PRODUCTIVITY OF AUTHORS AS REFLECTED BY DURATION OF THEIR SCIENTIFIC PARTICIPATION AND SPEED OF PUBLICATION

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The paper analyses the frequency distribution of scientific productivity of authors active for same length of time in theoretical population genetics speciality. The focus of analysis is on two aspects: their actual duration of participation in total research output and the speed at which they are able to produce their research publications.

Introduction

In the earlier author productivity studies, one normally comes across either a complete sample of authors or a sample of selected authors pertaining to a particular period from a bibliography or a database. But there are difficulties or problems with regard to these samples. Firstly, we normally don’t analyse the speciality for its complete development, because of the non-availability of complete data on its complete activities. Secondly, the sample of authors considered consists of two non-homogeneous categories of authors: (1) Authors for whom complete activities are reflected (these are authors who have entered the speciality at the initial or middle phase of its development); (2) Authors for whom incomplete activities are reflected (these are authors who have entered the speciality at a latter or last phase of its development). We can therefore, say that the participation of authors in a scientific speciality through the analysis of the bibliography or database is normally never equal. As a result, we will study and focus in the present paper on the homogeneous group of authors with equal duration of participation in a speciality. The paper also analyses frequency distribution of duration of participation of all authors in the speciality and the speed of publication by authors, which is considered to be a better indicator of their
scientific productivity. This indicator throws light on the scientific capacities of individual authors in a speciality. These two aspects were recently studied by Wagner-Döbler in the speciality of Mathematical Logic.¹

**Database**

For the analysis of author productivity, we have drawn sample data from theoretical population genetics speciality. A comprehensive database on this speciality is published in the form of a bibliography entitled *Bibliography of Theoretical Population Genetics*, and is compiled by Felsensteen,² covering major literature published on this speciality from 1870 to 1980.

**Frequency distribution of scientific productivity under the presupposition of equal duration of participation**

In this section we have compared the authors with equal duration of participation, the period from the first year until the last year of publication of each author, was computed. The duration of participation was considered here as the difference between the first and the last year of publication plus one year of each author. Figures 1 and 2 show the distribution of productivity of four homogeneous groups consisting of authors with a total of one year, three years, five years and seven years of participation. In these figures, the x-axis shows the number of contributions and the y-axis shows number of authors in percentage.

Those authors are considered here which have produced 2 or more number of papers. The number of authors with one, three, five, and seven years of participation in the sample bibliography are 116, 149, 100 and 47. The first curve in Figure 1 relating to the percentage of authors with one year of participation indicates that distribution obtained from the observed data seems to be quite skewed normally observed in Lotka’s distribution. Compared to this, in the second curve relating to the percentage of authors with three years of participation, skewness in the observed distribution is found to have been reduced. As we go further to analyse observed distribution of the participation of authors for 5 and 7 years participation (as reflected in Figure 2), the skewness in the distribution falls further. So one can generalise that as the duration of participation increases, the skewness in the observed distribution slowly decreases initially and then does not follow any specific pattern.