal analysis." *PLOS ONE 14(12): e0226716* https://doi.org/10.1371/journal.pone.0226716.

Hintze, J. L. 2008. *Quick start manual. PASS power analysis and sample size system.* Kaysville, UT: NCSS. Safarkhani and Moerbeek.

Huisman, J., and J. Smits. 2017. "Duration and quality of the peer review process: The author's perspective." *Scientometrics* 113(1):633{650. https:/link.springer.com/article/10.1007/s11192-017-2310-5.

Johnson, R., A. Watkinson, and M. Mabe. 2018. "The STM Report .An overview of scientific and scholarly publishing." *The Hague, The Netherlands. [Online]. Available: https://www.stm-assoc.org/2018_10_04_STM_Report_2018.pdf.*

Laibson, D. 1997. "Golden eggs and hyperbolic discounting." *Q J Econ. 112,* 443-478. https://doi.org/10.1162/003355397555253.

Langford, J,., and M. Guzdial. 2015. "The arbitrariness of reviews, and advice for school administrators." *Communications of the ACM* 58(4):12{13. https://doi.org/10.1145/2732417.

Memon, Mumtaz & Ting, Hiram & Hwa, Cheah & Ramayah, T. & Chuah, Francis & Cham, Tat-Huei. 2020. "Sample Size for Survey Research: Review and Recommendations." *Journal of Applied Structural Equation Modeling: 4(2),* i-xx. 10.47263/JASEM.4(2)01.

Mooi, E., Sarstedt, M., & Mooi-Reci, I. 2018. "Market Research: The Process, Data, and Methods Using Stata." *Singapore: Springer.*

Nguyen, B.,, P., Steel, and J.R Ferrari. 2013. "Procrastination's Impact in the Workplace and the Workplace's Impact on Procrastination." *International Journal of Selection and Assessment* 21(4), 388-399.

O'Donoghue, T., and M. Rabin. 1999. "Doing It Now or Later. ." *The American Economic Review, 89(1)* 103–124. http://www.jstor.org/stable/116981.

Pychyl, T. A.,, and G. L Flett. 2012. "Procrastination and Self-Regulatory Failure: An Introduction to the Special Issue." *J Rat-Emo Cognitive-Behav Ther 30* 203–212 https://doi.org/10.1007/s10942-012-0149-5.

Steel, P. 2007. "The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure." *Psychological Bulletin, 133(1)* , 65–94. https://doi.org/10.1037/0033-2909.133.1.65.

Superchi, C., González, J.A., Solà, I. et al. 2019. "Tools used to assess the quality of peer review reports: a methodological systematic review." *BMC Med Res Methodol* https://doi.org/10.1186/s12874-019-0688.

Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. 2004. "Motivating Learning, Performance, and Persistence: The Synergistic Effects of Intrinsic Goal Contents and Autonomy-Supportive Contexts." *Journal of Personality and Social Psycho 87(2)* 246-260 doi: 10.1037/0022-3514.87.2.246.

Zhang, T., H. Yin, L. Su, J. Wang, and D. Xia. 2021. "Application and classiffication of artificial intelligence-assisted academic peer review." *Chin. J. Sci. Tech. Periodals* doi:10.11946/cjstp.201911220799.

Appendix A: Survey Details

Question 1. ***When receiving an invitation to review a high-difficult manuscript, my goal intentions for the evaluation of the manuscript are:***

Q1.1 Quality control

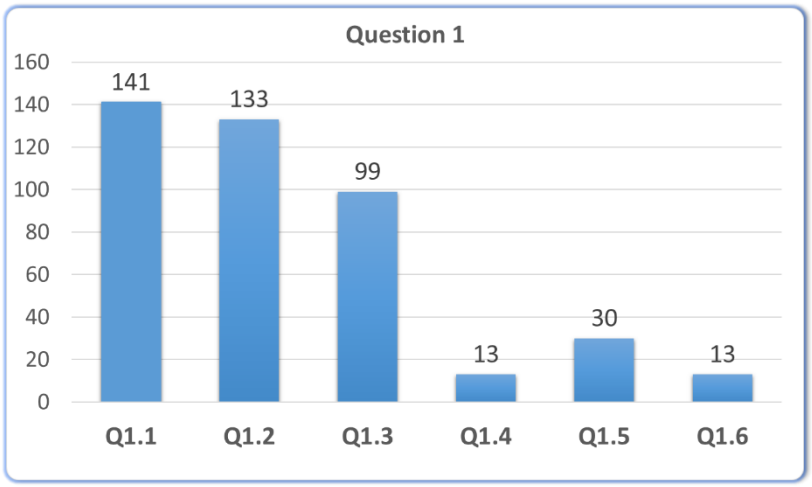
Q1.2 Helping the profession

Q1.3 Staying up-to-date

Q1.4 Networking opportunities

Q1.5 Just enjoying it

Q1.6 I have no goal intention

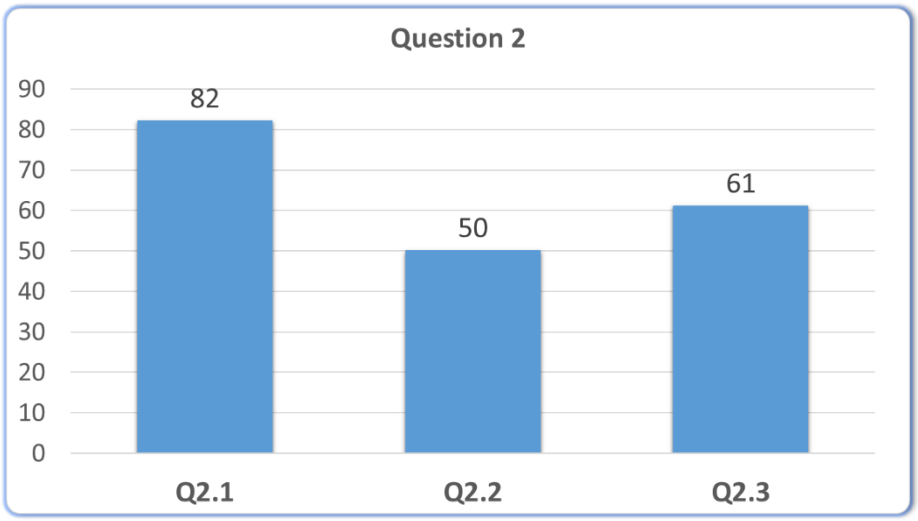


Question 2. **In a competitive deadline scenario, I prefer to**

Q2.1 Write a review report for a high difficulty manuscript

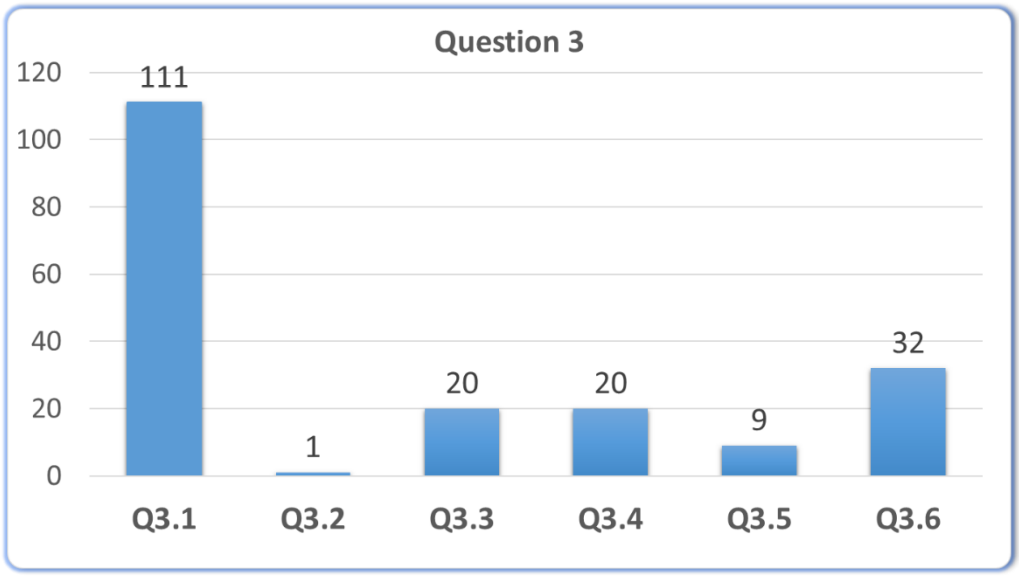
Q2.2 Write a report to secure a peer-reviewed grant

Q2.3 Both of the above two options

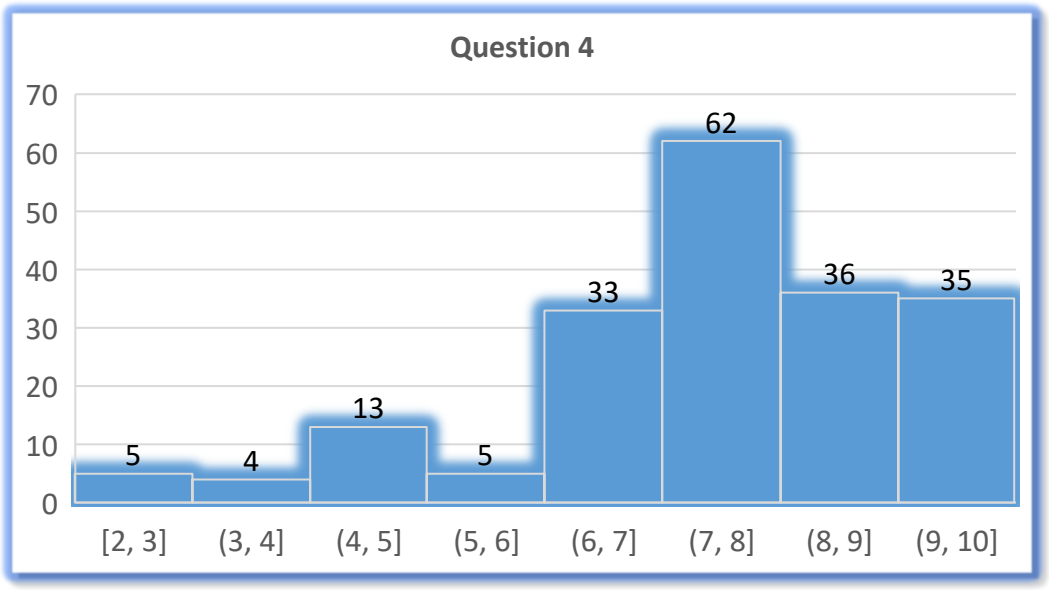


Question 3. **When invited to review a high-difficult manuscript, I am more likely to accept higher evaluation goals (e.g., quality control, in addition to helping the profession and keeping up-to-date) if the reviewer's compensation is**

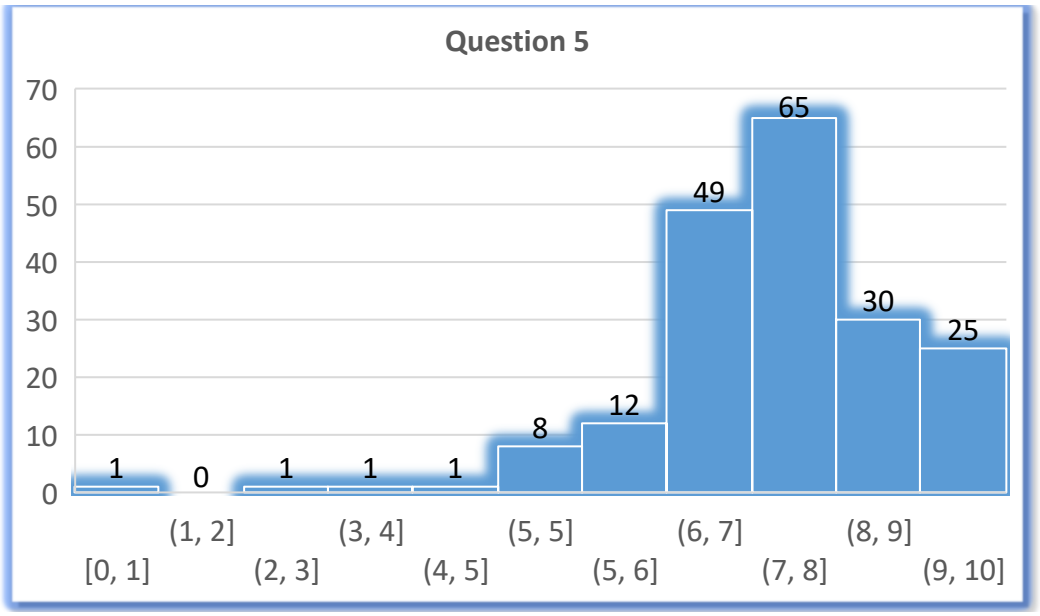
Q3.1 $0
Q3.2 $10
Q3.3 $50
Q3.4 $100
Q3.5 $150
Q3.6 $200



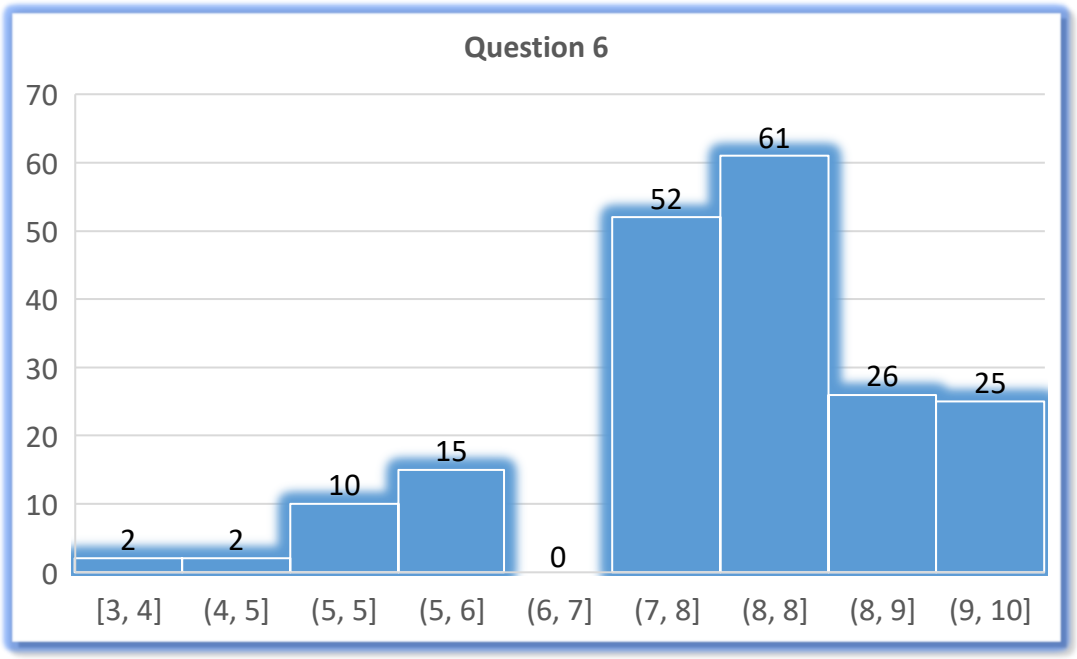
Question 4. **I work hard in the peer review process** (0: completely disagree; 10: completely agree)



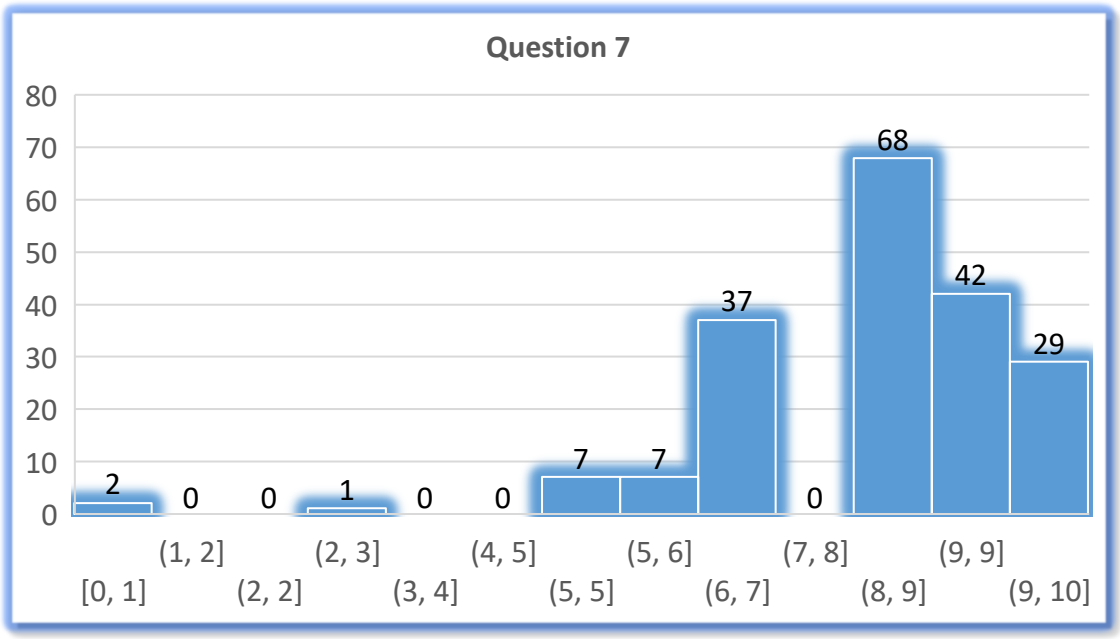
Question 5. **The quality of my reviewer report is very high (**0: completely disagree; 10: completely agree)



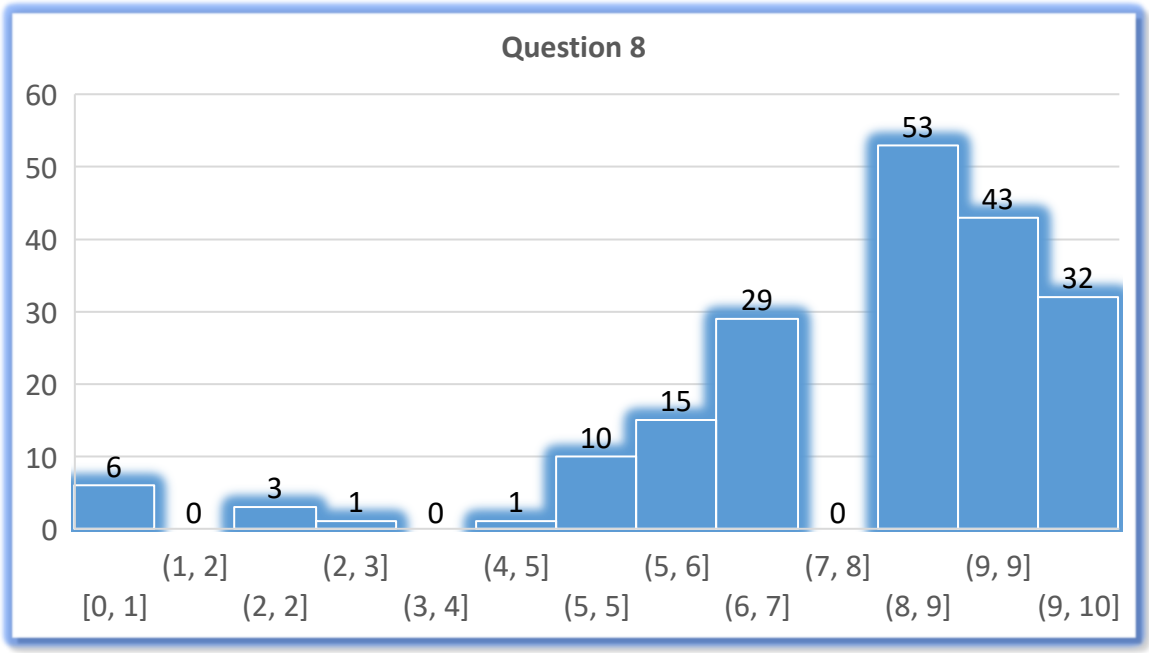
Question 6. **In terms of the evaluation of the novelty, the quality of my reviewer report is very high** (0: completely disagree; 10: completely agree)



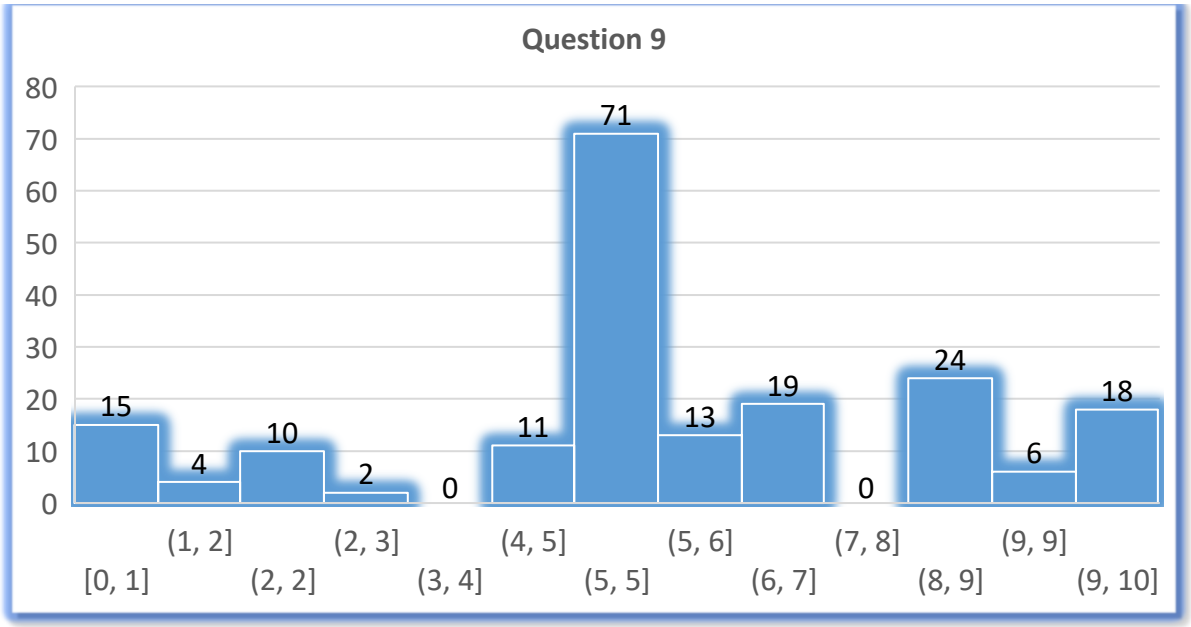
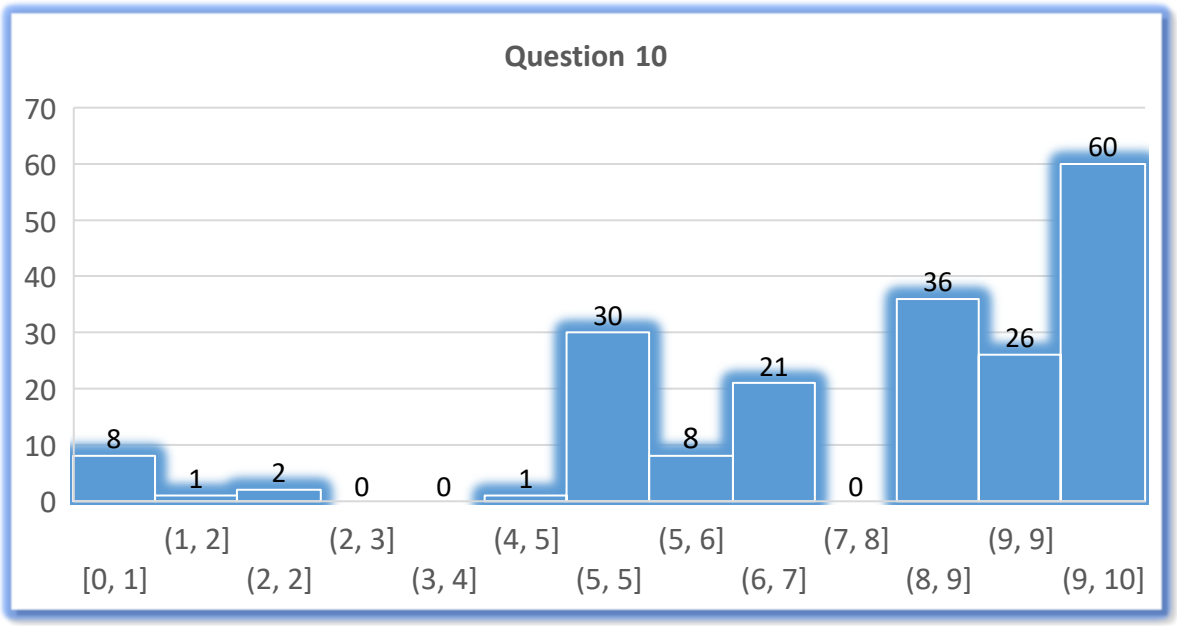
Question 7. **In terms of the evaluation of the results, the quality of my reviewer report is very high** (0: completely disagree; 10: completely agree)



Question 8. **In terms of the article's readability, the quality of my reviewer report is very high**
(0: completely disagree; 10: completely agree)



Question 9. **When the review report does not meet my evaluation goal, my dissatisfaction is**
(0: none at all; 10: a lot)



Question 10. **When the review report meets my evaluation goal, the satisfaction I get** is (0: not at all; 10: a lot)