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# Findings of the Survey on Prevention of Plagiarism in Lithuanian Research Journals

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## Abstract

At the end of 2011, the Association of Lithuanian Serials initiated a survey, which aimed to ascertain whether Lithuanian journal editors, reviewers and authors encountered plagiarism, self-plagiarism and how they understood originality of a paper. Additionally, the survey looked at methods used for plagiarism prevention by editors and reviewers as well as ways, in which editors managed issues related to plagiarism. The survey suggests that no unanimous decision exists regarding the originality of a manuscript and that editors expect reviewers to identify plagiarism with little use of technologies. While answering to survey questions, respondents provided numerous comments. This demonstrates that plagiarism is a burning issue and scientific misconduct policy is needed in Lithuania. The survey was conducted during the period when the Lithuanian Research Council initiated the procedure for establishing the Ombudsman position. The Lithuanian Research Council funded several projects in 2012 and 2013, the aim of which was to familiarise the Lithuanian academic community with plagiarism prevention technologies and ethical aspects in academic publishing. The projects administrated by the Association of Lithuanian Serials provide research journal publishers and researchers related to journal publishing with a possibility of using CrossCheck system and discussing editorial policies.

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*Keywords:* publication ethics; plagiarism; journal publishing; paper originality; self-pagiarism; CrossCheck; editorial policy.

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## 1. Introduction

It might seem that publication of research journals is mostly related to dissemination of research results. However, research journal editors and publishers name a number of ethical issues that arise during the stages of publishing (Marušić *et al.*, 2011; Claxton, 2005 a, b; Bosch 2011). One of the mostly cited articles was written by

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Dale J. Benos *et al.* (Benos *et al.*, 2005), which offers specific figures and situations that have occurred in all publication stages of *The American Journal of Physiology*, *The Journal of Applied Physiology* and *The Journal of Neurophysiology* from 1996 to 2004. The article maintains that an average number of times when an ethics-related issue had to be resolved amounted to 30 times per year. The authors underlined that despite of the fact that this number comprised a relatively small percentage of all manuscripts submitted, even one incident should be regarded as an event. The investigated facts were grouped according to different features: 24% of all ethics-related cases were *Redundant Publications* (some redundant publications were attributed to cases of self-plagiarism); cases related to *Animal Welfare Concerns* – 16% and *Human Welfare Concerns* – 8%; 15% were cases of *Duplicate Publication*, which could be classified as self-plagiarism; 14% of all cases were *Authorship* issues; 8% – data falsification and only 7% of cases were named as pure (direct) plagiarism (Benos *et al.*, 2005). Hence, the summary suggests that 46% of all cases, which were addressed by editorial boards in relation to publication ethics, could be attributed to one or another kind of plagiarism. Plagiarism and self-plagiarism are among those most actively discussed (Šupak-Smolčić & Bilić-Zulle, 2013; Shirazi *et al.*, 2010; Bretag & Mahmud, 2009).

Having detected the case of plagiarism, editors and publishers take necessary actions to retract the published article. ‘The first article retracted for plagiarism was published in 1979 and the first for duplicate publication in 1990, showing that articles are now retracted for reasons not cited in the past’ is stated in the article written by Steen *et al.* (2013). The article by Grieneisen & Zhang (2012) analyses A Comprehensive Survey of Retracted Articles from the Scholarly Literature. The issue of a retracted article is wide discussed in the article by Fang *et al.* (2012).

During long experience in investigation of research journal publishing, it has been noticed that some plagiarized articles get lost with no signs of prior existence; so, it is impossible to calculate the number of articles that were retracted from the journals around the world especially circulated by emerging publishers.

Changing patterns in the geography of science pose ethical challenges for collaborations between established and emerging scientific powers. During the past two decades, the policies and dynamics of international collaborative research projects have profoundly changed, particularly in response to a greater awareness of research misconduct, notably fraud and falsification (Vasconcelos *et al.*, 2012).

To avoid ethical problems, most research journals state their editorial and publishing standards and misconduct policies. In their article, Bosch *et al.* (2012) present a cross-sectional study, which was carried out on misconduct policies of 399 high-impact biomedical journals in 27 biomedical categories of the Journal Citation Reports in December 2011.

Regional journals have been investigated in terms of their visibility and editorial policies (Utrobičić, 2012). The authors state that ‘journals from the Eastern Mediterranean are visible and have an impact on global scientific community. Coordinated efforts of all stakeholders in journal publishing – including researchers, journal editors and owners, policy makers and citation databases – are needed to further promote local journals as windows to the research in the developing world and the doors for valuable regional research to the global scientific community.’

According to the sources presented below, local and regional scientific journals comprise a substantial part of journals issued around the globe. In her article published by *The Library Journal*, US author Carol Tenopir (Tenopir, 2004) has calculated 50,000 scholarly journals published around the world. Scandinavian authors Bo-Christer Björk, Annikki Roos and Mari Lauri (Björk *et al.*, 2009) have found approx. 24,000 research journals in 2006. The article published in 2011 by *The Wall Street Journal* states that approx. 32,000 scholarly journals are published worldwide (Naik, 2011). JournalSeek suggests the greatest journal number – 99,408; however, only 16% (16,337) of journals listed in the portal are produced by big publishers, each publicising more than 100 journals (JournalSeek data collected in October 2012).

Thus, it is clear that small publishers account for 84% (83,071) of all journals published worldwide. Such journals become important for the global scientific community; consequently, it is important for them to work together in preventing as many situations related to breaches of ethics as possible and declaring their publishing regulations. Ana and Matko Marušić (2012) believe that small journals can provide leadership and discusses the role of editors and journals in detecting and preventing scientific misconduct (Marušić *et al.*, 2007). According to the authors ‘editors face threats from the lack of legal regulation and culture of research integrity in academic communities, lack of support from stakeholders in scientific publishing, and different pressures. Journal editors

cannot be the policing force of the scientific community but they should actively ensure the integrity of the scientific record’.

The results of the survey presented in this paper reflect views of editors of journals issued by small publishers in emerging countries. It should be noted, however, that such journals are gaining significance and can become leaders in the future.

The first time a Lithuanian research journal was mentioned in the context of plagiarism, was the article *Plagiarism scandal grows in Iran* by Declan Butler, published in the famous journal *The Nature* (Butler, 2009). Issued on 9 December 2009, the article supplied information on Iranian ministers who copied somebody else’s publications. It should be underlined that in October 2009, the journal *Transport* published a retraction of the article by the Iranian authors issued in 2006. This was the first time the editorial board of *Transport* was approached regarding a possible case of plagiarism and only the first year since VGTU journals started using the *CrossCheck* system, which indicated the similarity level with previously published and uncited articles amounting to 62%. The decision regarding appropriate actions to be taken in such completely new and sensitive situation related to the authors was found on the website of the Committee on Publication Ethics (COPE) (Flowcharts 2012).

Internet development gave a massive stimulus to plagiarism, which gave rise to numerous systems counteracting the phenomenon. Technologies that can identify a copy have been designed, certified and continue improving; however, the relevance of the problem does not only persist but has also gained a new aspect, namely, the similarity level, which is already identified and analysed but sometimes makes it hard to decide whether a case can be considered as plagiarism (Maurer *et al.*, 2006). In his article, Hermann Maurer mentioned that universities of developing countries also face academic dishonesty and plagiarism issues. However, different languages and the lack of rules means difference in the scope of the problem. According to the author, the concept of plagiarism is less known in universities of developing countries as institutions put insufficient effort in training of students and staff on these issues although acknowledge a rapidly changing situation (Maurer *et al.*, 2006). Different definitions and categories of plagiarism as a phenomenon as well as most frequently used methods and systems for identification of text similarities can be found in other publications as well (Bouville, 2008; Bretag & Carapiet, 2007).

Croatian researchers used plagiarism detection software – eTBLAST, CrossCheck and WCopyfind – to check all manuscripts submitted in 2009–2010. Plagiarism was suspected in manuscripts with more than 10% of the text derived from other sources. These manuscripts were checked against Déjà vu database and manually verified by investigators. In their opinion, ‘plagiarism detection software combined with manual verification may be used to detect plagiarized manuscripts and prevent their publication’ Baždarić *et al.* (2012).

## 2. Survey analysis

### 2.1. Methodology and Topic Coverage

To ascertain the relevance of the problem in Lithuania and the attitude of journal publishers as well as authors, the Association of Lithuanian Serials initiated a survey entitled *Prevention of plagiarism in publication of Lithuanian research journals*. The questionnaire of the survey contained general questions aimed at all respondents and some additional questions aimed at specific groups (journal editors, reviewers and authors). Journal editors and publishers were asked about the area of science, to which their journal is attributed; time spent in their present post; tools used to check manuscripts for possible plagiarism and measures taken if a plagiarism case is identified.

The invitation to participate in the survey and the link to the electronic form were sent to 350 people related to publishing of research journals in Lithuania. Over the period of two weeks, 161 forms filled in by journal editors, members of the editorial board, reviewers or authors were analysed.

Respondents could mark several options from those suggested. The overview of all responses is provided in Fig. 1a. It shows that the survey involved people who were well informed about the issues under discussion. All responses were evaluated in four respondent groups provided in Fig. 1b. In one group, there were all individuals responsible for publishing of a research journal (those who marked at least one of the options, i.e. editor-in-chief, managing editor, member of the editorial board and publisher of research journals), hereinafter referred to as journal editors (94 respondents). Whereas another groups was composed of those who marked only “Author”, only

“Reviewer” or both, hereinafter referred to as researchers (67 respondents). Such grouping was chosen, as one of the aims of the survey was to ascertain attitudes on certain issues of researchers and those directly responsible for journal publishing. It should be mentioned that 2/3 of respondents attributed to the group of journal editors also indicated being authors and (or) reviewers. The majority of editors-in-chief that participated in the survey (57.7%) have been in their current post for 6–10 years and 60% of managing editors – 1–5 years.

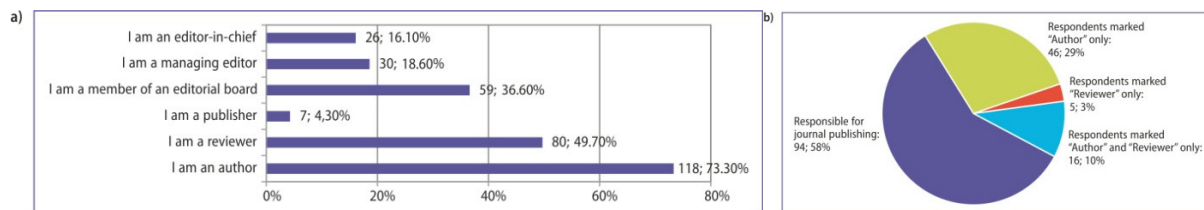


Fig. 1. Relationship between respondents and journal publishing: a) based on the general choice b) according to groups

In order to understand whether journals representing different areas of science have different traditions and attitudes, respondents related to journal publishing (editors) were asked to mark the represented area(s) of science (Fig. 2a). A more detailed analysis of responses revealed that the survey involved almost equal proportions of respondents representing all areas of science (Fig. 2b).

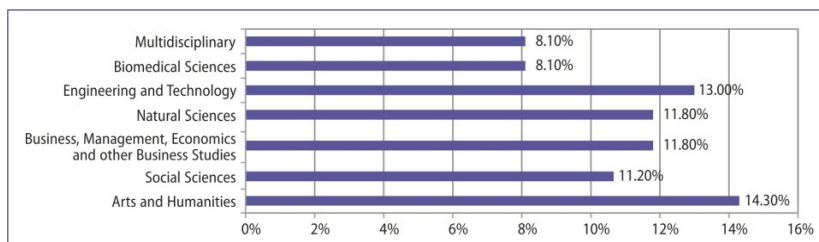


Fig. 2. Areas of science represented by journal editors: a) overall number b) detailed responses

## 2.2. Discussions of the survey

*Originality of a manuscript.* ‘Perhaps because there is no precise definition of scientific originality, studies of peer review in scientific journals have shown that reviews can be arbitrary or ineffective. In this Note, a potential reference point in evaluating originality that may be useful in analysing the problem is presented and tested – a typology of scientific originality based on a structural analysis of the scientific paper.’ (Dirk, 1999). The respondents’ answers to the question “What percentage of new original material should a manuscript contain to be regarded as original?” demonstrate that no unanimous decision exists regarding the originality of the manuscript (Fig. 3). The comment given before the question was asked stated that originality is evaluated eliminating all excerpts in brackets and the reference list of the manuscript. Consequently, a greater number of respondents was expected to choose the option “More than 70% of the original material” as disregard of the reference list or citations in brackets makes it possible to have a hundred per cent originality, which was mentioned in comments by very few respondents. A substantial number of respondents who wrote comments believed that originality of an article could hardly be measured in percentage as it is determined by interpretation of data and novelty of conclusions. Analysis of results reveals that 94 respondents who were directly related to journal publishing (editors, publishers, members of editorial boards) were somewhat stricter on the issue of originality; meanwhile, requirements of researchers for novelty of manuscripts were somewhat lower (Fig. 3b).

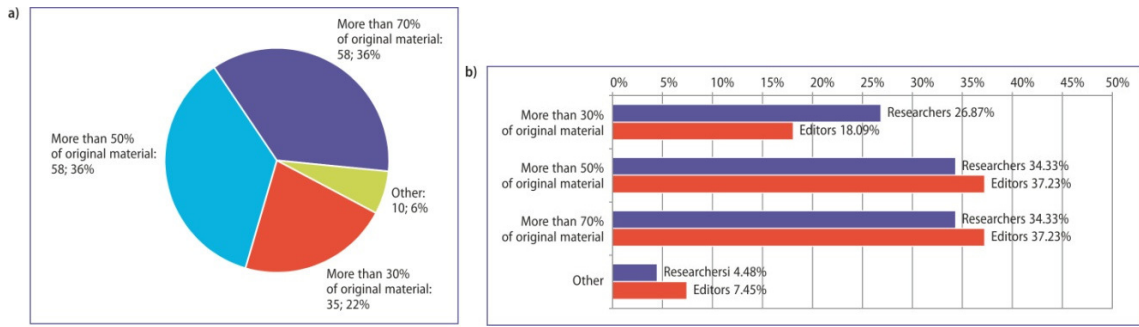


Fig. 3. Distribution of answers to the question on originality of a manuscript: a) all respondents; b) separately, Editors and Researchers

Fig. 4 shows general responses to the question on originality of a manuscript compared to areas of subjects marked by editors. A more detailed analysis of results demonstrated that only those respondents that represented biomedicine or were related to such journals were particularly strict and marked only 50% and 70% as well as indicated 100% under “Other”. Respondents who represent only natural or multidisciplinary sciences usually chose the option “More than 70% of new material”; meanwhile, respondents from humanities and technologies indicated that a manuscript should contain “More than 50% of new material” to be regarded as original.

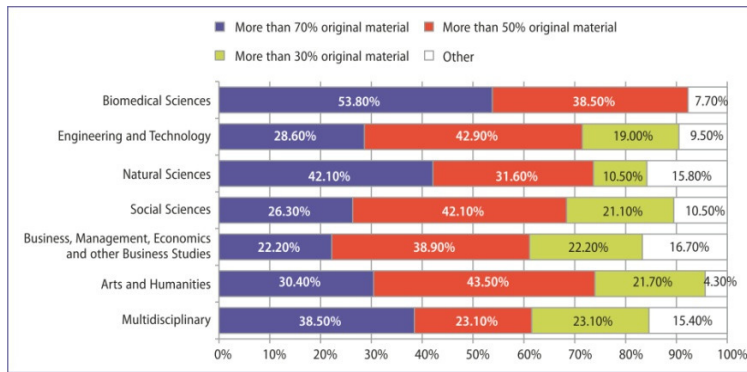


Fig 4. Distribution of responses to the question “What percentage of new original material should a manuscript contain to be regarded as original?” according to areas of science

*In your practice, have you ever encountered plagiarism?* More than three quarters of respondents have encountered plagiarism (Fig. 5a). A more detailed analysis demonstrates that Editors are more aware of this problem than Researchers (Fig. 5b).

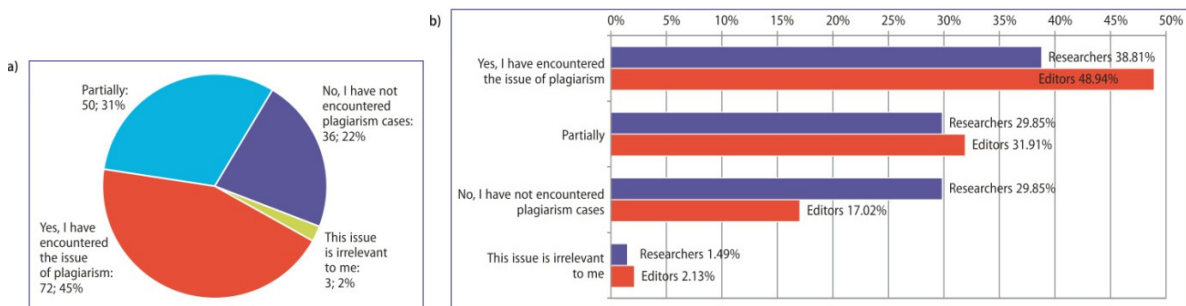


Fig. 5. Distribution of responses to the question on plagiarism: a) all respondents; b) editors and researchers



Are you familiar with the phenomenon of self-plagiarism when an author attempts republishing a previously published text? This issue has been widely discussed in foreign press for a number of years. However, only Fig. 6 demonstrates that both the issue of self-plagiarism and plagiarism are relevant to Lithuanian researchers. Only 10 out of 161 respondents indicated having no encounters with cases of either plagiarism or self-plagiarism. Sorting of answers according to areas of science demonstrates that journals of all areas of science fall into both categories, namely, those that encounter the plagiarism problem and those that never did.

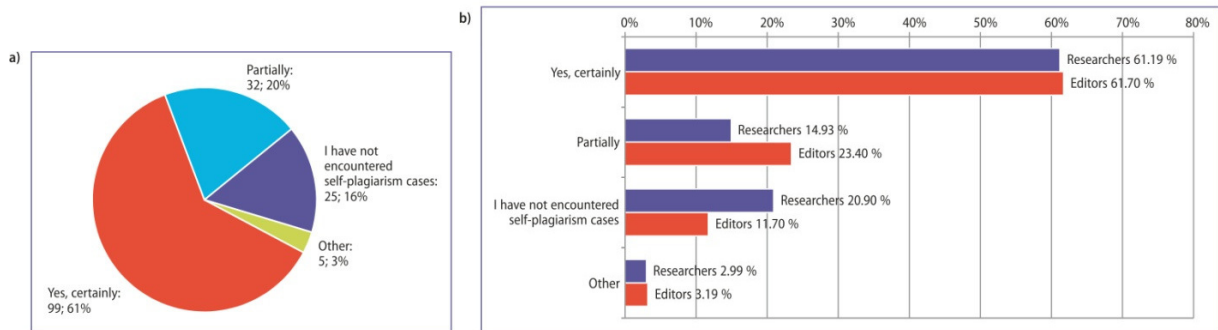


Fig. 6. Distribution of responses to the question on self-plagiarism: a) all respondents; b) editors and researchers

As a problem, is self-plagiarism equal to plagiarism? The formulation of the question as well as answer options were chosen based on the publication regarding the scope of self-plagiarism investigated in Australia (Bretag & Carapiet, 2007). Respondents could mark a number of answers. Fig. 7 shows options chosen by researchers and editors: almost half of all researchers and editors justify a case when an author enlarges a text published under conference proceedings to turn it into an article. It should be underlined that editors recognising self-plagiarism as a problem justify enlargement of material. This question triggered the biggest number of comments – 103.

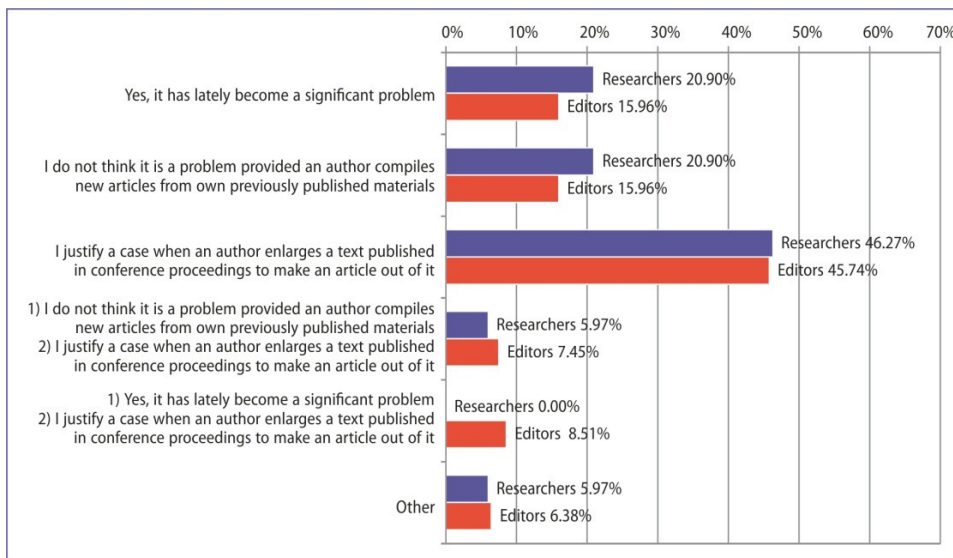


Fig. 7. Answer options chosen by researchers and editors to the question “Is self-plagiarism a problem?”

Should authors be recommended to check their manuscript for plagiarism prior to its submission? Some journals provide authors with a possibility of checking their manuscript for possible plagiarism and determining the percentage of similarities indicated by the plagiarism detection systems. Opinions of the Lithuanian Editors and

Researches are provided in Fig. 8. Meanwhile, Fig. 9 shows answers to the question “What plagiarism systems have you heard about?”

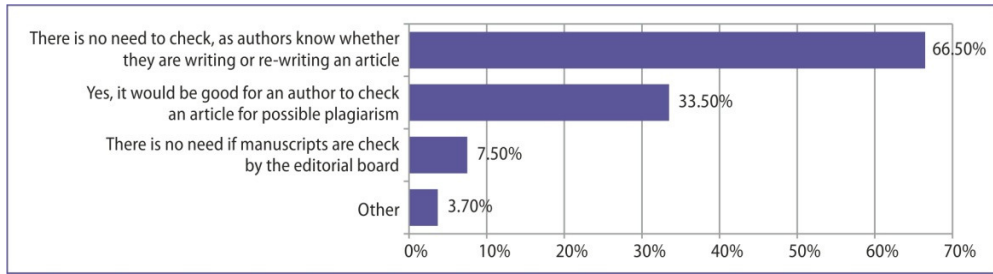


Fig. 8. Should authors be recommended to check their manuscript for plagiarism prior to its submission?

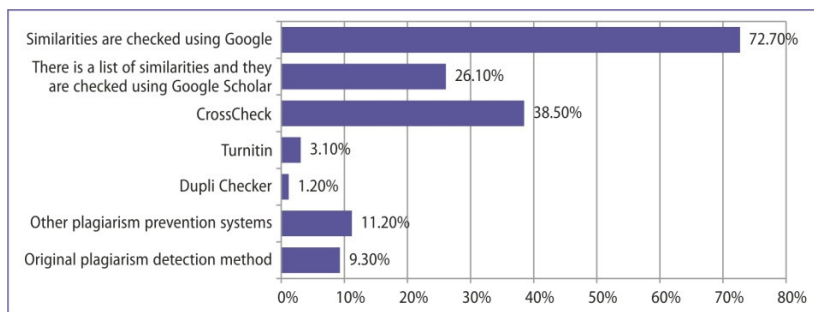


Fig. 9. Answer of all respondents to the question “What plagiarism systems have you heard about?”

*Should Lithuanian journals publicise journal-publishing policy on plagiarism and self-plagiarism as well as sign the ethics declaration?* The majority of respondents believed that research journals should publicise policy or statement on plagiarism and self-plagiarism (Fig. 10) as well as sign the ethics declaration (Fig. 11). Almost every fifth respondent was pessimistic and did not think anything could change. This somewhat demonstrates that current codes of ethics used by Lithuanian institutions are ineffective. Respondents that chose the answer option “Other” also mentioned that “some Lithuanian research journals publicise information for authors on authenticity and originality of articles”. Consequently, they believed that additional declarations were not required. It should be underlined that clearly defined journal editorial and publishing policy is one of quality indicators in publishing. Having asked if the respondents heard of COPE (The Committee on Publication Ethics), 63% of them gave a negative answer.

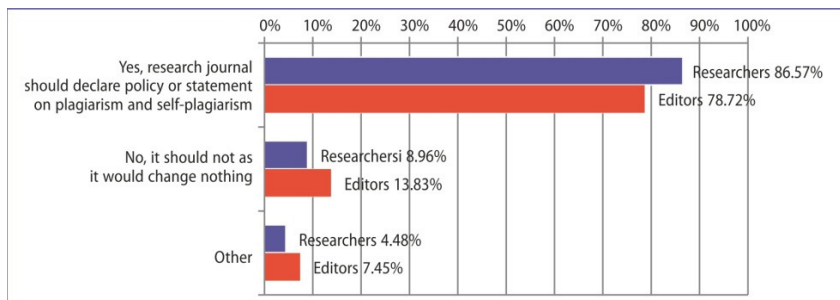


Fig. 10. Should a research journal declare the use of plagiarism prevention systems and its regulations on novelty and originality of published articles?

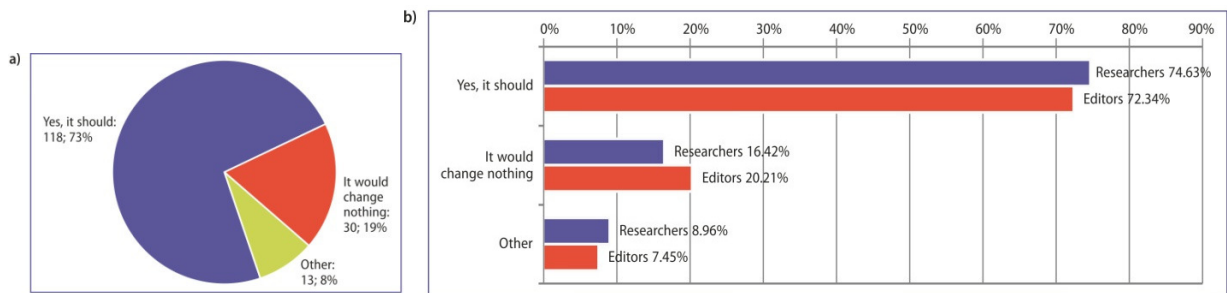


Fig. 11. Should Lithuanian journals sign ethics declaration?

2.3. Additional questions exclusively given to the group of Editors (94 respondents)

Are manuscripts submitted to your journal(s) checked for plagiarism or self-plagiarism? Summary of chosen answer options (Fig. 12) demonstrates that 53% of Lithuanian journal editors chose the answer option “Manuscripts are not checked. Detection of plagiarism is entrusted to reviewers”, this way passing on the responsibility for prevention of plagiarism onto the shoulders of reviewers and confirming that they follow traditional work methods that do not include options offered by contemporary technologies. Distribution of answer options according to areas of science is provided in Fig. 13.

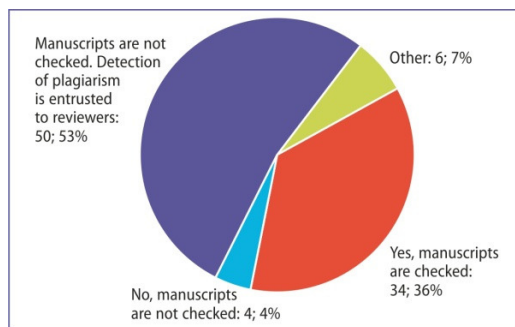


Fig. 12. Are manuscripts submitted to your journal(s) checked for plagiarism or self-plagiarism?

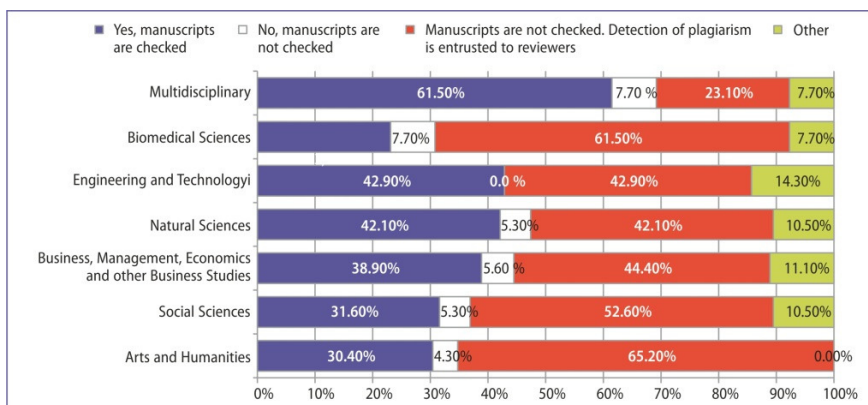


Fig. 13. Distribution of answers to the question “Are manuscripts checked for plagiarism” according to areas of science



34 respondents that chose the answer option “Yes, they are checked” were asked to specify who actually does the checking. Most of them marked two answer options, namely, “Managing editor” and “Reviewers”; and only three respondents marked only one answer option – “Reviewers”.

Data provided in Fig. 14 shows that new technologies are underused in publishing of the Lithuanian research journals. As answers of respondents suggest (Fig. 15), plagiarism is less frequently detected during the primary selection of manuscripts (prior to reviewing) than during the stage of reviewing. As it was mentioned before, editorial boards entrust plagiarism prevention to reviewers; consequently, plagiarism is detected mostly during the review process. In terms of actions to be taken in case possible plagiarism is detected prior to or during reviewing, editors do not look for advice on actions to be taken, as manuscripts are simply refused and authors do not challenge the decision. Most authors do not respond to the letter that indicates reasons for manuscript refusal. Published plagiarism is usually reported to editorial board by authors of original articles. In this case, editors rarely seek advice and take the decision themselves. CrossCheck is believed to be the most reliable system for plagiarism detection; moreover, its effectiveness is proved by Zhang in her article (Zhang, 2010).

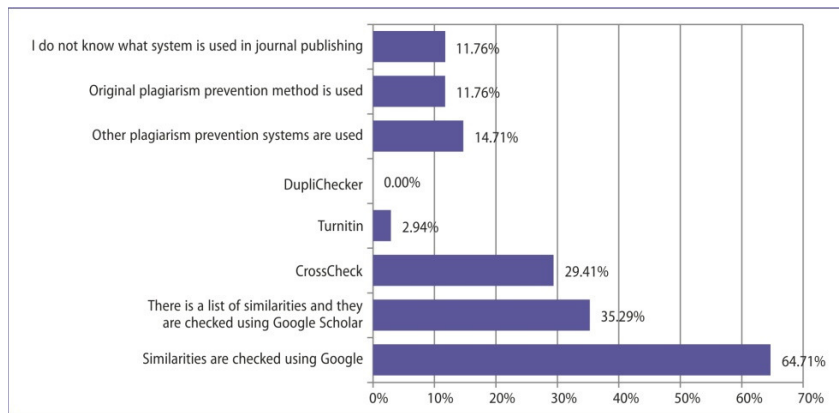


Fig. 14. What plagiarism prevention systems are used in publishing of your journal(s)?

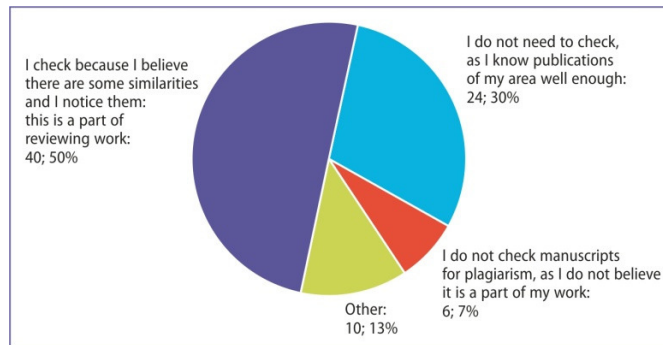


Fig. 15. Have you detected plagiarism during any of the journal publishing stages listed below?

2.4. Additional questions exclusively given to the groups of Authors and Reviewers (94 respondents)

*Additional questions to authors.* 118 respondents that claimed to be authors were asked whether it was important for them to know journal regulations on originality of a manuscript and systems used for plagiarism prevention. The chosen answer options suggest that regulations on article originality are more important than information on the systems used (63%). To the question, “Do you, as an author submitting a manuscript to a journal, find it important to

know journal regulations on originality of the manuscript?" 80% of authors said "Yes". In addition, to the question, "Is it important for you to know whether a journal uses plagiarism prevention systems?" 63% of authors said "Yes".

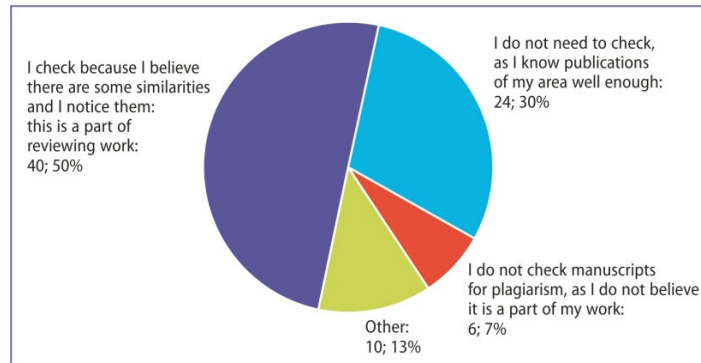


Fig. 16. In your role as a reviewer, do you check manuscripts for plagiarism?

*Additional questions to reviewers.* 80 respondents that indicated being reviewers were additionally asked whether they checked manuscripts for plagiarism while reviewing them (Fig. 16) and what systems they used. Most reviewers use Google, have a list of similarities or search for them with the help of Google Scholar. Analysis of answer options showed that respondents who indicated being reviewers check manuscripts for plagiarism only in case they believe it to be their function; meanwhile, a part of respondents that are directly related to journal publishing believe that this is not their job.

### 3. Conclusions

Selection of answers given only by respondents related to publishing of research journals demonstrates that the survey involved stakeholders that were well familiar with the issues under discussion.

Survey results and comments demonstrate that scientific dishonesty as well as plagiarism and self-plagiarism is a burning issue for the Lithuanian researchers: 76% of respondents have encountered some sort of plagiarism cases.

Opinions of respondents regarding originality of a manuscript (article) were divided equally and the answer options chosen show that no unanimous opinion on novelty of articles exists. Respondents directly related to journal publishing (editors, publishers, members of editorial boards) were somewhat stricter in terms of originality of an article if they had 50% or 70% of new original material. Researchers more frequently chose the answer option stating that a manuscript (article) is regarded as new if it has 30% of new material.

Most respondents stated that journals should declare requirements for originality of articles as well as sign the ethics declaration. However, one third did not believe this would change anything. Lithuania still has no formalised regulations and procedures on actions to be taken by an institution or the academic community in case dishonest behaviour of a researcher is detected.

Comments by respondents savour of disappointment that nothing could be changed and the problem of dishonesty would continue growing. It should be underlined that the Lithuanian research institutions have veracious ethics declarations and codes; however, they lack formalised (approved) procedures that would help to make the codes effective.

The majority of respondents justify the only case of double publication, where an article is published based on conference material previously published in conference proceedings.

Various reasons exist for Lithuanian journal editors to not utilise opportunities provided by plagiarism prevention technologies. They continue placing their faith in competence of reviewers, which was done for the entire century; however, assistance of reviewers is no longer sufficient in this age of computers and the Internet.

Public discussions on survey findings revealed that new technologies on plagiarism detection are welcome and are actively used if they are given access to by third parties, such as publishers, universities, societies, etc. This can be substantiated by the fact that more than a hundred journal editors continue using *CrossCheck* services after the system was introduced through the projects funded by The Lithuanian Research Council.

Based on reviews of the system users, the academic community is still expecting further improvements including detection of translated text and figures.

## Acknowledgements

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