An Editor’s Comment on the Relationship between Impact Factors and the Quality of Publications

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The ISI recently listed the 2014 impact factor for Methods of Information in Medicine to be 2.248, which is a considerable difference to the 1.083 in 2013. This begs the questions to be asked: Did the quality of published papers in the recent years improve when compared with earlier years? And, did editorial policy changes have an influence?

Many parties that participate, contribute or enable research, such as authors, readers, publishers, and decision makers at universities and funding agencies consider the variously existing impact factors (and here in particular the ISI impact factor) as an important measure for the quality of a journal and its overall standing. The reasons why impact factors continue to be one of the critical aspects for a publishing venue are manifold and the research community has debated widely their pros and cons.

The core editorial team of Methods (editor, senior consulting editor, associate editors) is aware of this view. Although the author of this editorial note is, to put it politely, not much in favour of such ‘impact’ measures, we discussed during the last years several times, whether we should change our editorial policy and whether we should focus on publications that may have a higher probability of getting frequently cited within the immediate next two years after publication. E.g. by narrowing our Journal’s scope or by primarily publishing review articles. Our discussions always lead to the following findings:

a. The Journal’s scope is and shall remain broad: the methodology and scientific fundamentals of organizing, representing and analysing data, information and knowledge in biomedicine and health care. Methods was never regarded as a journal limited to the biomedical and health informatics domain. We continue to see the need to provide opportunities to communicate and discuss research within the entire scope mentioned. This comprises manuscripts from medical informatics, medical biometry (resp. biostatistics), epidemiology, and others. Sometimes and with good reasons it is difficult to place the research reported in a manuscript to a single domain – a highly appreciated characteristic of our interdisciplinary research community. We are convinced that progress in science will benefit from maintaining a broad scope. A more detailed discussion on this aspect can be found in [1] and in [2], section 4.

b. The two criteria for deciding whether an article should be considered for publication in Methods include that it is within the Journal’s scope and that it meets the expectations of good scientific quality. The article should have the potential to contribute to the progress of science and eventually to have an impact on health and patient care. We try to achieve this in particular through a fair, constructive, high-quality and, as we hope, efficient review process. We are aware that some accepted manuscripts have a higher chance for getting cited and some have a lower chance. This aspect, however, does not influence our decisions on whether manuscripts can or cannot be accepted for publication in Methods.

It is our hope that our readers as well as our authors will continue to support this editorial policy. Let me mention three activities, being to some extent relevant in this context.

- With our ‘for-discussion-format’ we seem to have identified an additional publication format stimulating scientific debate. In this format manuscripts with expected considerable impact for scientific progress are introduced by an editorial and commented through international peers in a commentary paper. The sometimes quite controversial discussions on these for-discussion-manuscripts may provide further context and contribute to further scientific progress.

- Presenting manuscripts, focussing on a joint research topic in our ‘focus-theme-sections’, usually being introduced to our readers by editorials, also seems to be well accepted.

- Within the last year and after five years of existence of our sister journal Applied Clinical Informatics (ACI), it has been explored, whether publishing these two companion journals successfully provided, as intended, an information bridge from informatics theory to informatics practice and vice versa. Jointly with the editor of ACI, with whom I performed literature analyses on this, I will continue to improve those in our view very important translational activities by trying to identify more appropriate publication formats for this purpose in the future.
Let me come back to the Journal’s ISI impact factor\(^a\). The median ISI impact factors for Methods over the last 15, 10, and 5 years were 1.417, 1.502 and 1.532 and have always experienced considerable yearly variations during these time periods. One reason for the variation is a result of the relatively low number of articles. As Methods publishes fewer than 100 manuscripts each year, the ISI impact factor is more sensitive to variations through highly cited articles and through changes in the number of manuscripts per year, compared to journals with a larger number of publications per year. When analysing the citations of publications in Methods of 2012 and 2013 it became obvious that the 2014 ISI impact factor has not been a consequence of a few papers, published in this period, although articles analysing publications like the ones mentioned on translational activities will usually more and considerably contribute to impact factors than other articles. The citation frequencies of Methods publications in 2012 and 2013 ranged between zero and eight. Ten articles were cited at least five times in 2014. Three articles focused on machine learning, i.e., an interdisciplinary topic. Two articles were devoted to biosignal analysis and one was a for-discussion-article on what biomedical informatics actually is. One manuscript had a focus on public health and web science. Two were devoted to informatics topics in ambient assisted living concerning patients with dementia. The top scorer with eight citations was another for-discussion-article, reporting on the attitude of physicians towards automatic alerting in CPOE systems.

Let me finally answer the two questions, raised at the beginning.

* I do not assume that the quality of articles, published in Methods during the previous years, had differed. Due to the reasons mentioned above impact factors for Methods varied in the past and will continue to vary in the future. The Journal’s impact factors should be considered carefully as it may not represent an adequate measure for scientific quality of publications.

* The Journal’s editorial policy did not change, although we continuously try to reflect on appropriate publication formats and on the quality of review processes.

As editor I am glad that our editorial policy, mentioned in (a) and (b) and supported by the Journal’s core editorial team and by its editorial board, has, as far as we can see, been well received. Although we did not orient our strategy on citation measures like the ISI impact factor, this currently important measure was even positively influenced. We will continue with this editorial policy and will hopefully be able to continue to provide a good publication forum for our readers and authors, as well as to contribute to the progress of science and to high quality, efficient health care.

References


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