

Discussion on the geometric measures of the size of the scientific elites

NIKOLAY VITANOV

Bulgarian Academy of Sciences, Bulgaria , vitanov@imbm.bas.bg

KALOYAN VITANOV *Institute of mechanics, Bulgarian Academy of Sciences, Bulgaria*

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We discuss quantities connected to the productivity of the scientists in scientific organisations. We apply these quantities for a study of the scientific production in a part of the Bulgarian scientific system: the Bulgarian Academy of Sciences (BAS) that is the largest concentration of scientific activity in Bulgaria. We shall concentrate our study at the performance of the scientists and mathematics and physics institutes of the BAS for the period after 1996.

The reason for this is that after 1996 almost all international publications of the Bulgarian scientists are accounted for at the large scientific databases (such as Web of Knowledge or SCOPUS). On the basis of the Lorenz curve for publications ownership we introduce two geometric measures for the size and productivity of scientific elites and superelites at the two kinds of institutes. The sizes of the elites as well as their scientific production do not vary much from institute to institute and between the two areas of research.

The elites at the mathematics and the physics institutes consist of about $1/3$ of the scientists and these elites own about $2/3$ of the scientific publications of the corresponding institute. The superelites consists of about $1/7$ of the scientists and they own about $2/5$ of the scientific production.

In addition about $2/3$ of the scientists do not belong to the scientific elites and all these scientists own about $1/3$ of the scientific production of the corresponding institute. $6/7$ of the scientists do not belong to the superelite and these scientists own about $3/5$ of the scientific production of the corresponding institute.

The aging of the members of the elites is a large problem that has to be quickly addressed.