



Peer review motivation frames: A qualitative approach



Monica Aniola Zaharie*, Codruța Luminița Osoian

Faculty of Economics and Business Administration, Management Department, Babeș-Bolyai University, Cluj Napoca, Romania

ARTICLE INFO

Article history:

Received 5 April 2015

Received in revised form

8 December 2015

Accepted 14 December 2015

Available online 29 December 2015

JEL Classification:

M12

O15

Keywords:

Peer review

Motivation frame

Review costs and benefits

Thematic analysis

Motivation crowding out

Volunteer dilemma

ABSTRACT

There is an ongoing need to support high-quality research publications that requires a greater emphasis on the role of the peer review process. The difficulties faced by editors in finding committed reviewers and in avoiding delayed review reports, as well as the frequency of failure in manuscript error detection, all stress the need to identify incentive strategies that will ensure high-quality peer reviews. Based on a qualitative approach, this paper explores referees' decision frames when reviewing, the characteristics of the review behaviour, and the associated benefits and costs. Semi-structured interviews were conducted with 42 journal referees. The results highlight the motivating factors that affect the decision to review, or not to review. Two motivation frames-of-reference were identified: that of a prospective member of the scientific community focused on self-achievement vs. that of a member of the scientific community focused on the group. Different situational cues activate a particular frame: the match between reviewer's expertise and the manuscript topic, the identification with the scientific community, and the quality of the journal. The findings suggest strategies able to minimize referees' perceived costs when reviewing. This research sheds new light on the strategies that have the potential to boost the peer review process.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction to peer review

Increasing challenges are faced to ensure the quality of the academic publication system. The exponential growth of the scholarly output and the shortcomings of the current review publication paradigms (Florian, 2012; Kriegeskorte & Deca, 2012; Priem & Hemminger, 2012) stress the need for a growing pool of reviewers. Consequently, there is a greater need to identify proper incentives to stimulate reviewers' contribution. Refused review requests, delayed review reports, and hardships in finding new reviewers are frequent problems faced by the grant funding organizations (Schroter, Groves, & Højgaard, 2010). A great challenge is to find committed, high-quality, experienced reviewers, available to invest their time in the review process. Considering all these challenges, one can note an ever-increasing gap between the number of reviewers needed and the number of reviewers available (Ketchen, 2008; Schroter et al. 2010). To benefit from a review system that increases its quality standards, stronger attempts to support the review process are mandatory. Thus, identifying

incentive strategies (Azar, 2006; Northcraft & Tenbrunsel, 2011), which motivate academics to peer review impacts heavily on the quality management of research output. Starting from here, this paper explores referees' motivational frame when reviewing, aiming to identify strategies able to boost the peer review behaviour.

Implemented since the early 18th century (Rennie, 2003), the peer review process developed more systematically as a result of the quantitative growth of research output, and increased specialization (Ware, 2008). The term peer review has already come into regular use, but it continues to mean different things to different journal editors. Similarly, peer review practices vary across fields and publications. Despite the many types of peer review, the main objective is to support editors in selecting and improving manuscripts for publication.

Notwithstanding the benefits entailed by the development of the peer review systems, numerous limitations still exist. Some of the criticisms are: the lack of science-based results to prove the efficiency of the peer review system (Jefferson, Rudin, Brodney Folsie, & Davidoff, 2007); low reliability between reviewers (Rothwell & Martyn, 2000); delay time from submission to acceptance; openness to biases associated with language, and academic field; the tendency to favour positive results (Rennie, 2003) or failure in detecting errors (Godlee, Gale, & Martyn, 1998). Biases

* Corresponding author. Teodor Mihali Str, No.58-60, 400591 Cluj-Napoca, Romania.

E-mail address: monica.zaharie@econ.ubbcluj.ro (M.A. Zaharie).

were reported with respect to nepotism (Sandström, Hällsten, 2008) and race (Ginther et al., 2011). Contradictory discussions were raised with regard to sexism in peer review (Kaatz, Gutierrez, & Carnes, 2014; Mutz, Bornmann, & Daniel, 2012; Wennerås & Wold, 1997). Moreover, one of the greatest shortcomings resides in the fact that the current review systems have not been enough tested and validated. Still, as Matt Hodgkinson, BioMedCentral editor states, "It's easy to criticize peer review, but it's harder to come up with a better system".

2. Conceptual approaches to peer review

The peer review system implies several mechanisms to improve the quality of publications. The mere existence of a review process motivates the authors to increase the standard of the manuscripts before submission. The review feedback guides the authors in revising the paper (Carpenter, 2009). Also, the peer review contributes to screening out the papers that do not meet a certain quality standard. While acknowledging its shortcomings (Baxt, Waeckerle, Berlin, & Callaham, 1998; Campanario, 1996; Shatz, 2004), the peer review brings benefits to most actors in the publication system (Ware, 2008). Thus, peer review is often considered a milestone for preserving the quality standard in research publications (Armstrong, 1997; Mulligan, 2005; Ware & Monkman, 2008). Despite the benefits, the scholarly editorial system faces increased difficulties. The main challenges reside in finding adequate reviewers, capable and available to provide correct and timely reviews (Ketchen, 2008; Tite & Schroter, 2007; Treviño, 2008).

Due to the importance of the quality of the review process, various theoretical approaches were applied to the analysis of the review process. Without focusing on a particular theoretical perspective, the current research follows an eclectic approach and builds on the findings advanced by the existing theories. This approach has both advantages and disadvantages. The multiple theoretical fountainheads challenged the interpretation of the data, but on the other hand, it allowed the emergence of original findings with respect to the reviewers' motivational frames.

While the peer review outcomes represent a public good (Kachelmeier, 2004), the scholarly review behaviour was also approached as a volunteer dilemma situation (Northcraft & Tenbrunsel, 2011). When considering whether or not to accept to review, it is assumed that the prospective referee faces a volunteer dilemma decision (Murnighan, Kim, & Metzger, 1993). The volunteer contribution game is already a well-known paradigm. It implies that each member of the group decides whether to contribute for the entire group benefit or to free ride on others' costs (Engers & Gans, 1998). The reviewer has to choose whether to allocate his/her own time to personal duties, hoping that others will undertake the peer review duty (individual benefit) or to act for the benefit of others, by dedicating his/her time to reviewing (Carpenter, 2009). The dilemma exists, because, in the scenario where all individuals decide to use the time for personal interests, there might be no public benefit (worst outcome for everyone).

Discussing this approach, Tenbrunsel and Northcraft (2010) believe that the option for an alternative favourable to the individual or one favourable to the group depends on the reviewer's beliefs about outcomes (costs and benefits). The authors emphasize the individual differences in perceiving the costs and benefits when deciding whether to review. According to the appropriateness framework approach (March, 1994), the decision makers first determine the type of decision they believe they face (the decision frame). This further determines their expectations concerning the outcomes. The decision frame allows the costs and benefits to be perceived as more or less relevant for the reviewer, thus influencing

the reviewing decision.

Trying to solve the review social dilemma, Tenbrunsel and Northcraft (2010) emphasize two components: actor focus and locus of responsibility. The actor focus is given by the consequences expected by reviewers, which can be focused on oneself or others. The locus of responsibility refers to the fact that the review can be perceived as part of the decision maker's job – an *in role*, or as a task outside the decision maker's job – an *extra role*. Power and professional identification are two main factors that influence the actor focus. Power was associated with self-focused behaviours (Handgraaf, van Dijk, Vermunt, Wilke, & De Dreu, 2008; Pillutla & Murnighan, 1996; van Dijk, De Cremer, & Handgraaf, 2004; Wade-Benzoni, Tenbrunsel, & Bazerman, 1996): reduced desire for reciprocity and less empathy for others' needs. Consequently, higher power referees might be less likely to do reviews. Moreover, stronger professional identification might be associated with the focus on others.

Another theoretical approach that was applied to the review behaviour is the group identification theory (Tajfel, 1981). If one identifies oneself as a member of the group, the cooperative behaviour will more likely appear. Cooperative behaviour is enhanced by group membership (Kramer & Brewer, 1984), meaning that decision makers who perceive themselves as members of a community will be more likely to volunteer. Brewer and Kramer (1986) show that cooperation with in-group members is increased even when communication is lacking. According to Northcraft and Tenbrunsel (2011), the locus of responsibility (in role/*extra role*) is influenced by peers' attitudes towards review, and by institutional rewards. Significant others' behaviours influence the decision maker's perception of the review as an *in role* vs. an *extra role* responsibility. Similarly, the institutional reward system influences the decision to review. Northcraft and Tenbrunsel (2011) model, a theoretical approach, needs to be further applied in empirical research designs, to get validated.

Moreover, solving such social dilemmas is of tremendous importance. It requires a thorough analysis of the decision, the outcomes perceived by reviewers, and the value reviewers attach to the consequences of their decision. We acknowledge the main criticism to the logic of appropriateness related to its lack of precision and difficulty in being operationalized (Goldmann, 2005). Thus, the present study makes a step forward by exploring this approach in the context of the review decisions.

Economics approaches state that individuals make decisions by comparing the costs and benefits, and when benefits outweigh costs, their behaviour changes positively. Thus, external incentives might be used to stimulate individuals to display a positive behaviour. Given the direct positive relationship between performances-based payment (piece rate compensation) and productivity (Lazear, 1996), financial incentives could be taken into consideration by editors to stimulate the review process. On the other hand, the motivation crowding theory (Frey & Jegen, 2001) states that external incentives crowd out intrinsic motivation if individuals perceive them to be controlling. This effect has also been called "the hidden cost of rewards" (Lepper & Greene, 1978). The crowding out effect implies that higher financial incentives reduce the supply, instead of increasing it. Both psychologists and economists now admit the possibility that motivation is negatively influenced if a previously non-financial relationship shifts to an explicitly financial one (Frey & Jegen, 2001). Still, further studies on this topic are needed.

Starting from these theoretical backgrounds, the primary research questions raised in this paper are: What decision frame do reviewers apply when deciding whether to review? What factors trigger a particular motivation frame? What are the main reasons that motivate reviewers to review? And, what costs do reviewers

perceive? The answers to these questions offer solution strategies that could be used to stimulate positive review behaviours. The present study aims to generate valid knowledge through the in-depth understanding of the review behaviour. The results shed light on situational cues triggering the decision to review. Besides this, the analysis explores how the prospective referees perceive review requests and whether they relate to review as a pro-social behaviour. Based on the findings, editors will be able to take evidence-based decisions regarding the incentives they should offer to stimulate reviewers, according to the referee's characteristics.

Despite the importance of identifying how strongly incentives can stimulate high-quality reviews, it is surprising to find limited empirical research analyzing the effect of external incentives. By the means of experimental design, [Chetty, Emmanuel, and Laszlo \(2014\)](#) identified three factors that reduced the time taken to review: the cash incentives, the shorter deadlines, and social incentives. Other studies have focused on the impact of payment on review ([Chang & Lai, 2001](#); [Hamermesh, 1994](#)). In this respect, [Hamermesh \(1994\)](#) hypothesized that the journals offering financial rewards received a larger number of timely reviews. [Chang and Lai \(2001\)](#) believe that editors should establish payments according to the reputation of the journal. The main drawback of these studies is related to their theoretical approach. Their focus on mathematical models of the effects rewards would have on review and have diminished practical applicability.

Considering the questions raised by the motivation crowding-in or crowding-out theory, the present research also explores how the perceived benefits and costs influence the outcomes of the review process. The qualitative analysis of the results focuses on both the review behaviour and the review decision. Moreover, the study covers specific cultural values and norms. The participants were referees from Romania, a South-East European country (an area that might have great potential in providing new scholarly referees). Part of the European Union since 2007, Romania has about 19 million inhabitants. The country employs over 27,000 academics in 93 public and private accredited universities (National Minister of Education, 2015) and has 56 research journals indexed in Web of Science. Concerning the place of academic research in the tertiary educational system, the national legislation went through frequent changes. As a rule, an emphasis was placed on teaching to the detriment of research. In 2005, a set of minimum standards was established for the research evaluation. Later, in 2006, 2011, 2012, and 2013, the multiple changes of the ministers of education brought new changes to these standards. The changes affected the level of the minimum research standards and led to changes in the criteria used to evaluate the research performance. As of 2011, in some academic fields, the minimum standards started to include criteria that rewarded editorial activity and review for high-quality journals. While the discrepancies between the emphases placed on publication to the detriment of review still exist, presently most of the standards at both national and institutional level also cover the review activity. Still, the standards only refer to being assigned as a reviewer and not to the number or quality of the reviews.

Given the importance of the public benefit of the peer review system, researchers survey the motives invoked when reviewing. The most frequent reasons to accept to review relate to: the accomplishment of the responsibilities expected from members of the academic community; the need to prove oneself helpful for improving the paper; the advantages of having access to new ideas before publication ([Carpenter, 2009](#)); the expectation of reciprocal benefits of having one's paper reviewed by a fellow reviewer ([Sense about Science, 2010](#); [Ware & Monkman, 2008](#)). [Tite and Schroter \(2007\)](#) identify a set of factors to be the most relevant for the decision of accepting to review, such as the contribution that the

paper makes to the field, the relevance of the topic to the reviewer, and the opportunity to find new information.

The report "Peer review in scholarly journals: Perspective of the scholarly community – an international study" ([Ware & Monkman, 2008](#)) shows that 91% of the 3040 academics in the sample see the review as a responsibility associated with being a member of the academic community. The respondents believe that reviews improve the paper quality (78%), and 69% enjoy having access to the text ahead of its publication. [Tite and Schroter \(2007\)](#) also found that getting feedback with regard to the final editorial decision on the reviewed manuscript and feedback on the quality of the review report would stimulate review. Review might be encouraged by the development of a public database with reviewers that favour the accountability of the reviewing behaviour ([Florian, 2012](#)). A different survey developed by [Sense about Science \(2010\)](#), which builds on the previous one, shows that the main reasons to review refer to playing an active role in the community (90%), helping to improve papers (85%), or reading papers before publication (72%). While these reports reveal valuable quantitative information with regard to the review practices and referees' motivation, the analysis of the results shows a further need for a more in-depth understanding of the review motivation frames.

3. Research methodology

3.1. Research sample

The research sample of this study included journal reviewers, from natural and social sciences, holding varying academic titles in Romanian universities. In the qualitative analysis, the validity of the findings depends more on the richness of the cases selected than on the sample size ([Patton, 1990](#)). For this reason, we applied the purposive sampling, aiming to get information-rich cases. In the first stage of the sample selection, an initial list of reviewers was established with the help of the editors of two Romanian journals, who had the role of key informants. They recommended us reviewers to include in the sample. We had a list with 68 names in total. To get sample variation ([Merriam, 2009](#)), we instructed the editors to have in mind the declining rate criterion, so as to cover reviewers who usually accept vs. refuse invitations to review. Following the maximum variation sampling strategy, in the second stage of the sample selection, we used two criteria: field of activity (natural and social sciences) and academic title (Assistant Professor, Associate Professor and Full Professor). Aiming to maximize the chances to reveal the differences among participants and to identify the typical patterns, we selected 51 referees. Previous research shows differences between tenured and non-tenured referees in the time taken to review ([Chetty et al. 2014](#)). Since the vast majority of the academic positions in Romania are permanent, our sampling could not vary this aspect, and the final sample included only tenured academics.

Of the reviewers who were listed, 42 took part in the individual interviews (nine reviewers could not be contacted or did not agree to participate). Continuous enrichment in data collection could have been further pursued, by expanding the reviewers' sample or by varying it in terms of review experience. Bearing in mind the objective of reaching theoretical saturation ([Miles & Huberman, 1994](#)), we decided to end the sampling, based on a reasonable capture of the identified themes. The final sample included 42 participants, 22 women and 20 men. All the participants were from Romania and held various academic positions: 15 Assistant Professors, 16 Associate Professors, and 11 Full Professors. As background field, 19 of them were from natural sciences and 23 from social sciences. The participants were of various ages, ranging from 28 to 63 years old, with the mean age of 37.05 years. A primary

selection criterion referred to review experience, which ranged from 1 to 20 years from the beginning of the review activity.

The length of each interview ranged from 15 to 110 min (mean length was 40 min). We do not attempt to generalise the findings to the entire population or subgroups of reviewers. Still, the purposive sampling supported the conceptual exploration and generation of explanations. We searched for data that captured both the review variations and common review patterns.

3.2. Research instrument

Using semi-structured interviews with journal referees (Creed, 2004), the study aimed to offer insight and to deepen the understanding of the motivation for the review behaviour. Through open questions, the research instrument focused on: a) the motives for doing reviews and the outcomes perceived, b) the reasons for declining to review, c) the incentives for the review behaviour, d) the costs associated with doing reviews, and e) the relation between the review and the job description. A set of descriptive data regarding referees' characteristics and their review behaviour was collected, covering the following: a). the characteristics of the review behaviour – the average number of manuscripts accepted for review per year; elapsed time to review; the number of declined review requests; b). the referees' personal characteristics – field of activity (natural or social sciences), academic title, research productivity (measured as the number of articles in Web of Science), the reward system for review in the affiliated institution, reviewer's age and gender.

3.3. Research procedure

As regards the methodology, previous studies on this topic implemented surveys (Carpenter, 2009; Sense about Science 2010; Ware & Monkman, 2008), focus groups (Mulligan, 2005), or natural experiments (Thompson, Aradhyula, Frisvold, & Tronstad, 2010). Based on a qualitative research approach, the present study explores referees' motivations to review using individual in-depth interviews. As an explorative research, the study attempts to understand the nature of the reasons behind referees' acceptance to review for academic journals. The data were analysed according to the *thematic analysis* approach that is differently perceived in the field literature. Some authors see it as a *method*, which should be considered a method in its right, being fundamental to qualitative analysis (Braun & Clarke, 2006). Others see it as a *tool* that can be used to different methods (Boyatzis, 1998). Ryan and Bernard (2000) consider theme identification as a *process* embedded in the major analytic approaches, such as grounded theory. The present study followed Braun and Clarke's (2006) approach to the thematic analysis to identify the main themes (patterns) in the motives lying behind referees' peer review behaviour. The use of this approach owes to its flexibility, as the thematic analysis is compatible with varied paradigms, from essentialist to constructionist ones (Braun & Clarke, 2006). We applied a realistic approach, searching for explicit themes across the set of empirical data.

Within the coding process, the analysis had a dynamic character, developing progressively, as did the interplay between researchers and the data. The entire coding process was done manually. By means of open coding, based on back and forth comparison within and between categories and their properties, we identified the main codes and grouped them in larger subcategories and categories. In the initial phase of the coding process, we started by using descriptive codes, very close to respondents' words, aiming to condense (but not reduce) the rich data (e.g. relationships, community colleagues, scientific community, professional duty,

reciprocity, reviewing tradition, scoring evaluation points, etc.). Subsequently, we went through several sessions of recoding, refining the descriptive codes in more abstract codes, categories and subcategories (Saldana, 2009). Along this process, we constantly searched for relationships between codes, categories and subcategories, trying to assemble the "big picture". The main themes were determined both inductively and deductively (Strauss & Corbin, 1998). In the initial phase, we identified five themes, which were condensed into two main themes after the second coding cycle. In the end, two main themes were identified, 81 final codes, linked in three categories and nine subcategories.

4. Review motivation: research findings and discussion

4.1. Motivation frames in the peer review process

The findings show both common motives that cut across the variations in the participants and differences among reviewers' motivational frames, as a function of the situational cues. The analysis revealed two frames through which participants perceive the costs and benefits: the frame of a member of the scientific community focused on the group vs. the frame of a prospective member of the scientific community focused on self-achievement. Three cues were found to trigger the activation of a particular frame: the identification with the academic community; the match between the reviewer's expertise and the manuscript topic; and the journal quality in relation to reviewers' self-perceived value. Fig. 1 presents the motivation frames thematic map that shows two main themes and three situational cues.

4.1.1. Reciprocal contribution to the elitist scientific community vs. gain in professional reputation by entering the elitist scientific community

The findings revealed differences in the reviewers' motivation frames. The senior reviewers, who also had higher research productivity (i.e., not all senior reviewers had higher research productivity), emphasized the *reciprocal* duty to fulfil reviews, since other scholars review their own manuscripts << It is the common practice; others review my manuscripts, so I have to do this too; it is tradition; one needs to allocate time for this; one needs to contribute to community, because as one has co-workers, one also has community colleagues ... an informal group, that conducts research on the same topic>> (Professor, M, natural sciences); <<this is a matter of profession, a professional duty to the scientific community>> (Associate Professor, M, social sciences). Doing reviews is a *reciprocal rule* of the community. For these respondents, doing reviews is a must, a tradition that one has to keep, a practice imposed by the needs of the academic community.

We can notice a particular frame (Tenbrunsel & Messick, 1999) through which these reviewers perceive the decision to review. This is a frame of a *member of the scientific community focused on the group*. The reciprocity is an important principle in this frame. By the logic of appropriateness (March, 1994), participants follow the reciprocity rule. It enables them to establish an agreement between the review request and their socially defined professional identity. Thus, this frame is more likely to lead to cooperative behaviour, making the reviewer feel the reciprocal duty to contribute to the academic community. Unlike the questions raised by the literature (Northcraft & Tenbrunsel, 2011), the focus is not necessarily on the other individuals, but rather on the entire group. The consequences of a review can be expected to impact the entire community. It is important to note that, according to our empirical findings, this frame is activated by at least two situational cues: 1) a strong identification with the scientific community and 2) a strong match between the topic of the manuscript and the reviewer's current or

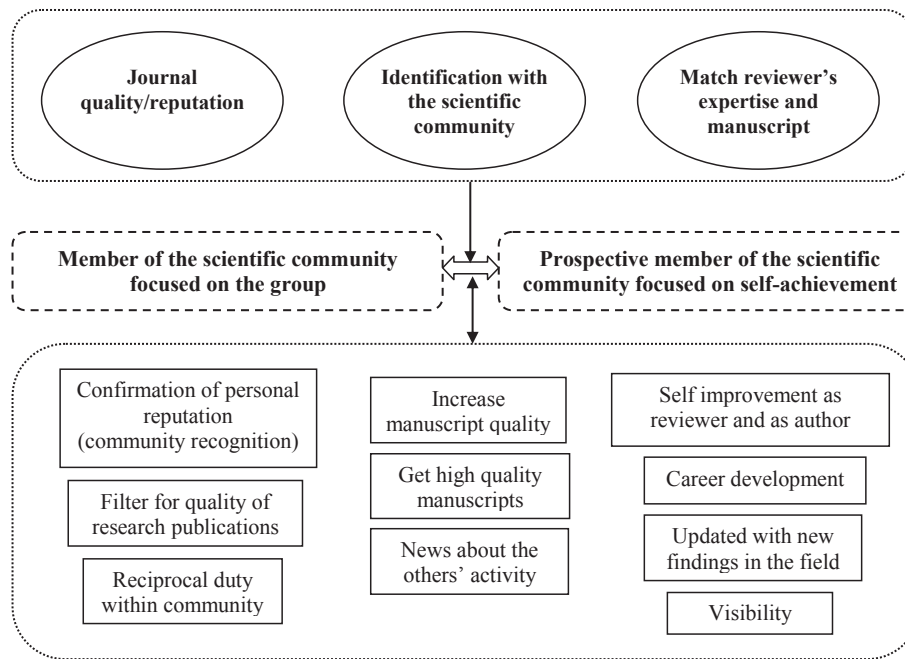


Fig. 1. Motivation frames thematic map

previous research interests.

Younger reviewers tend to apply a different frame. While their reasons to review are also related to their role in the academic community, the frame they apply is one of a *prospective member of the scientific community focused on self-achievement*. They share the desire to contribute to the community but do so with the hope that they will be recognised by the other members as part of the group. Most of their actions are self-focused and self-achievement oriented. Doing reviews is an opportunity to get updated with the new findings in the field, to increase the chances for career advancement, to improve one's reputation: <<it is our duty as academic researchers; you can also see what others write, how others write in your field >> (Assistant Professor, F, social sciences); <<one cannot develop as a researcher otherwise; you improve your research skills, it is learning by doing>> (Assistant Professor, F, natural sciences).

Young developing-scholars, regardless of their academic field or research productivity, perceive the review as an opportunity, rather than a cost. The main benefit brought by the review process resides in increased *visibility* and increased chances to *join* the scientific community: <<researchers in your field find out about you, you establish relationships and join the field community>> (Assistant Professor, M, natural sciences). Besides the interest in doing reviews for professional visibility gains within the community, for some respondents, getting invitations to review represents a form of professional *recognition*: <<it's proof that your expertise was remarked>> (Assistant Professor, F, social sciences).

We have to note that the opportunities seem to outgrow the costs. Also, contrary to the assumptions of the volunteer dilemma applied to peer review (see Northcraft & Tenbrunsel, 2011), developing scholars seem not to perceive the review as a classic volunteer dilemma situation. As decision-makers, referees expect the review to bring them a set of benefits (rewards offered by the affiliated institution, incentives from the journal, acknowledgment and even financial gain). While the review report remains a public good, the benefits perceived by the reviewer might relate to a sense of self-orientation, and not a pro-social orientation.

4.1.2. Identification with the scientific community

The analysis reveals the importance of the *scientific community* in the review process. Most participants mention the idea of community and this concept frequently appears in reviewers' answers, or it is referred to as <<the others>>, <<the authors in your field>>). We could note that respondents from both social and natural sciences used the phrase *scientific community*. However, there are differences between novice and senior reviewers regarding the role played by the community in their research activity. Also, there are differences in what the community means to respondents. While some refer to an abstract, ideal group of researchers (with whom they have no direct links), other reviewers refer to a very specific group of researchers, with whom they have personal relationships. The stronger the reviewer's identification with the scientific community(ies), the more powerful is the influence of the community on the review behaviour.

The answers showed that a strong identification with the field community makes the reviewer perceive the situation through the eye of a *member of the scientific community*. The strength of the identification is given by the relationships with other authors on the topic, by the frequency of direct or indirect interactions, participation in joint events, or reciprocal citations. This frame favours the acceptance to do a review. Moreover, when the referee perceives the review request through this membership frame, there is a decrease in the influence of external incentives on the acceptance to do a review. For example, the institutional reward system has a lower impact on the decision to review. This means that whether or not the institution encourages the review behaviour, the membership role is perceived to be relevant and supports an affirmative decision to review. On the contrary, in the case of respondents who do not apply this frame, the institutional reward system bears a stronger impact on the decision to review. Consequently, the institutional reward system has the potential to stimulate or prevent the review behaviour.

4.1.3. Journal quality as related to reviewers' self-perceived research productivity

A theme that emerged, as well as a factor that influences both

the motivation frame and the decision to review, is the quality of the journal. As expected, highly ranked journals are preferred by all respondents. Still, there are differences in the meaning and the manner in which the quality of the journal motivates reviewers. For some, a high-quality journal guarantees high-quality manuscripts << I usually refuse the review requests [...] if it is a prestigious journal, then I accept. There are higher chances for the manuscript to be of better quality>> (Associate Professor, F, social sciences). For others, the reputation of the journal positively confirms their reputation as researchers. It affirms them as part of the elitist scientific community << When you get review requests from highly reputable journals it's a sign that you matter for the valuable scientific community >> (Professor, F, natural sciences). Moreover, getting review requests is also perceived as recognition by the editor. This perception is strengthened in the case of a renowned journal << it is prestigious to be accepted as reviewer, because one needs experience, scientific background and scientific publications to be invited as a reviewer>> (Assistant Professor, M, social sciences); <<Once you publish valuable papers, you also get reviews. It is sometimes proof that you are appreciated as a specialist in the field>> (Professor, M, natural sciences).

We could also note that the reputation of the journal is a cue that triggers the frame through which the reviewer perceives the review. When reviewing for a high-ranked journal according to the self-perceived research productivity, the reviewer rather applies the frame of a *prospective member of the scientific community focused on self-achievement*. This shift takes place regardless of the review experience or academic field. Furthermore, this influences the perceived benefits and costs, causing even a senior reviewer to enjoy the self-achievement benefits.

4.1.4. The match between reviewer's expertise and manuscript topic

While all the respondents acknowledge the importance of the match between the reviewer and the manuscript, the analysis shows differences in the value attached to this match. For the senior reviewers, the match is a minimum requirement and not a motivating factor in itself: <<This is a serious job. One cannot play when reviewing. You have to be a real expert on the topic to be able to do a good review; it's not as playing football with friends, but with Real>> (Professor, M, natural sciences). Getting a manuscript that closely matches the reviewer's expertise means an increased capacity to provide valuable feedback. This further confers stronger power to reject worthless papers << I get a paper in my field, and I carefully analyze it. I might reject it for being too banal>> (Professor, M, natural sciences). A high match between referee's expertise and the manuscript topic activates the motivation frame of a *member of the scientific community focused on the group*. By applying this frame, regardless of the age or academic area, the reviewer becomes more of a guardian for the quality of the paper. Consequently, in such cases, the external incentives have a reduced impact, and the reviewer is rather motivated by the opportunity to improve the content of the paper or to screen it out.

We notice the filter role the reviewers play to ensure the *quality standards of the scholarly publications in the field*. Particularly for reviewers with higher research productivity, the filter function seems to be important. The reviewer acts as an expert and adopts the role of quality gatekeeper for the research in the (sub)field. When doing a review, it is important for reviewers to have the opportunity to judge the relevance of the topic to the research area and to screen out the papers that do not add value to the existing findings. They play an active role, by screening out the less valuable publication attempts in that specific field, thus protecting the community itself. With this in mind, one of the interviewees highlights the <<professional satisfaction to ensure the scientific health of the topic>> (Professor, M, natural sciences). The high-

quality papers, screened through a careful review process, ensure the *elitist* character of the academic publications <<the referees decide the quality of a journal>> (Associate Professor, F, natural sciences).

Also, a strong match brings a *learning benefit*, which fulfils the need to be better informed about others' writings << When you review a manuscript on a topic you are researching, you have the chance to compare your work to what others do in your field>> (Assistant Professor, F, natural sciences). This type of learning is focused on membership in the academic community and on keeping abreast of other members' research. Irrespective of the match with the manuscript, a different type of *learning benefit* was revealed in the developing scholars' answers, <<One can find new data, learn about new research findings on the topic; one can get better informed by reading the manuscripts, can see new trends, get new ideas>> (Assistant Professor, F, social sciences). These findings support other study results (Cho & Cho, 2011), which show that peers' comments improved the quality of students' writings. In this respect, our findings show that the referees see the benefit of *improving their performance in doing reviews*, based on the feedback got from editors.

4.2. The balance between perceived benefits and costs

According to the frame applied by reviewers, various benefits and costs were associated with doing reviews. The main benefits mentioned by respondents were related to the role they play in the academic community or to boosting their career. Also, an influential factor that determines the review behaviour is the relationship with the editor. As mentioned above, the perceived benefits included contribution to increasing the quality of the manuscript; confirmation of one's own personal reputation; satisfaction in being a filter for the quality of scholarly publications; professional development; increased research visibility; acknowledgment in the journal; certificates received for the review activity; community recognition; rewards/points offered by the affiliated institution (evaluation criterion in the periodical performance appraisals); submission privileges. Some respondents also mentioned financial rewards (exemption from membership/publication fees, access/discounts to the journal, or other financial rewards), but they did not focus on those. In Fig. 2 we present the main benefits and costs mentioned by respondents to be associated with the review behaviour.

Reviewers' perceptions of the value of the potential incentives vary according to the frame they apply. The reviewers who apply the frame *member of the scientific community* support the value of anonymous reviewers' list and do not expect to receive material incentives for reviewing. Since they perceive the review as a reciprocal duty, the benefits are inherently included in the review system itself. These reviewers get the satisfaction of protecting the quality standards of the journal and screening out the low-quality papers. They review because of the perceived reciprocal duty towards the other reviewers and the need to perpetuate the rules and values of the scientific community.

On the other hand, the respondents who apply the frame *prospective member of the scientific community* would appreciate benefits from the journal. Possible incentives include being mentioned on the journal website as a reviewer or being awarded a certificate that proves the role played in reviewing the journal manuscripts << being a reviewer allows you to mention it in your resume; many times you also need to prove it, so having a certificate or a web link might be very useful>> (Assistant Professor, M, social sciences).

With respect to the perceived *privilege when submitting*, the opinions on the chances to have a manuscript published in the

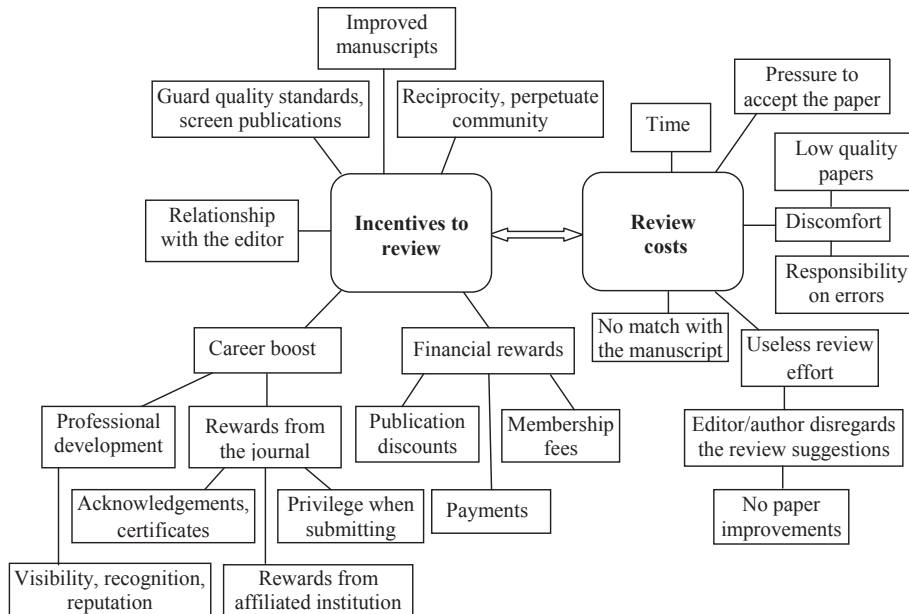


Fig. 2. The benefits and the costs to review

journal differ as a function of the review experience. While younger reviewers consider that they have higher chances to publish in a journal if they review for that journal, more experienced reviewers do not see this as an advantage << I went through both situations: I had manuscripts accepted for publication in journals I did not agree to review for, and I had manuscripts rejected by journals for which I agreed to review >> (Associate Professor, M, social sciences). This point of view of the more experienced reviewers seems to be contradicted by editors' opinions. While recognizing the drawbacks, in a qualitative study (Lipworth, Kerridge, Carter, & Little, 2011), the 35 editors in the sample admit that there is a current need for editors to give special consideration to manuscripts submitted by regular reviewers. The latter are seen to have a certain power over the editors, because of a feeling of dependency on them for performing the review and for the fact that, as authors, they could submit their papers to other competitive journals.

As expected, developing reviewers see receiving points in the performance evaluation process as a strong benefit. The analysis of the respondents' opinions on the *rewards granted by the affiliated institution* revealed interesting differences in the way these are perceived by reviewers. Young developing scholars acknowledge the value of getting points at the institutional yearly performance evaluation for reviewing << You get points on the criterion A3 >> (Assistant Professor, M, social sciences). Conversely, other scholars from the same institution and scientific field state that there are no rewards for reviewing << It doesn't matter to our performance evaluation >> (Assistant Professor, F, social sciences).

For a better understanding of these results, we briefly present the particular situation in Romania. Traditionally, the education system used to place greater focus on teaching than on research. During the last ten years, the performance evaluation systems and promotion criteria shifted the focus on academics' research outcomes. Within the research criteria, there is a strong emphasis on authorship, which outweighs the review activity. Still, since 2011, most of the national and institutional standards for research evaluation include the criterion Membership in journal editorial boards. Being a comprehensive criterion, a large variety of situations can be included. This criterion does not reward directly the review activity itself, but the membership, which can often mean

just a formal designation, based on no merit << This doesn't count in evaluation. Well, there are some criteria, but we all check it to get the points. You know, we all are in some editorial boards or committees. The department conference board or the department volume board ... I wouldn't count this >> (Associate Professor, F, social sciences). On this topic, the theoretical approach advanced by Northcraft and Tenbrunsel (2011) states that the review task is perceived as an in-role responsibility when the reviewer's affiliated institution and the other peers reward it. The more the organisation and peers reward reviewing, the more it will be regarded as part of the job.

Our study reveals contradicting results. Despite the small level of rewards offered at the institutional level, the participants in the sample see the review as an in-role responsibility. We could note different connotations of the in-role concept. While most participants in the sample do not consider it a task imposed by their job description, they see it as a requirement of being a researcher, an in-researcher role responsibility. Concerning peers' behaviour, it was interesting to find that developing scholars declared to have little information about their colleagues' review activity << I don't know what others do. I didn't ask them. We didn't talk about reviews >> (Assistant Professor, F, social sciences). Also, some respondents perceived the other colleagues to be less involved in review << I don't know for sure, but I think they do not take reviewing seriously >> (Associate Professor, F, social sciences). A stronger identification with the community triggers the activation of the frame *member of the community focused on the group*, and review is seen as an in-community responsibility.

The *personal relationship with the editor* was also a benefit reported by respondents to be important for their decision to review << It really depends on who is asking me to review, what relationship I have with that person >> (Associate Professor, F, social sciences); << I sometimes accept because of my friendship with the editor >> (Associate Professor, F, social sciences). Since reviewers' behaviour is influenced by the perceived relationship with the editor, these findings support Chetty's et al. (2014) suggestion: personal letters from the editor to referees represent an incentive strategy that has powerful effects on the review behaviour.

The *financial rewards* were not identified as a central category in

the data collected. However, since it was of interest for the study, the topic was raised by the researcher during the interviews. While the highly research productive respondents were rather reluctant to the idea of payments for review, some respondents expressed a positive attitude towards payment. The main advantage mentioned by reviewers as a consequence of payment was a possible decrease in the time review turnaround time. This is consonant with other findings (Thompson et al. 2010). On the other hand, some reviewers showed great concern for the possible negative consequences: fear of being forced to give more favourable reviews or even having to accept the manuscripts; fear of corruption << it would just pervert the system. I remember what happened when membership in doctorate evaluation committees was paid >> (Associate Professor, F, social sciences). Few respondents could identify a specific amount considered to be fair compensation for a review. Some respondents' opinions support Gneezy and Rustichini's (2000) findings: the financial rewards, if any, should be large enough to make a difference for reviewers' income << I don't know. 50 euro for a review [laughing] >> (Assistant Professor, F, social sciences).

In the interpretation of the results, we paid attention to the *motivation crowding out* or *crowding in* approach (Frey & Jegen, 2001). Starting from the external rewards mentioned by reviewers (such as acknowledgement in the journal, points granted by the affiliated institution in the periodical performance appraisals, or other kinds of payment), the results showed that these were associated with decreased intrinsic motivation. In the short run, an increase of external incentives increases the number of reviews. In the long term, if the external incentives disappear the number of reviews could decrease. This is only partly consonant with the experiment done by Chetty et al. (2014), which argues that cash incentives motivate review pro-social behaviour, with no adverse effects on intrinsic motivation. Contrary to this study, our findings show that reviewers' internal motives (such as interest for the manuscript itself, for its quality, curiosity in findings, or concern for the usefulness of their comments) are strongly decreased in the case of reviewers who are motivated by external benefits. Moreover, respondents who pointed out mainly external incentives seem to be more concerned with the time they have to spend doing the review. They are also more oriented to getting the review done. This external focus outweighs relevant suggestions aimed to improve the manuscript. The methodology we applied does not allow us to establish a causal relationship between these two variables. We cannot say that the external rewards *crowd out* the internal motivations. However, we did observe that the participants who mentioned the external benefits did not mention any internal ones. In addition, another phenomenon was revealed: reviewers motivated by external benefits give up the review when the reward is withdrawn or when they do not obtain the expected reward << I had to refuse the review request. I explained the editor that I can only continue to review if I get appointed to the advisory board. Just reviewing doesn't count anymore in our performance evaluations. We have to be in boards >> (Researcher, F, social sciences).

It is also interesting to note the interaction found between intrinsic motivation and the reviewer's self-perceived power. Although power was found to be associated with self-focused behaviours (Pillutla & Murnighan, 1996; van Dijk et al. 2004), our findings do not support this assumption. Particularly for reviewers with strong intrinsic motivation, higher power (high academic title, management position, Ph.D. advisor position, team projects leadership positions) does not influence adversely the focus on the group reciprocity norm. Moreover, respondents with a higher power position seem to express a stronger desire to protect the quality of the scientific field.

When dealing with a review, the associated costs represent an important topic for discussion. The costs perceived when doing a

review are mainly related to the *time* needed to read the manuscript and complete the report. Lack of time is a common complaint of the faculty and members of any other profession. The results show that time constraints are perceived as a greater problem by reviewers with higher power: << definitely, it also depends on the timing of the review. But ... anyway [smiles], we are always busy >> (Associate Professor, F, social sciences). Since time perception is a subjective and complex matter, it is outside the scope of this study to assess in more detail how perceptions of time influence the review behaviour.

Another inconvenience mentioned by respondents was the *discomfort* when reading *low-quality manuscripts* << having to read poor quality papers is not at all pleasant, but boring, and it often frustrates me. It is a lack of respect on the part of the author >> (Associate Professor, M, social sciences). Some respondents point out the reviewer's *high responsibility in relation to the errors* of the manuscript << one takes charge of the accuracy of the content. It is a risk in the long run if you overlook errors. Just think that the paper might be accused of plagiarism in the future. And you approved it >> (Associate Professor, F, social sciences).

Also, young respondents mention the *small chances that their recommendations would be taken into account by editors and authors* << since I am not that famous in the field, I doubt that my opinion matters, especially if the other reviewer has a different viewpoint. The chances of the recommendations I make to be fully implemented by the author are small >> (Assistant Professor, F, social sciences). The data show a double display of the perceived *uselessness of the review effort*: the editor might disregard the review feedback, and the author might not revise the manuscript according to the recommendations. Moreover, some reviewers complain about the *pressure to accept a manuscript despite its low quality*. This happens because the journal might need accepted articles for publication or because a particular paper has to be published. This has negative consequences on the quality of the publications, decreasing the journal quality standards. On the other hand, the results show no expected risks of having one's manuscripts declined just because in the past the reviewer did not accept to review for a specific journal << If my manuscript is valuable, I do not worry about rejection just because I declined to do a review for that journal >> (Assistant Professor, M, social sciences).

The analysis of the results shows that there are differences between reviewers in the perceived costs-benefits ratio. For young developing scholars, the value of the perceived benefits is more relevant for the review decision, compared to the costs. In the frame *prospective member of scientific community focused on self-achievement*, the reviewer directly benefits by a set of payoffs. For senior reviewers, the opportunity costs might be higher, and the perceived benefits have a stronger impact on the others, and less on themselves.

The present research has practical implications for editors to support them encourage reviews. Our results show that by increasing the relevance of the manuscript for the reviewer, through a better match between the reviewer and the topic, the editors could increase the chances for reviewers to adopt the membership motivation frame. By ensuring this match, which activates the membership frame and a stronger professional identification, editors increase the chances to get more useful reviews, content oriented reviews. Starting from here, further studies should identify strategies to enhance researchers' professional identification, which in its turn might influence the review output positively. This should include not only external incentives, such as performance evaluation criteria that reward the review, but also the development of a review culture at the university level.

In identifying strategies that editors could use to stimulate the review process, the analysis of the costs perceived by reviewers,

aimed to minimize such costs, proves to be very fruitful. Some reviewers complained about the feeling of useless review efforts. In this respect, editors could support reviewers to see the outcome of their review. This means that editors should take the time to inform the referees about the revisions done by authors, about the journal's final decision on the manuscript publication, offer open feedback with regard to the review report, and provide reviewers with review instructions tailored to the journal requirements. Also, in the case of a publication decision contradictory to the reviewers' recommendation, the editors should clearly explain the final decision to the reviewer. This way, editors will stimulate the feeling that additional effort will lead to a valued outcome. Editors could also provide reviewers with periodical journal reports with regard to the review process. The feedback offered by the editor and the relationship with the editor will play a great role in motivating the review behaviour.

Another area for improvement comes from the cost mentioned by reviewers in relation to the discomfort of having to review low-quality papers. To counteract this, editors should focus on the pre-selection of the papers submitted for review. Investing in the stage of screening out the papers sent to review ensures higher quality reviews on the long term.

4.3. Characteristics of the review behaviour

An important part of the study is related to the review behaviour, operationalised as the number of manuscripts accepted to review or review requests declined; the focus of the review report; and review turnaround time. An important question we raised in our analysis was: How do the incentives offered to reviewers affect the review behaviour? While the extensive surveys in the field literature are mainly focused on identifying the main reasons to review (Carpenter, 2009; Tite & Schroter, 2007; Ware & Monkman, 2008), we took these findings a step forward. We explored how the perceived incentives related to respondents' perceptions of the review process.

The answers show that the *focus of the review report* seems to vary across reviewers according to their experience. More experienced reviewers pay considerable attention to the ideas of the manuscript, to its added value for the field literature, novelty and originality of the text, and relevance of the references used. In contrast, young developing scholars more often than not contribute to the improvement of the formal aspects of the manuscript. They frequently refer to length, correspondence of the format with the journal paper template, spelling errors, and language.

4.3.1. The time to review

There are differences between reviewers concerning the way they approach the time to review and the time taken to finish the report. More experienced and higher research productive reviewers declare they invest more time in doing a review. Consequently, the deadline they expect to be set by the editor is longer << Definitely, it takes a long time to finish the review. This is not a matter of one or two days. You cannot just read it as you regularly read an article. You have to analyze carefully the content, read it with responsibility. You need to sleep over some of the ideas in the manuscript and revisit them >> (Professor, M, natural sciences); << it takes at least one week >> (Associate Professor, F, social sciences). Senior reviewers refer to the time concept not necessarily as a time of work on the text itself, but a period that has to pass to thoroughly analyze the main ideas of the manuscript. The highly research productive reviewers do fewer reviews and need about 5–6 h to complete the review in a period ranging from 1 to 4 months. Developing scholars accept to do more reviews, take an average of 1–2 h for a review, and complete the review during a

period of 5 days up to 4 weeks.

4.3.2. The number of reviews

The results also show differences in the number of total reviews done by respondents. While senior reviewers do a smaller number of reviews (they consider that three or four reviews per year are a reasonable workload), developing scholars accept a larger number of review requests (10–15 reviews per year).

4.3.3. Declined reviews

Previous surveys (Sense about Science, 2010) find that many reviewers rarely refuse to review (40% of the reviewers declare that they have not declined a review recently enough to recall). Conversely, other studies find that editors need to issue from six to ten invitations to get three commitments (Ketchen, 2008). Given these contradictory findings, the present research aimed to explore reviewers' perception of declining. Most participants stated that they only declined due to time constraints and lack of expertise on the topic of the manuscript. The refusal rate is dependent on the quality of the journal and the match between the topic of the manuscript and the reviewer's expertise. Our analysis revealed interesting results about how respondents define declining. Often, not doing a review because of the mismatch with the topic of the manuscript was not counted as a declining situation << I couldn't say I declined [...] if the manuscript is not in my field I really cannot do it >> (Professor, F, social sciences). The more experienced and highly research productive reviewers tend to refuse more often when requested to review a manuscript that does not fit the area they master. The interviews showed great disappointment coming from respondents with better academic reputation concerning the situations when referees accept to review on a subject they do not master << It is not fair to judge on a topic in which you lack expertise. Really, I do not like those who accept to review and do not master the specific topic >> (Professor, M, social sciences). This is considered to be unfair in terms of research ethics. Possible explanations relate to the fact that they perceive the role of the reviewer to be a guarantee for the quality of the manuscript and impose higher expectations on their comments. It can also be related to their greater courage to admit to not having competence in a certain area. Also, there can be many levels in the degree of matching expected. Since senior reviewers request for a stronger match, the decline is based more often on the poor match with the topic. On average, the number of reviews they do is smaller << I usually do about three or four reviews per year >> (Professor, M, social sciences). Still, they contribute by recommending other potential reviewers. On the other hand, this reason to decline is less frequent among the developing scholars, who are more prone to accept to do a review on topics for which they do not have that much experience. While accepting to do a review contributes to the public benefit (a reviewed manuscript might be better than one with no review), this might decrease the quality standards applied when evaluating the paper. Consequently, this might lead to a decrease in the quality of the public good.

5. Concluding remarks and further research

According to the motivation frame applied, the current research results show differences in how reviewers perceive both the review process and the benefits of reviewing. When the referee perceives the review as a *member of the scientific community focused on the group*, the review behaviour is ruled by the reciprocal duty to contribute. When the referee applies the frame *prospective member of the scientific community focused on self-achievement*, doing reviews is perceived as an opportunity for progress in the academic career.

Three factors were identified to activate a certain frame: identification with the scientific community, journal quality according to reviewers' self-perceived research productivity and the match between referee's expertise and manuscript topic. A stronger identification with the community and a high match between referee and manuscript activates the motivation frame of *member of the scientific community focused on the group*, with the associated perceptions and behaviours. When reviewing for a higher ranked journal, no matter of the review experience or academic field, the reviewer rather applies the frame of a *prospective member of scientific community focused on self-achievement*.

The scholarly literature presents the review process as a volunteer dilemma case (Carpenter, 2009; Kachelmeier, 2004; Murnighan et al. 1993; Northcraft & Tenbrunsel, 2011). The current findings suggest further consideration before defining the decision to review as a pure volunteer dilemma situation. The qualitative approach of the present study revealed reviewers' subjective perceptions of the review benefits and costs. When applying the frame *prospective member focused on self-achievement*, the review opportunities are perceived to outweigh the costs. This contradicts the theoretical model, making the review decision less compatible with the classical volunteer dilemma approach. An explanation for these findings could reside in the particular cultural context of the participants' sample. The sudden increase in the weight of the research output within the performance evaluation system in Romania might determine developing scholars to be more focused on improving themselves as researchers. Implicitly, this might determine them to attach a higher value to review, as a research activity.

The present research has practical implications for editors to encourage review. The characteristics of the review behaviour vary as a function of the frame applied. Starting from the findings, we emphasize the importance of minimizing the costs of review to stimulate high-quality reviews. In addition to focusing on incentives, editors are encouraged to apply the following strategies, which could lead to decreased costs for reviewers:

1. Ensure the match between the reviewer and the topic of the manuscript;
2. Provide reviewers with open and individual feedback with respect to the quality of their review reports;
3. Inform the reviewers about the final publication decision of the manuscripts they evaluate;
4. Focus on the pre-selection stage, by screening out the papers that do not meet a certain standard.

The debate remains open with regard to the consequences of external incentives. Analysing the effects of the external review rewards (incentives given by the affiliated institution, or by the journal), the results showed that these were associated with decreased intrinsic motivation. Unlike other results (Chetty et al. 2014), our findings show that reviewers' internal motives are diminished in the presence of external rewards. The interest for the manuscript itself, its quality, the curiosity in findings, or the concerns for the usefulness of their comments are decreased for the reviewers who are motivated by external benefits. Given these findings, deciding what external rewards to offer for review should be carefully considered. The institutional performance evaluation systems should include criteria to encourage responsible review while downplaying a purely quantitative focus on review.

Unlike the findings of other studies (Handgraaf et al. 2008; Northcraft & Tenbrunsel, 2011; Pillutla & Murnighan, 1996; van Dijk et al. 2004; Wade-Benzoni et al. 1996), in the present paper, the higher power of the reviewer does not seem to be associated with a focus on oneself. On the contrary, it was associated with the

frame focused on others, and consequently, on the need to contribute to the benefit of the academic community. We have to mention that we noticed a relation between power and professional identification: reviewers with a higher power also expressed stronger professional identification.

The analysis of the costs-benefits balance revealed interesting findings. For the young developing scholars, the perceived benefits have a stronger impact on the review decision, compared to the perceived costs. Within the frame *prospective member of scientific community focused on self-achievement*, the reviewer enjoys more personal benefits. For reviewers applying the frame *member of the scientific community*, the perceived opportunity costs might be higher. Also, the benefits perceived have a stronger impact on the others, and less on themselves. Moreover, while the costs mentioned by respondents seem somewhat similar between the two frames, there might be stronger differences among the perceived opportunity costs.

The main limitations of the present study fall within the boundaries of qualitative research. Although we ensured the validity of the analysis by using two coders, we are aware that the study design and analysis were influenced by researchers' perceptions. Another limit is related to the number of participants. Starting from here, further analysis should aim to cover better the broad range of reviewers' opinions as a function of scholarly reputation, reviewing experience, geographical area, scientific field, and reputation of the affiliated institution.

The findings of this research support the results reported by other studies, especially with respect to the differences that exist between reviewers. Particularly when applying the frame *prospective member of the community*, without ignoring the need to contribute to increasing the manuscript quality, the focus lies on personal benefits, such as increased professional visibility and career development. On the other hand, the reviewers applying the frame *member of scientific community* perceive the review as a research community duty, meant for the group benefit.

Nevertheless, compared to quantitative surveys, these findings emphasize reviewers' detailed perception on the review motivation frame and reveal some consequences that incentives have on the review motivation and behaviour. Also, while most surveys on peer review report quantitative results with regard to the review behaviour, the present study reveals in-depth findings with regard to review refusals, as well as acceptances.

Acknowledgments

The authors want to thank to Forian Răzvan and Duncan McDougall for the feedback offered while conducting the research.

References

- Armstrong, J. S. (1997). Peer review for journals: evidence on quality control, fairness, and Innovation. *Science and Engineering Ethics*, 3, 63–84.
- Azar, O. H. (2006). The academic review process: how can we make it more efficient? *The American Economist*, 50(1), 37–50.
- Baxt, W. G., Waeckerle, J. F., Berlin, J. A., & Callahan, M. L. (1998). Who reviews the reviewers? Feasibility of using a fictitious manuscript to evaluate peer reviewer performance. *Annals of Emergency Medicine*, 32(3), 310–317.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Brewer, M. B., & Kramer, R. M. (1986). Choice behavior in social dilemmas: effects of social identity, group size and decision framing. *Journal of Personality and Social Psychology*, 3, 543–549.
- Campanario, J. M. (1996). Have referees rejected some of the most-cited articles of all times? *Journal of the American Society for Information Science*, 47(4), 302–310.
- Carpenter, M. A. (2009). Mentoring colleagues in the craft and spirit of peer review. *The Academy of Management Review*, 34(2), 191–195.

- Chang, J.-jen, & Lai, C.-chong (2001). Is it worthwhile to pay referees? *Southern Economic Journal*, 68, 457–463.
- Chetty, R., Emmanuel, S., & Laszlo, S. (2014). What policies increase prosocial behavior? an Experiment with referees at the journal of public economics. *Journal of Economic Perspectives*, 28(3), 169–188.
- Cho, Y. H., & Cho, K. (2011). Peer reviewers learn from giving comments. *Instructional Science*, 39(5), 629–643.
- van Dijk, E., De Cremer, D., & Handgraaf, M. J. J. (2004). Social value orientation and the strategic use of fairness in ultimatum bargaining. *Journal of Experimental Social Psychology*, 40(6), 697–707.
- Engers, M., & Gans, J. S. (1998). Why referees are not paid (enough). *The American Economic Review*, 88(5), 1341–1349.
- Florian, R. (2012). Aggregating post-publication peer reviews and ratings. *Frontiers in Computational Neuroscience*, 6, 31.
- Frey, B. S., & Jegen, R. (2001). Motivation crowding theory. *Journal of Economic Survey*, 15(5), 589–611.
- Ginther, D. K., Schaffer, W. T., Schnell, J., Masimore, B., Liu, F., Haak, L. L., et al. (2011). Race, ethnicity, and NIH research awards. *Science*, 333(6045), 1015–1019.
- Gneezy, U., & Rustichini, A. (2000). Pay enough or don't pay at all. *The Quarterly Journal of Economics*, 115(3), 791–810.
- Godlee, F., Gale, C. R., & Martyn, C. N. (1998). Effect on the quality of peer review of blinding reviewers and asking them to sign their reports: a randomized controlled trial. *Journal of the American Medical Association*, 280, 237–240.
- Goldmann, K. (2005). Appropriateness and consequences: the logic of neo-institutionalism. Governance: an international journal of policy. *Administration, and Institutions*, 18(1), 35–52.
- Hamermesh, D. S. (1994). Facts and myths about refereeing. *The Journal of Economic Perspectives*, 8(1), 153–163.
- Handgraaf, M. J., van Dijk, E., Vermunt, R. C., Wilke, H. A., & De Dreu, C. K. (2008). Less power or powerless: egocentric empathy gaps and the irony of having little versus no power in social decision making. *Journal of Personality and Social Psychology*, 95(5), 1136–1149. <http://www.publishingresearch.net/documents/PRCSummary4Warefinal.pdf>.
- Jefferson, T., Rudin, M., Brodney Folse, S., & Davidoff, F. (2007). Editorial peer review for improving the quality of reports of biomedical studies. *Cochrane Database of Systematic Reviews*, (Issue 2). Art. No.: MR000016.
- Kaatz, A., Gutierrez, B., & Carnes, M. (2014). Threats to objectivity in peer review: the case of gender. *Trends in Pharmacological Sciences*, 35(8), 371–373.
- Kachelmeier, S. J. (2004). Reviewing the review process. *Journal of American Taxation Association*, 26(Supplement), 143–154.
- Ketchen, D. J. (2008). Volunteer and shirking behaviors among the Daca. *Academy of Management Journal*, 51(2), 217–220.
- Kramer, R. M., & Brewer, M. B. (1984). Effects of group identity on resource use in a simulated commons dilemma. *Journal of Personality and Social Psychology*, 46(5), 1044–1057.
- Kriegeskorte, N., & Deca, D. (Eds.). (2012). *Beyond open access: Visions for open evaluation of scientific papers by post-publication peer review*. Frontiers in Computational Neuroscience http://www.frontiersin.org/Computational%20Neuroscience/researchtopics/Beyond_open_access_visions_for/137.
- Lazear, E. P. (1996). *Performance pay and productivity*, NBER working papers 5672. National Bureau of Economic Research, Inc.
- Lepper, M. R., & Greene, D. (Eds.). (1978). *The hidden cost of reward: New perspectives on psychology of human motivation*. Hillsdale, NY: Erlbaum.
- Lipworth, W. L., Kerridge, I. H., Carter, S. M., & Little, M. (2011). Journal peer review in context: a qualitative study of the social and subjective dimensions of manuscript review in biomedical publishing. *Social Science & Medicine*, 72, 1056–1063.
- March, J. G. (1994). *A primer on decision making. How decisions happen*. New York: Free Press.
- Merriam, S. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.
- Mulligan, A. (2005). Is peer review in crisis? *Oral Oncology*, 41(2), 135–141.
- Murnighan, J. K., Kim, J. W., & Metzger, A. R. (1993). The volunteer dilemma. *Administrative Science Quarterly*, 38(4), 515–538.
- Mutz, R., Bornmann, L., & Daniel, H.-D. (2012). Does gender matter in Grant peer review? an empirical investigation using the example of the Austrian science fund. *Zeitschrift für Psychologie*, 220(2), 121–129.
- Northcraft, G. B., & Tenbrunsel, A. E. (2011). Effective matrices, decision frames, and cooperation in volunteer dilemmas: a theoretical perspective on academic peer review. *Organization Science*, 22(5), 1277–1285.
- Patton, M. (1990). *Qualitative evaluation and research methods* (pp. 169–186). Beverly Hills, CA: Sage.
- Pillutla, M. M., & Murnighan, J. K. (1996). Unfairness, anger, and spite: emotional rejections of ultimatum offers. *Organizational Behaviour and Human Decision Processes*, 68(3), 208–224.
- Priem, J., & Hemminger, B. H. (2012). Decoupling the scholarly journal. *Frontiers in Computational Neuroscience*, 6, 19.
- Rennie, D. (2003). Editorial peer review: its development and rationale. In F. Godlee, & T. Jefferson (Eds.), *Peer review in health sciences* (2nd ed., pp. 1–13). London: BMJ Books.
- Rothwell, P. M., & Martyn, C. N. (2000). Reproducibility of peer review in clinical neuroscience: is agreement between reviewers any greater than would be expected by chance alone? *Brain*, 123, 1964–1969.
- Ryan, G. W., & Bernard, H. R. (2000). Data management and analysis methods. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 769–802). Thousand Oaks, CA: Sage.
- Saldana, J. (2009). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.
- Sandström, U., & Hällsten, M. (2008). Persistent nepotism in peer-review. *Scientometrics*, 74(2), 175–189.
- Schroter, S., Groves, T., & Højgaard, L. (2010). Surveys of current status in biomedical science grant review: funding organisations' and grant reviewers' perspectives. *BMC Medicine*, 8(62).
- Shatz, D. (2004). *Peer review: A critical inquiry*. Rowland & Littlefield.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative Research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.
- Tajfel, H. (1981). *Human groups and social categories*. Cambridge: Cambridge University Press.
- Tenbrunsel, A. E., & Messick, D. M. (1999). Sanctioning systems, cooperation and decision construals. *Administrative Science Quarterly*, 44, 684–707.
- Tenbrunsel, A. E., & Northcraft, G. (2010). In the eye of the beholder: payoff structures and decision frames in social dilemmas. In R. M. Kramer, A. E. Tenbrunsel, & M. H. Bazerman (Eds.), *Social decision Making: Social dilemmas, social values, and ethical judgments* (pp. 95–115). New York: Psychology Press.
- Thompson, G. D., Aradhyula, S. V., Frisvold, G., & Tronstad, R. (2010). Does paying referees expedite reviews?: results of a natural Experiment. *Southern Economic Journal*, 76(3), 678–692.
- Tite, L., & Schroter, S. (2007). Why do peer reviewers decline to review? A survey. *Journal Epidemiology Community Health*, 61(1), 9–12.
- Treviño, L. K. (2008). Why review? Because reviewing is a professional obligation. *The Academy of Management Review*, 33(1), 8–10.
- Wade-Benzoni, K. A., Tenbrunsel, A. E., & Bazerman, M. H. (1996). Egocentric interpretations of fairness in environmental asymmetric social dilemmas: explaining harvesting behavior and the role of communication. *Organizational Behaviour and Human Decision Processes*, 67(2), 111–126.
- Ware, M. (2008). *Peer review: Benefits, perceptions and alternatives* (Vol. 4). Great Britain: Publishing Research Consortium Summary Papers.
- Ware, M., & Monkman, M. (2008). *Peer review in scholarly journals: Perspective of the scholarly community – An international study*. Publishing Research Consortium <http://publishingresearchconsortium.com/index.php/112-prc-projects/research-reports/peer-review-in-scholarly-journals-research-report/142-peer-review-in-scholarly-journals-perspective-of-the-scholarly-community-an-international-study>.
- Wennerås, C., & Wold, A. (1997). Nepotism and sexism in peer-review. *Nature*, 387, 341–343.
- Sense about Science. (2010). *Peer review survey 2009*. Full Report, London, UK.