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Title : Hyperauthorship: A comparative study of genetics and high-energy physics research

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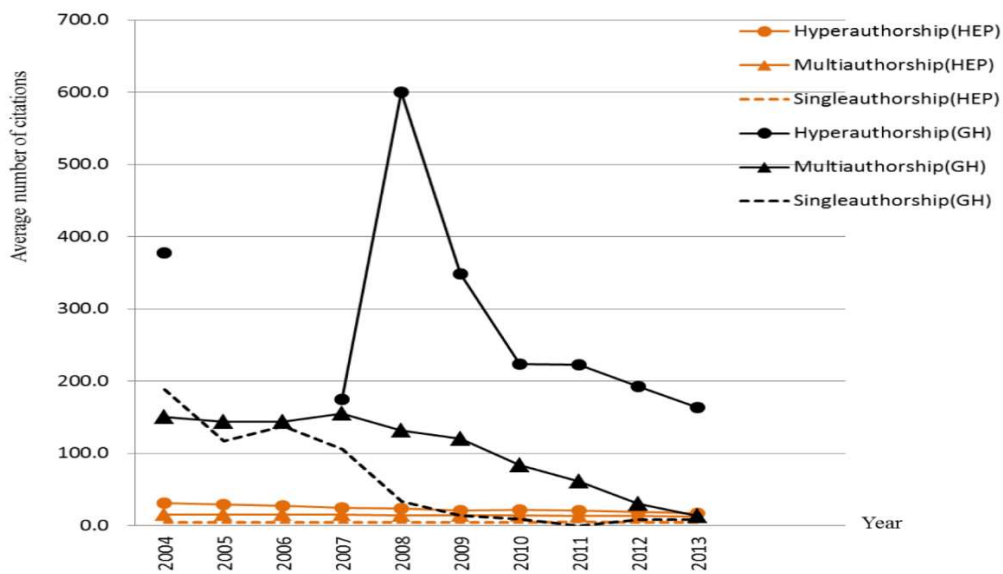
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Hyperauthorship is the phenomenon in which a large number of authors contribute to a single article; it has existed for a substantial period and is not a new phenomenon. The number of hyperauthored articles has increased in certain disciplines; yet, little research has been conducted on hyperauthorship. Although the increasing trend in the number of hyperauthored articles has been observed, empirical studies related to hyperauthorship have been limited, focusing only on the numbers of hyperauthored articles and hyperauthorship disputes. The characteristics of hyperauthored articles have not been investigated. Because genetics and high-energy physics are fields that exhibit hyperauthorship, this study focused on the differences and trends in the characteristics and influence of hyperauthored articles in these fields, for which articles published between 2004 and 2013 were used. Articles were divided into three groups according to the number of authors: single-authored articles, multiauthored articles by 2–99 authors, and hyperauthored articles by at least 100 authors.

The findings show that the percentage of hyperauthored articles in high-energy physics was higher than that of those in genetics. The annual proportions of hyperauthored articles related to high-energy physics ranged between 5.5 percent and 12.8 percent, and those of hyperauthored articles related to genetics were between 0 percent and 5.2 percent. Although a larger proportion of hyperauthored articles was revealed in high-energy physics compared with genetics (8.9% vs. 2.3%), the hyperauthorship rates were marginal in both. The low percentage of hyperauthored articles shows that hyperauthorship is still an atypical type of research collaborations. Although a low percentage of hyperauthored articles in the two fields of high-energy physics and genetics was identified, increasing trends were observed.

The average numbers of authors, institutions, and countries per hyperauthored article in high-energy physics were higher than those in genetics. Furthermore, increasing trends were identified in the annual average numbers of authors and institutions per hyperauthored article in both fields.

The average numbers of citations received by hyperauthored articles were significantly greater than those of other coauthored articles in both fields. A higher percentage of hyperauthored articles in high-energy physics received more than 100 citations than did multiauthored articles (2.6% vs. 0.9%). A similar phenomenon did not occur in genetics. A higher percentage of multiauthored articles received at least 101 citations than did hyperauthored articles (41.6% vs. 33.7%). This indicates that the number of authors was not a primary factor affecting the number of citations of articles.



Average number of citations received by articles by author number

In addition to the possible continuing increase in the number of hyperauthored articles, whether hyperauthorship extends to other disciplines, what factors elevate the growth of hyperauthored articles, and the researchers' perceptions of hyperauthorship are further research focuses.