BOUNDARIES BETWEEN THEORY AND PRACTICE IN ASSESSING THE SCIENTIFIC RESEARCH IMPACT

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Abstract: *This approach would identify and transmit at the level of university, the boundaries between theory and practice in impact assessment of scientific research projects. That study proposes to analyze the actual level of impact assessment and give a personal interpretation of Ben LEVINE Analysis Model of the Research Impact theory in the mining's of military and civilian research programs.*

1. INTRODUCTION

In one way or another, assessment of the impact is, in its basic form, a process of identifying future outcomes of a current or future action, respectively, the relation cause-effect found in Physics-Mechanics [2].

Nevertheless, assessment of impact represents an essential practical aspect for the normal functioning of systems, in general, whereas, in particular, it represents the self-regulating action of the feed-back type in modeling systems while considering quality and durability of the output.

2. DEFINITION

When assessing impact in an academic manner and while studying the two related terms, "assessment" and "impact", we reach common grounds with regard to the general aspect that may be expressed by the two terms individually. "Impact", within the definition, suggests and implies a cause-effect relation in the future, as well as some capacity of forecasting changes in the future status, with or without an intended action. Still, since changes in status cannot be predicted accurately, assessment of impact implies the identification and management of risks, uncertainties and vulnerabilities to which a self-regulating system is subjected [3].

In broad terms the definition of "impact" is ample and it contains a diversity of potential future actions under the appearance probability of some effects upon a system or general phenomenon or the appearance of some effects upon a narrow array of environment conditions (Fig.1).

NET IMPACT OF ACTION	=	TOTAL OF CHANGES	-	CHANGES EXCLUSIVELY DUE TO ENVIRONMENT

FIG. 1.

The "assessment" side of the definition may be very general and it can be limited only by the identification of future outcomes or it can include a series of specific activities, it being precise enough in analysis.

Assessment of the impact is a key element of national development policies for most of the European Union countries. One of the reasons of such concerns, at national level and at the European Union's level, is represented by the responsibility of all European Union member states to assure transparency and equity in assessment processes and financial resources allocation at the European Union's level.

In a general context, without particularizing various aspects, the impact assessment process involves the interested parties and the affected ones that take part in and influence, to various degrees, the run of the process and its results.

Due to the fact that the impact assessment is a key element of the national development policies, we identify the political side as holding a passive role in the impact assessment at the national level, within the national policies, and a proactive role influencing the social and political context in decision making.

In this context, the scientific research impact assessment plays a major role, a proactive and final one within the assessment process of the new educational and research policies, at national level and at the level of the European Union.

In order to complete the education-research correlation, a top education system requires a high level of scientific research, based on quality, quantity and easily transferable know-how at the social level.

Taking all the above mentioned into account, the scientific research assessment is a determining element of the scientific research and development policies at national level and at the level of the European Union, as well as an essential practice for the well functioning of the research and development system.

The assessment of the scientific research impact has, in its general acceptance offered by specialists, two main functions:

- the orienting or managerial function;
- the results validation or performance improvement function. Usually, this function is unidirectional and focused on validating results or on improving performance. Some other times, we can meet combinations of the two functions in one single financing instrument.

At the level of military university scientific research, the analysis of impact represents the managerial instrument for quantitative and qualitative analysis of scientific research results or for in-depth research for the development or making of new products and strategies.

3. APROACH FOR MILITARY CDI

The nature of research, development and innovation in the military higher-education scientific research is given by the niche-segment of this type of organization. Similarly, the use of high-end technologies and the development of new techniques in research, development and innovation, in accordance with the new defense approach policies within the NATO and the EU, place the military higher-education scientific research at the top of the research, development and innovation instruments.

Within the Romanian Armed Forces, this is achievable by means of two parallel ways, both at the level of Higher-Education Institutions and Research, Development and Innovation Institutes belonging to the MoND, and at the practical/applicative level, offered by the Directorate for Technology and Procurement Programs.

The collaboration between the Directorate for Technology and Procurement Programs, as the major programs director, the categories of forces, as beneficiaries of the need for research and the military academies belonging to the categories of forces, as supporters of the scientific research, is beneficial and answers the external stimuli on the military technology market as well as the needs for re-technologization of the Ministry of National Defense. Together with producing research, research implementation within the assimilation process of new technologies represents another context of the research impact.

Many organizations, among which the military organizations as well, have a limited ability of presenting the results of any research that is efficient, given its orientation toward internal goals well established through governmental policies and international ones. The organizational opacity of the "military" type is given by the reduced interface with the consumption society (a niche characteristic) or by the national security policies.

The impact of a Research-Development Paper is only quantifiable at the moment when its ideas and solutions offered through prototypes testing are applied into practice, at testing and product-homologation centers belonging to the MoND or when its final solutions are integrated into product usage manuals by the categories of forces or at the strategic level.

The development of impact analysis models is beneficial especially for the military research system, which is based on closed matrices and algorithms of the input or output types at the level of know-how transfer.

4. BEN LEVINE ANALYSE MODEL

An impact analysis model has been produced by Ben LEVINE[3]. This model is based on the analysis of four main elements of a status model, as follows:

-research production status (academic and university-applicative);

-research implementation status (regional policies and stages for project implementation);

-social context status (prejudices and preoccupations);

-mediators (media and professional nets of the cluster type).

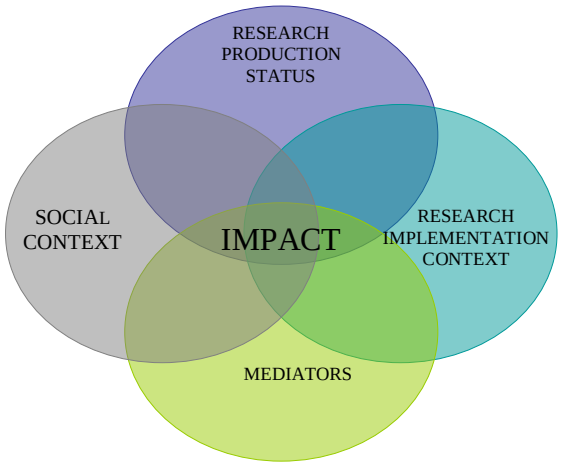

FIG. 2. Ben LEVINE Analysis Model of the Research Impact

This research impact analysis model, proposed by Levine may lead to the increase and improvement of scientific production through a greater attention given to impact, on behalf of researchers and practitioners as well.

There are several directions to be followed, according to Levine, such as:

-grants distribution through impact assessment will be achieved after researchers are demanded to make precise specifications with regard to their research dissemination;

-possible strategies and models for assuring the impact;

-strengthening the potential beneficiaries' input through the development and re-thinking of research proposals;

-use of existing research and its use as a starting point for new studies by exploiting data and research outcomes more technically;

-intellectual networking between researchers sharing common goals.

The use of Levine Model within the Ministry of National Defense is a desiderate to be achieved for the improvement of research quality through maximum exploitment of intellectual and material resources and for the creation of a background for obtaining remarkable and scalable result, both in the laboratory research and within the academic research.

The new strategic projections in the area of defense, at the European Union and NATO levels will be applied into practice using the existing intellectual resource, combined with the need for research, for finding alternative solutions and for disseminating them at the level of the categories of forces.

The relationship with the economic dimension of the new strategic projections will be achieved much more easily through an analysis of the impact and sustainability of the grant, in the actual geopolitical and economic context.

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