

## COST/BENEFIT RELATION OF SCIENTIFIC PUBLICATION

The cost of publishing the results of scientific research, understood as that which corresponds to its appearance in a periodical publication or a monographic work that allow for the diffusion and eventual utilization of the generated knowledge, represents a minimal fraction of the aggregate cost of producing such knowledge; of the cost of making science. This last cost is measurable in different manners and commonly corresponds to the budgets that conform the concept of investment of the countries in science, technology and innovation.

The cost of operation of the scientific research establishments, generally institutions of higher education or research centers in specific fields of knowledge, are indeed very high. Without consideration of the cost of training the researchers that make up their staff, which covers all of the formative process that they went through, nor the cost of already existent physical plant built through the years, said budgets include the direct and indirect costs of administrative and scientific personnel; the acquisition and maintenance of equipment, which in the experimental sciences can be very costly, as well as laboratory supplies, operational expenses and, the maintenance of the already existing physical plant.

At the end of a long list of items it is necessary to add the cost of publishing in appropriate diffusion media the papers generated. In many cases the amount is so small that it is included within wider categories. In the case of subventions and research funds, publications correspond to a last and small expense item that, with few exceptions, represents a tiny percentage of the costs.

On the other hand, it is pertinent to review the benefits that, in the world of science and in the academic world in general, are derived from publishing. At an individual level, those who publish (or register patents) have the benefit of intellectual and professional recognition, and also of their working status, in this world where the principle of “publish

or perish” prevails. Some institutions give bonuses in cash to their members for publishing in recognized journals and in some countries of our region award systems have been put in place for the researchers, based on their publications. Such systems constitute a source of complements to salaries that often are very low, and can become a very significant part of the personal income of the members of the teachers and researchers staff.

At the institutional level the benefits are immense. It can be said that, in general, the scientific research centers and the universities owe their prestige and ranking to the number and quality of the publications of their members. The same is true in the case of the funds and grants they receive. Other factors, such as the number of teachers and the acceptance (in the work market) of their graduates, are of a minuscule weight, compared to the publications. In countries where the universities are certified or receive official accreditation of their courses, activities or departments, publications are again the most important elements for their achievement. From such certifications depend, in turn, the budgets or funding they obtain, the capacity to recruit quality teachers and students, as well as the fees and tuitions that they require, when this is the case, from those who aspire to pursue studies.

The costs involved in the scientific research activities are indeed very high, and the benefits that can be obtained from science itself and from technology can be discussed. The cost of the publications and the benefits that persons and institutions obtain from them make them the item with the best cost/benefit relation in the activity and in the life of the science and technology sector.

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