

## The Influence of Academic Promotion Systems on the Bibliography of the Scientific Articles Published in Romanian Medical Journals

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**Abstract:** In December 2016 the Hirsch index was proposed as a promotion index in the academic field. This uses as a way to assess a formula that includes the number of the articles published in the ISI Thomson Reuters indexed journals, and where an essential criterion is the number of quotations made by other authors reported to the works of the assessed author. The current study aims at analyzing, in a less exhaustive manner, the degree at which the introduction of the Hirsch index score as an academic promoting criterion has changed the attitude of the researchers towards the bibliographic references they cite in the scientific papers they publish in the ISI indexed journals.

**Keywords:** Hirsch index; academic promotions; academic integrity

### 1. Introduction

The Hirsch index was proposed in 2005 by the physicist Hirsch as a way of evaluation of academic research and, implicitly, of the authors and the institutions they are part of<sup>3</sup>. Many universities worldwide have accepted this index as a useful promotion criterion, or, at least, as an almost objective one. On 20th December 2016, the Ministry of National Education ruled that this index should be decisive for promoting to the level of university teacher: associate professor and professor

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<sup>3</sup> <http://www.biblio.uasm.md/files/Indicele%20Hirsch.pdf>.

in various fields<sup>1</sup>. Within the university action “Medicina”, included at Annex 20 to the Order of the Ministry of National Education, that decided this index should be essential for promotion within the university environment, it was specified that in order to be promoted to the degree of associate professor, the candidate needs to have published 6 articles as a lead author and 3 articles as co-author in ISI indexed journals, and a Hirsch index of 4. The position of professor requires 10 articles as a lead author and 5 articles as co-author in ISI indexed journals, and a Hirsch index of 6. The way to calculate the Hirsch index score depends not only on the number of articles published in ISI Thomphson-Reuters indexed journals, but also on the number of citations triggered by the articles mentioned. The larger the number of citations, the higher the Hirsch index score is, but it cannot be higher than the total number of articles published in ISI indexed magazines.

## 2. Problem Statement

Together with the changing in the academic promotion criteria, there has occurred a tendency to build up "cooperatives" aimed at being "Hirsch index score factories"; thus, the participants forcedly cite their colleagues in the Romanian university field, expecting those to reciprocate, and therefore to raise the index of those who initiated the "quadrille". This situation does not contravene the rules of publishing or awarding academic score, and neither does it infringe the good practice models mentioned in the specialty literature (Hostiuc & Curca, 2012) and it cannot trigger whistleblowing. (Hostiuc & Curca, 2012)

## 3. Material and Method

There have been chosen, in a randomized manner, 4 issues of the Romanian Journal of Legal Medicine (RJML), 2 issues before the modification in 2016 of the criteria of academic promotion, namely vol. XXIV, no 1, March 2016 and vol. XXII no 2, June 2014 on the one hand, as being considered representative for the epoch preceding the change in the criteria of academic promotion, and 2 issues published after their modification, namely, vol. XXVI nr. 1, March , 2018 and vol. XXVI, no. 2, June 2018. A first intention analysis took into account the total

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<sup>1</sup> <http://www.uaic.ro/wp-content/uploads/2013/08/1-ORDIN-nr.6129-din-2016-aprobare-standarde-minime-pentru-conferirea-titlurilor-didactice.pdf>.

number of articles in the two lots each consisting of two issues, cumulated, the number of articles written by the Romanian authors, and the number of citations gathered in the bibliography. Later on, there has been evaluated the number of citations made by the Romanian authors before the academic assessment criteria modification as compared to the number of citations of Romanian authors in the period after the modification of these criteria.

#### **4. Analysis of Results**

The publications in the two issues of the 'Romanian Journal of Legal Medicine' appearing before the Hirsch index scoring totalize 27 articles, gathering 580 citations. The 14 articles written by the Romanian authors were quoted by Romanian authors 15 times.

The publications in the two issues of 'The Romanian Journal of Legal Medicine' appeared after the Hirsch index scoring totalized 40 articles. with a total of 884 quotations. There were 21 articles written by Romanian authors, and the number of citations by the Romanian authors was 81.

Therefore:

As far as the number of articles published in the 2 issues before December 2016 and the 2 that appeared after December 2016, there has been an obvious 48.15% increase, which also shows the rising interest of the authors in publishing in this journal.

As regards the number of bibliographic references used:

Articles published in the pre-Hirsch period gathered an average of 21.84 citations/article.

The articles in the Hirsch period have had an average of 22.1 citations/article.

It is obvious a slight increase in the number of bibliographical references, which is insignificant from a statistical point of view.

Regarding the number of Romanian authors who have become interested in publishing their works in the RJML, from a statistical point of view, in the pre-Hirsch period 51.85% of the published articles had Romanian authors, and in the Hirsch period 52.5% of the articles have been written by Romanian authors.

It is noticeable a slight increase in the percent of the Romanian authors interested in publishing in the magazine, but it is also of no significance from a statistical point of view. Also, it may be the magazine policy to keep a balance between the numbers of Romanian and foreign researchers published.

Regarding the Romanian bibliographical references, the following situation can be outlined: in the pre-Hirsch period, the average was 0.55 references to Romanian authors per article. In the Hirsch period, the average has risen to 2.025 per article, therefore an increase by 3.68 times of the percent of Romanian authors cited.

### **5. Limitations of the Study**

It is highly possible that "cross - referencing" or "on tick" may have also taken place at an international level, in which situation data analysis would involve a number of factors that either get out of hand, or require an extended analysis that is beyond the capacities of our study. The increase in the average number of Romanian authors cited per article may be explained as being due to the sudden growth in the value of the articles published by these. Anyway, it is has been remarked that, while before 2016 the researchers chose to cite more solid studies - usually belonging to internationally renowned authorities- in order to increase the value of their own works, later on they have begun to cite more Romanian authors.

### **6. Conclusions**

The modification of the promotion criteria in the area of medical university education triggered an increase in the number of articles published by the Romanian researchers in the journals ISI Thompson Reuters indexed.

Introducing the Hirsch index scoring led to a spectacular growth in the number of Romanian authors cited by other Romanian authors in the ISI journals. This practice is not considered in medical literature as forbidden, or deserving whist blowing, but it may have a negative influence on the quality of the above mentioned papers

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