Investigations Regarding the Opinions of Researchers from the Scientific Research System of Romanian Academy upon the Results Periodically Reported

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Abstract: The present paper aims to introduce several considerations regarding the shape, content and importance of the results obtained from the scientific research activity in the Romanian Academy as they are appreciated by the specialized personnel within the system. The study commences from the observations which adhere to the uniformity of the introduction manner of the research results across the entire national system of research-development from the international regulatory laws and the observations related to the different structure of results monitored and reported by the Romanian Academy. A proper management of the results obtained from the scientific research activity contributes, among others, to the assessment of the activities run by researches on personal level and further more to those run on institutional and national level. The results are elements of support for the analysis mode in which the system operates and they provide the basis of the next financing distribution. Thus, we regard as significant the special stress put on adjusting the manner of results presentation to the internationally agreed manner, in pusuit of visibility, competitiveness, comparability and increasing impact of the final outcomes upon the economic and social environment.

Keywords: Romanian Academy, scientific research, management, scientific results.

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1. Introduction

The main theme that concerns most management structures of any institution is ensuring financing. Funding the activity of scientific research as investment for *capital formation* [12] often turns problematic due to the constraints recorded by financiers, regardless if they manage public or private funds. The type of research — fundamental, applicative or experimental development, areas of interest, innovation and the importance of results, the foreseen impact, namely achieved, establishing some strategical targets, efficiency and performance are the leading factors which can influence the distribution of financial resources. The central support of all this is constituted by the *results*.

Irrespective of the fact that they are used for planning, reporting or various analyses, the outcomes are the central element targeted by managers or evaluators. They make use of criteria, methods or specific techniques of data processing. Whether the results are being considered as must set targets, or they are being identified as system breaches, they must be correct, complete and comparable for internal and external decision-makers.

If properly processed, the recorded results in conjunction with the indicators targeted and resource inputs allow defining certain hierarchies necessary in the decision-making process of financing distribution. The monitoring process is run based on certain procedures, rules and by reporting forms aggregated from the system of national accounts to the European ones [15 — R.U.E 549/2013].

By comparison with other capital endowments, the investment in scientific research is less predictable in matters such as results and further, their impact. Recent studies have shown the existence of a low correlation between the application assessment for a grant and the potential success of the results of that particular research, especially in the case of public financing. [5].

Naturally, there are particular cases, such as the Romanian Academy which, as institution of public scientific research, has its own system of activity planning, monitoring and reporting of the results as well.

The specificity of the Romanian Academy viewed in terms of scientific research type — essentially, a fundamental one of organizational type — operating in 8 locations at national level, the multitude of research fields, allow it to run interdisciplinary projects on large scale. The qualification and competences of the research personnel are extra bonuses that ensure a particular status of the Romanian Academy on the market of entities with a similar profile found in Romania.

The present study runs a quantitative analysis of the results obtained from the scientific research without attempting their qualitative analysis. Under the circumstances, we aim to investigate the perceptions of the personnel certified as researchers (within system of the Romanian Academy) about the types of results monitored and reported, their importance in assessing the institutional performance and also, the necessity of the economic and social environment for results coming from the scientific activity.

The current paper is part of the results obtained from a survey done between October 2016 – March 2017 on the internal management of the Romanian Academy.

2. The results of the scientific research activity

Lately, more and more stress has been put on competitiveness, performance and efficiency in any developed activity. Their appreciation is founded on the analysis of results. Both targets and indicators to be met as well as the output results at the completion of the working process are analyzed. Thus, we note that results can be analyzed from two temporal perspectives: those which are established by developmental policies, plans or strategies and which are targets to be met, and those registered after the activity, project or set deadlines have come to completion and can be reported. The latter allows establishing the performance and lays the foundation of the future distribution resources in agreement with the competences already proved but, also for the objective pursued by the financier.

For instance, to define an integrated model of cost-performance assessment (1995) [6] Geisler classified the results of scientific research activity in four categories as it follows: (1) immediate results, (2) intermediary results, (3) penultimate results and (4) final results. These are distinctively attached to the following four stages of the research-development process stated as it follows: the process of research in itself; transformation and dissemination of immediate results; usage within the economic and social sub-systems and the final effect registered in society and economy.

To run the result analysis we shall commence from recognizing the system where *the knowledge production* is the activity capable of leading to new discoveries, bring its contribution to scientific progress and which influences *the knowledge consumption* regarded as the ability to assimilate and adjust new inventions [7]. We notice that the results of research activity are an important element in all phases of the management process. We also

appreciate that results can be regarded as *raw material* in the assessment of the generator system.

Data gathering and processing in reference with the results of the research activity is based on predefined methods and tools. In order to uniformize the data reporting and ensure the comparability at an international level, procedures from Frascati Manual are usually employed [12]. This provides a general classification of the areas of interest and a distribution on secondary levels and also offers support for data gathering and processing. These are used by the National Institute of Statistics in Romania.

If considered from a different perspective, we appreciate that the results derived from scientific research activity can be classified as it follows:

- ✓ **Immediate results**, obtained as a result of completing a research project or some intermediary work stages. They often come as documentation, studies, plans, schemes, and suchlike; patents for inventions, certificates of registration for industrial drawings and models, and suchlike; technologies, procedures, IT products, recipes, formulas, methods, and suchlike; physical items and products made during a certain contract; collections and data bases containing analogical and digital recordings, historical sources, samples, specimens, photographs, observation files, rocks, fossils, and suchlike [11, art. 74]. They are numerically expressed and are fixed quantities.
- ✓ **Effect results**, usually registered after the completion of the research project, aim the impact of the immediate results upon the primary or secondary beneficiaries. In the case of fundamental research, the effect results reflect the knowledge degree of the quality of the immediate results. They cannot be anticipated and come under the novelty and innovation aspect. Here we include the latter category, namely the results which allow the assessment of quality acknowledgment, such as: *quotations* or *prizes* for the activity of fundamental research or *the sale, turnover increase or raise of life quality* for the applicative results of the scientific research.

We notice that the absence of immediate effects leads to the lack of effect results and, particularly in the case of scientific research, it is quite difficult to establish as main purpose the achievement of an a priori acknowledgment announced.

Compiling inventories and monitoring *the immediate results* are done throughout the process of implementing the research projects and at their completion as well. To register *the effect results* the following actions are to be taken into consideration: *dissemination activities* or *research marketing activities* on

medium and long term period of times or even extra investments are to be considered.

The prime reason of the result analysis is given by the necessity of providing correct, plausible and comparable data for the processing analyses to ensure the information support for the decision-makers.

In the paper published in 2006 by the project team *The elaboration of the national Strategy in the CDI domain for 2007-2013 based on elements of strategical planning*, the authors specify the existence of significant differences registered (up to 80%) between the data extracted from 2 reports analysed which concern the same entity and the same time period [1]. This fact determined the authors to assert that *data derived from reports of programme and/ or project managements have a low degree of credibility*.

These features may be considered as shortcomings of the management system of the research-development entities, which aside from the immediate consequences, namely influencing the decision-making process of allocating public finances, also present slippages concerning the assessment done by various international agencies (for example, to be seen the position of Romania in *the innovation zone with modest performances*, considerably under the EU average [13] where it has been for many years now).

In conclusion, we appreciate that a correct management of the results obtained from scientific research activity provide a proper assessment which further attracts a differential competitive financing leading to increase of performance which turns into country's competitiveness (chart no.1).

Chart no.1 The link between the results of scientific research activity and competitiveness

All these are all the more significant when the issue of funding distribution arises, especially public financing. Some studies have analyzed the impact of *financing* (public, private or mixed) upon *the results of research*.

For instance, Payne and Siow (2003) [8] have shown that an increase of public financing has a positive effect upon the number of articles published but not necessarily upon the quality.

3. The Results of the Research Activity from the Romanian Academy

3.1. Motivation and Research Objectives

The scientific research can represent an important fulcrum in raising the competitiveness of a country or region. The cooperation of the main actors trained in specific activities of research-development and innovation of existing approaches at national level and providing a rigorous management could lead to the actual improvement of the current national system designed which has registered modest performances lately. The assembly of the research-development system is primarily managed by a structure of central executive authority. And besides, there is an independent and traditional structure, namely, the Romanian Academy. This is a public entity of fundamental research organized at national level and which runs activities of scientific research in most areas of interest and which has organized its own system of activity planning and result reporting. The Academy is fully financed by the state budget but also has the possibility of supplementing its financial resources from extra-budgetary incomes drawn from national or international competitions or from private financing.

The main problem acknowledged nearly unanimously is the sub financing. Despite all these, it would be necessary to direct the budgetary financing resources (as many as there are) to objectives that ensure the accomplishment of the institutional mission and to scientific fields that allow the increase of competitiveness.

The activity results are a component carefully monitored when it comes to the issue of efficiency assessment and activity performance. These respect partially the standard format from Frascati Manual. A part of the research activity results are unique at national level and, for instance, concern the elaboration of dictionaries, atlases, treatises or highly topical projects for the Romanian culture and science and whose development takes long periods of time and interdisciplinary teams of specialists and which are not seen as priority among the current financing offered by the National Programme of Profile.

Besides the function of consecration, the Romanian Academy has the mission of promoting science and culture in all domains, namely editing of various works of science, literature and arts. The results of scientific research are made public by dissemination in peer publications, scientific papers or communications at specialized events.

The organizational structure of the Academy contains 69 institutes or centers, among which 49 have legal entity. These are grouped in 14 scientific sections which accumulate research fields from 5 institutional programmes [4].

The scientific results registered are the product of the activity run by the specialized personnel. They mostly run their activity in Bucharest but also in other 7 localities from Romania. The distribution of the certified researchers on localities is as it follows: Bucharest (1429.5 positions), Cluj-Napoca (103 positions), Craiova (22 positions), Iași (312.5 positions), Rădăuți (5.5 positions), Sibiu (12.5 positions), Târgu Mureș (10 positions) and Timișoara (79 positions) [10].

Reporting the results of research activity within the Romanian Academy is done after the completion of a calendar year, by presenting at central level the accumulated data collected from all subsidiary structures. These are presented on scientific sections or on programmes.

To exemplify, we shall present table no. 1 where the data from the reporting related to the year 2015 is shown in a synthesis way and grouped on sections, namely, results registered and research personnel involved.

Table no.1 The Scientific Results Reported in 2015 by the Romanian Academy

	Secție	Personal de cercetare	Articole în reviste WoS străinate	Articole în reviste WoS România	Articole în reviste WoS România B+	Cărți publicate în străinătate	Carti publicate în Ed. AR	Cărți publicate în România	Premii în străinătate	Premii ale AR	Citări lucrări anterioare 2015	Participări la conferințe	Rapoarte de interes public	Brevete
1	Secția de Filologie și Literatură	164.00	10	11	206	27	29	34	0	3	1,113	27	44	0
2	Secția de Științe Istorice și Arheologie	251.50	22	39	524	88	24	351	0	7	5,174	113	35	0
3	Secția de Științe Matematice	202.50	236	26	58	4	2	2	0	4	3,151	20	4	0
4	Secția de Științe Fizice	5.00	3	2	0	0	0	0	0	0	197	1	0	0
5	Secția de Științe Chimice	363.00	460	82	41	9	5	6	8	4	7,157	20	10	7
6	Secția de Științe Biologice	144.00	111	16	52	5	1	9	7	4	2,205	167	4	2
7	Secția de Științe Geonomice	73.00	36	3	50	4	4	2	1	1	372	11	4	0
8	Secția de Științe Tehnice	50.00	26	10	32	7	0	4	10	1	784	5	0	2
9	Secția de Științe Agricole și Silvicultură	21.50	9	11	38	0	5	1	1	0	48	24	2	3
10	Secția de Științe Medicale	72.00	54	19	49	2	3	9	9	8	652	18	1	1
11	Secția de Științe Economice, Juridice și Sociologice	431.50	148	48	586	35	13	109	13	5	1,489	1,145	135	2
12	Secția de Filosofie, Teologie, Psihologie și Pedagogie	77.50	31	1	439	3	56	17	1	2	56	36	3	0
13	Secția de Arte, Arhitectură și Audiovizual	53.00	1	7	40	6	1	18	0	0	74	81	11	0
14	Secția de Știință și Tehnologie Informatică	65.50	68	12	20	5	3	4	4	1	453	19	8	0
	TOTAL	1,974.00	1,215	287	2,135	195	146	566	54	40	22,925	1,687	261	17

Data source: processing from 2015 Report from www.acad.ro/rapoarteInterne and [10]

By presenting these introductory data we have attempted to outline the complexity of the system managed and also the multiple opportunities for large-scale projects of research with a major impact upon the external environment.

Securing the financial resources for the development of the institutional activity under normal circumstances represents a theme of the top institutional management. In early 2000s, for instance, it was created a *group of reflection* upon the state of the Romania Academy. Its role was to run a thorough analysis of the entire scientific research system starting from the institution's mission, goals, organization, tradition and means, and going as far as the results obtained. The problem of differentiated financing of the scientific activity on criteria internally set was taken into account by the members of that particular group. They noticed that state-budget financing was neither competitive nor selective and consequently did not stimulate value and performance in research as well as did not promote the major objective of academic research, namely *excellency* [2]. Among the concrete proposal of management-finance and administration nature of the group we can find references to establishing some margins of expenditure for various important projects such as: dictionaries, atlases, treatises or highly topical projects for the Romanian culture and science. At the same time, it was discussed the necessity of promoting a financing system based on performance motivation where the truly competitive institutes could benefit of extra funds from the budget [2].

The competence of the research personnel, acquired experienced, expectations which motivate achieving better results leading to performance increase, all these are *accumulations ensured over time* [9] which represent an important resource of exploit for the institutional growth. Concurrently, the institutional strategical management provides the accordance between the need of results obtained from research activity in the economic and social environment and the themes or directions from the financing strategies.

The update of the study themes along with the elimination of worn-out subjects [3], are concepts which have been put to use by strategical decision-makers from several institutes of the Romanian Academy and which achieved remarkable results.

Under the circumstances, the general objective of the current presentation is represented by data gathering regarding the perceptions of the research personnel within the structure of the Romanian Academy about institutional results and understanding of their key determinants. Hence, the origin of the specific objectives which refer exclusively to the internal features of the Academic research system as it follows:

1. identifying the importance given to each category of result monitored/ reported and the connection with the national and international system of data gathering;
2. establishing the individual appreciations concerning the overall results of the research activity from Academy and alignment to the international policies of reporting;
3. finding the appreciations regarding the unique mission of the Academy at national level related to some research activities, namely: promotion of science, cultivation of the Romanian language and literature, setting the orthographic rules and editing of various works of science, literature and arts.

3.2. Methodology and Research Results

To meet all the other specific objectives the survey on opinions was employed as method of data gathering by applying a questionnaire adjusted to the targeted group, namely certified researchers from research institutes or centers of the Academy. The questionnaire could be self-administrated by respondents. The collected data were processed through quantitative and qualitative analyses and the reporting was done on themes, stages via tables, charts and text of data transposition.

The questionnaire was sent via email to 1.482 researchers from the Academic structure and was available online for 5 months (late 2016 - early 2017). The batch assessed is representative since it is formed of 170 subjects that cover all 14 sections within the structure of Academy from all 8 localities, of either gender, from all categories of certified researcher positions, and management positions as well.

The questions aimed aspects concerning the internal management of research within the structure of the Romanian Academy. To be able to extract exhaustive conclusions, through questionnaire have been collected both *socio-demographic data* (current position, age, gender, seniority in activity) and data regarding the *individual activity* within Academy (institute, section, main area of interest) and also *opinions, perceptions* regarding some aspects about the internal management of the research activity (mission and objectives of the institutions, financing, results, criteria of performance assessment and distribution of funds, positions, strategy, the relation of the Romanian Academy with the external environment).

The data processing and analysis were done in Excel program.

a) The analysis of *the importance related to each result category* reported by the Romanian Academy. The results registered from the

question concerning hierarchy set in accordance with the importance appreciated by respondents to be attributed to the results as presented in the *Reports regarding the research activity and training activities of the researchers within the Romanian Academy* and by evaluating them on a scale from 1 to 10, where 1 is “less important” and 10 is “highly important” is presented in table n. 2.

Table no. 2 The importance degrees attributed by the respondents for the results reported by RA (Romanian Academy)

Category of result	The result importance and number of respondents									
	1	2	3	4	5	6	7	8	9	10
1. Article published in a WoS issue abroad	1	4	1	4	6	3	5	21	29	87
2. Article published in a WoS issue in Romania	4	4	5	6	9	13	21	29	31	39
3. Article published in a B+WoS issue in Romania	10	8	6	9	17	8	26	26	22	28
4. Book published abroad	0	2	1	4	9	7	10	24	27	76
5. Book published at the RA Publishing House	7	3	3	4	14	7	26	29	22	47
6. Book published at a publishing house in Romania	9	6	9	9	18	16	17	29	25	25
7. Participation with a scientific research paper at a international conference	0	4	3	3	8	6	13	31	37	59
8. Participation with a scientific research paper at a national conference	10	3	8	10	19	9	30	28	24	24
9. Report of public interest	15	5	5	11	10	10	21	27	24	27
10. Patent for invention	12	3	4	3	4	5	11	17	26	65

The most deliverable category in the analysis of the institutional performance which was graded 10 by most respondents (87) is *article published in a WoS issue abroad*. There are also results reported and appreciated by respondents as less important and graded 1 as *report of public interest*, *patent*

for invention, participation with a scientific research paper at a national conference, article published in a B+WoS issue in Romania.

For data processing we shall make a hierarchy by transforming from numerical scale to ordinal scale and by accumulating the answers graded from 1 to 3 as “definitely unimportant”, grades from 4 to 7 as of “medium importance” and those from 8 to 10 as “highly important”. Thus, we note the following:

Chart no. 2 Considerations regarding the importance of the Article published in a WoS issue abroad

85.09% of the respondents, represented in chart no. 2, stated that *articles published in a WoS issue abroad* are a highly important criterion in the analysis process of institutional performance. Among these, most respondents (7.7%) activate in the Chemistry field, followed by researchers who work in the economic field (5.2%).

61.49% of the respondents declared that *articles published in a WoS issue from Romania* are a highly important criterion when analyzing the institutional performance. Among these, most of them (9.3%) are between 30 and 45 years old and also come under the category of seniority over 20 years by 13.7%.

47.5% of the respondents stated that *articles published in a B+ WoS issue from Romania* are a highly important criterion in the analysis process of institutional performance, while 37.5% declared that it is of medium importance.

Chart no. 3 Considerations regarding the importance of *The Book published abroad*

79.38% of the respondents declared that a *book published abroad* is a highly important criterion in the analysis process of institutional performance as represented in chart no.3 None of the respondents graded 1 this result, while the descending order of the first 3 research fields that graded it 10 is as it follows: Chemistry, Philology, History.

60.49% of the respondents stated that a *book published in the RA publishing house* is a highly important criterion in the analysis process of institutional performance, while 31.48% of them affirm that this type of deliverable is of medium importance. The highest percentage in terms of seniority in research activity is registered by the *category over 20 years* by 14.2%, as opposed to 3.1% respondents from the *category under 5 years*.

48.47% of the respondents declared that a *book published in a publishing house from Romania* is a highly important criterion in the analysis process of institutional performance, while 14.72% of them admit that this type of deliverable is of minimum importance. Largely, this result is *definitely unimportant* for the following research fields (in descending order of percentages): Mathematics, Chemistry, Sociology.

Chart no. 4 Considerations regarding the importance of *Participation with a scientific research paper at an international conference*

77.44% of the respondents declared that *participation with a scientific research paper at an international conference* is a highly important criterion in the analysis process of institutional performance as represented in chart no. 4. By this score *participation with a scientific research paper at an international conference* ranks third in the researchers' preferences. The most of the maximum grades were attributed by senior scientific researchers (12.8%), with over 20-year seniority (16.5%) and who are from the archaeology section (5.8%).

46.06% of the respondents stated that *participation with a scientific research paper at an national conference* is a highly important criterion in the analysis process of institutional performance, very close to the percentage of those who consider it of medium importance, namely 41.21%.

Chart no. 5 Considerations regarding the importance of the *Report of Public Interest*

50.32% of the respondents declared that elaborating a *report of public interest* is a highly important criterion in the analysis process of institutional performance, while 33.55% of them grade it of medium importance as represented in chart no. 5. Among these distributed on scientific sections, the respondents who graded it between 1 and 3 belong to the Section of Mathematical Sciences (5.8%), followed by the Section of Science and Information Technology (1.3%).

Approximately 72% of the respondents stated that getting a *patent for invention* is a highly important criterion in the analysis process of institutional performance.

The distribution in accordance with the recognition degree in the analysis of the institutional performance on grade categories given by respondents is presented in table no. 3.

Table no.3 Degree of importance attributed to the results expressed as recognition sizes

Category of Indicator	Importance of recognition and number of respondents									
	1	2	3	4	5	6	7	8	9	10
1. Prize obtained abroad	1	2	3	2	8	7	8	23	34	74
2. Prize offered by the Romanian Academy	3	2	4	4	13	8	11	25	29	62
3. Work quotation abroad	0	1	0	3	8	9	8	26	23	86
4. Work quotation in the country	5	5	0	5	14	17	19	31	25	42

An unexpected result was registered on the segment of analysis and hierarchy of the recognition measures for the quality of results, where the prizes received abroad are appreciated as less important than the prizes offered by the Romanian Academy. Thus, we have the following:

80.86% of the respondents declared that *a prize received abroad* is a highly important criterion in the analysis process of institutional performance. Among these, most are senior scientific researchers (17.9%) followed at quite a distance by scientific researchers (9.3%).

72.05% of the respondents declared that *a prize offered by the Romanian Academy* is a highly important criterion in the analysis process of institutional performance. Among these, most of them (16.1%) are between 30 and 45 years old, followed by those between 45 and 60 years old (12.43%).

Approximately 82% of the respondents declared that *quotation of a work abroad* is a highly important criterion in the analysis process of institutional performance. No grade of 1 was registered, but 0.6% of the respondents (section of theatre and artistic performance arts) graded it by 2.

60.12% of the respondents stated that *quotation of a work in the country* is a highly important criterion in the analysis process of institutional performance. They have a roughly even distribution on research fields and the highest percentage is registered by philology by 3.9% followed by archaeology by 2.6%, while 19 fields have lower percentages of 0.6%.

The following values have been taken into account for each type of reported result: dispersion (variation), deviation and difference from the “correct answer” (10 grade for each result). The medium value points out how well is approached the issue in question, while the dispersion indicates the way in which the importance of each result is appreciated by the researchers of the Romanian Academy. Where the difference between the number of medium grades and the correct one is low, the same will happen to the dispersion and deviation. Where the difference is significant, the same will happen to the dispersion and deviation.

We wish to understand why some people do not see as highly important each result monitored and reported by the Romanian Academy. The set of data processed is taken from tables 2 and 3. They provide an overall image of the persons who gave marks from 1 to 10. Calculus operations have been done with these data which helps establishing some standards regarding the distribution particularities of the grades given.

The grades received for the importance of each deliverable were taken into account. The next step was to calculate the medium grade received and the variation to highlight the variation range of the persons ‘number that gave 10.

The calculus elements are as it follows:

$$\text{Medium: } \bar{x} = \frac{1}{n} \sum_i x_i = \frac{751}{14} = 53.64 \text{ persons who gave 10}$$

Individual deviation (d_i) is calculated in table no. 4 after the following

$$d_i = (x_i - \bar{x})$$

formulas:

$$d_{i\%} = \frac{x_i - \bar{x}}{\bar{x}} * 100$$

Table no.4 Calculus Elements

No.table/position	x_i	$x_i - \bar{x}$	$\frac{x_i - \bar{x}}{\bar{x}} * 100$	$ x_i - \bar{x} $	$(x_i - \bar{x})^2$
T2-1	87	33.36	62.19	33.36	1112.89
T2-2	39	-13.64	-25.43	13.64	186.05
T2-3	28	-25.64	-47.80	25.64	657.41
T2-4	76	-5.64	-10.51	5.64	31.81
T2-5	57	23.36	43.55	23.36	545.69
T2-6	25	-28.64	-53.39	28.64	820.25
T2-7	59	7.36	13.72	7.36	54.17
T2-8	24	-29.64	-55.26	29.64	878.53
T2-9	27	-25.64	-47.80	25.64	657.41
T2-10	66	12.36	23.04	12.36	152.77
T3-1	74	21.36	39.82	21.36	456.25
T3-2	63	9.36	17.45	9.36	87.61
T3-3	86	33.36	62.19	33.36	1112.89
T3-4	42	-11.64	-21.70	11.64	135.49
	751	0	-	281	492.09

Indicators of dispersion

- Variation: $\sigma^2 = \frac{\sum_i (x_i - \bar{x})^2}{n} = \frac{492.09}{14} = 35.14$ persons;
- Square medium deviation: $\sigma = \sqrt{\sigma^2} = \sqrt{35.14} = 5.9279$ persoane;
- Medium variation intermission:

$$\bar{x} \pm \sigma = \begin{cases} \bar{x} - \sigma = 53.64 - 5.92 = 47.72 \approx 48 \\ \bar{x} + \sigma = 53.64 + 5.92 = 59.56 \approx 60 \end{cases}$$

This means that the maximum grade is given approximately by a number of persons in the range of 48 to 60.

- The variation coefficient:

$$v = \frac{\sigma}{\bar{x}} * 100 = \frac{5.9279}{53.64} * 100 = 11.05\%$$

The value obtained points out a relatively reduced dispersion which means that the medium number of persons giving maximum grade to the result importance is significant. In the case of these types of results, the respondents should give 10 grade for the importance. Yet, based on the frequency of answers and variation value (dispersion) we can deduct that small grades were given as well. There is a possible problem, namely if certain categories of results received 2 or 3 (see tables 2 and 3), this indicates the presence of some irregularities in the way of perceiving the importance of deliverables. In this event, we wonder why for some of the respondents the mentioned results are less important.

b) ***The respondents' comments*** regarding the grading system of the results reported by Academy in the analysis process of institutional performance are presented in table no. 5.

Table no.5 The main comments of the respondents regarding the hierarchy of the research activity results from RA

Comment	No. of respondents	Percentage of total valid questionnaires
Scientific papers published in international issues provide visibility and appreciation at the highest level	11	6.59%
There are not common assessment standards in the Romanian Academy	11	6.59%
The differentiation between national and international should not be made	8	4.79%
None of the results announced can guarantee the research quality. The quality of result is underlined by the quality of publication or	7	4.19%

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publishing house		
International visibility is a priority for certain research fields	7	4.19%
The research impact is important	4	2.40%
The researchers activating within the Romanian Academy should publish in the highest rated ISI issues	3	1.80%
Taking part to scientific events or publishing the research results is more a matter of finding financing than the researcher's worth in his/ her scientific research activity	3	1.80%
The differentiation between issue/ publishing house from Romania and abroad should not be made	2	1.20%
The prizes offered by the Romanian Academy could become devoid of content because works of questionable quality have been awarded along with reference works	2	1.20%
Other comments (in combined versions): The quotations do not have the same importance: the difference between ISI and non-ISI quotation should be operated; The dissemination of the research results is extremely important; In certain fields (e.g. Mathematics) there are not too many valuable issues in Romania; There is nowhere to be found the impact factor of the issues and no difference made between WoS and non-WoS quotations; The obligatory character of publishing the research results is a major setback; It is necessary to make a correlation between the appreciation of research results and promotion criteria	6	3.59%

6.59% of the respondents declared that scientific papers published in international issues provide the highest visibility and appreciation. Other 6.59% claim there are no common assessment standards within the Romanian Academy.

c). Concerning the researchers' considerations about aligning the Romanian Academy to the international policies of data gathering and

reporting (e.g. Frascati Manual), the related results are presented in table no. 6.

Table nr.6 The repondents' options concerning the aligning of RA to the international policies of data gathering and reporting

Reply	Total respondents	Percentage
No, Romanian Academy is a scientific research entity with a special status on the market of research-development activity in Romania	54	32.33%
Yes, for the standardization of the statistical data processing in the benefit of science, research and decision factors	82	49.10%
Both yes and no	3	1.79%
I am not familiar with Frascati Manual	20	11.97%
No reply	8	4.79%

49.10% of the respondents declared they agree that Romanian Academy should align to the data gathering and reporting used at an international level. Concurrently, 20 respondents, namely 11.97% replied they do not know about Frascati manual, although the questionnaire had inserted the quick access path which could point out a possible lack of interest regarding this aspect.

d) The appreciations of the research personnel regarding the necessity or importance of some unique activities at national level from the Academy mission, namely:

- promoting science and culture in all fields of knowledge;
- cultivating the Romanian language, literature and setting the compulsory orthographic rules;
- editing of various works from the fields of science, literature and arts as presented in table no. 7.

Table no.7 The distribution according to the importance degree and necessity of activities

Activity	Importance and activity necessity									
	1	2	3	4	5	6	7	8	9	10
Promoting science and culture in all domains of knowledge	1	0	0	0	4	2	3	9	13	134
Cultivating the Romanian language,	0	2	2	1	6	2	3	8	14	129

literature and setting the compulsory orthographic rules										
Editing of various works from the fields of science, literature and arts	4	2	2	0	10	1	14	16	24	92

On a scale from 1 to 10, most respondents pointed out that *promoting science and culture in all domains of knowledge* is highly important and quite necessary for the Romanian society as **134 respondents** graded 10 this aspect. The highest percentage (25.9%) goes to the persons who are senior scientific researchers and in top 3 among the scientific sections are the following: Historical Sciences and Archaeology (12.8%), followed by Economic, Juridical and Sociological Sciences (12.2%), section of Philosophy, Theology, Psychology and Pedagogy and, finally, Chemistry Sciences (8.5%).

Also, regarded as highly important and quite necessary in the opinion of **129 respondents** is *cultivating the Romanian language, literature and setting the compulsory orthographic rules*.

The highest percentage of 25.1% was registered among the persons who are senior scientific researchers. Respondents of age ranging between 30 and 45 years old are among those who graded maximum this activity in percentage of 33.5%. The next follow the respondents who had the same grade but their age is between 45 and 60 years old (22.8%). The researchers over 60 years old declared that this activity is highly important and necessary for the Romanian society (18.6%). The youngest of the researchers who took part in this survey and who also graded 10 this activity registers a low percentage of merely 2.4%. The respondents who regard as highly important and necessary the activity of *cultivating the Romanian language, literature and setting the compulsory orthographic rules* are those whose main area of interest is philology (8.8%).

Editing of various works from the fields of science, literature and arts is a highly important and necessary activity was graded 10 by most respondents (18.2%) who, also are senior scientific researchers. The respondents who registered the highest percentage (9.2%) see this activity as of maximum importance and necessity, and they are from the section of Historical Sciences and Archaeology. The respondents who graded 10 *editing of various works from the fields of science, literature and arts* come from the sections of history, respectively, philology and they registered equal percentages of 6.4%.

Conclusions

The results of the survey have pointed out the following preferences of the researchers activating within the Romanian Academy system on the matter of institutional results as it follows:

- ✓ In terms of **result importance** for the analysis of the institutional performance, the most appreciated results are *articles published in a WoS issue abroad* as 85.9% of respondents place it in the “highly important” category, followed by *books published abroad*, and *participation with a scientific paper at an international conference*.

By contrast, the results that received most grades in the category of “definitely unimportant” are the following: *participation with a scientific paper at a national conference* (16.13%), *article published in a B+ WoS issue in Romania* (15.00%), and *book published in a publishing house from Romania* (14.72%).

- ✓ Concerning **the importance of the reported results that reflect the recognition of the activity quality** we can notice that all four categories of reported results scored over 60% in the researchers’ appreciation. First, by 82.32% it is placed *quotation of a work abroad*. The grades from the “definitely unimportant” category are few, namely: 1% for *quotation of a work abroad*, 6% for *prize received abroad* and 10% for *quotation of a work in the country*.

Awarding the activity (individual or collective) is a means of recognizing the quality of results, highly appreciated by the research personnel to end of their career (senior scientific researchers registered 17.9%), *foreign prize* (16,8%), *Romanian Academy prize*, by comparison with early-stage scientific researcher where merely 4.9%, namely 2.5% are those who appreciate these results.

We notice the large number of researchers who give little importance to the *reports of public interest* as nearly 50% graded it between 1 and 6, even if these are reported by almost every scientific section, less Physics and Technical Sciences. These appreciations could have as main cause the researchers’ opinion about the link between the assessment criteria of the individual activity for promotion, where the latter result is not taken under consideration, and the impact of these results upon the economic and social environment.

According to the grading of 14 results reported by the Romanian Academy in its Reports, 64 from 170 researchers also expressed their own opinions about the matter. The word *visibility* conveys chiefly the researchers’ opinions. Besides raising several discontent issues, the comments highlight that dissemination should be done in publications of international visibility and related impact.

Concerning the takeover of presentation typology and data reporting from internationally agreed policies, most researchers consider that the *Romanian Academy should adopt this model*, a necessary step in the standardization of statistical data processing for the benefit of science, research and decision-makers.

Two of three sets of unique activities at national level run by the Romanian academy were appreciated with grades between 8 and 10 by over 90%. Thus, *promoting science and culture in all domains of knowledge* is “a highly important activity” for 93.98% of the respondents, while *cultivating the Romanian language, literature and setting the compulsory orthographic rules* is “a highly important activity” for 90.42% of the respondents.

The 14 types of results reported by the Romanian Academy are mostly identical with the results reported by the other entities of research, except for the Reports of public interest or the Prizes offered by the Romanian Academy which we did not find them reported by other institutions. Under the circumstances, we can fairly appreciate that it is difficult to make a comparison among the studies published on themes concerning the result analysis. On the other hand, by the present study we have aimed the exclusive analysis on the perception experienced by the research personnel from the Romanian Academy in order to provide (to whom it might concern or interest) a strategical decision-make support that can ensure the co-participation of the human resource to the management actions by implementing the coaching management [16].

In conclusion, the results of the study show that researchers within the Romanian Academy system give a considerable amount of knowledge, involvement and special importance to the visible and poignant completeness of the institutional activity results. In the case of decision-makers from the institutional top management, these results are significant in terms of learning the researchers' opinions as a highly important resource within the system which could be engaged in the scientific and planning activity as well to achieve efficient and competitive institutional results. The results of fundamental research activity within the Romanian Academy may become a firm foundation for a multitude of activities related to culture, education, economy and the whole of the Romanian society. Actions of learning the opinions and needs of the external environment regarding the results of one own's activity could complete the image and data support of the decision-makers when strategically planning and prioritizing the projects supported by primary financing.

References

- [1] Agachi, Ș., Curaj, A., Dumitrache, I., Filip, F., Popa, Gh., Stănciulescu, I., Szabolcs, L., *Sistemul Național de Cercetare, Dezvoltare și Inovare în contextul integrării în Aria Europeană a Cercetării*, Academia Română Publishing House, Bucharest, 2006
- [2] Barbu, V., *Cercetarea științifică în Academia Română*, Academica, Revistă de Știință Cultură și Artă, edited by the Academia Română Publishing House, no. 29, August, 2004, year XVI, 166
- [3] Batali, A., *Institutul de Chimie Macromoleculară "Petru Poni" – Modelul excelenței academic împlinite*, în Market Watch, no.192, March, 2017
- [4] *Darea de seamă a Președintelui Academiei Române din 2013*, în Supliment al Revistei Academica, April, 2014
- [5] Fedderke, J. și Goldschmidt, M., "Does massive funding support of researchers work?: Evaluating the impact of the South African research chair funding initiative", *Research Policy* 44 (2), (2015), 467 – 482
- [6] Geisler, E. "An Integrated Cost-performance Model of Research and Development Evaluation", *Omega*, vol.23, No.3, 1995, 281-294
- [7] Hyeonchae Yang, Woo-Sung Jung, *A strategic management approach for Korean public research institutes based on bibliometric investigation*, published online: August, 27, 2014, Springer Science+Business Media Dordrecht 2014
- [8] Payne, A. A. & Siow, A.: Does federal research funding increase university research output?. *Advances in Economic Analysis & Policy* 3, No. 1, 2003
- [9] Simionescu, B. C., *Opinii privind reforma cercetării în Academia Română*, în Academica, Revistă de Știință Cultură și Artă, edited by the Academia Română Publishing House, no. 29, August, 2004, year XVI, 166
- [10] Simionescu, B., *Cercetarea fundamentală în Academia Română*, Academia Română Publishing House, Bucharest, 2016
- [11] Ordonanța Guvernului nr. 57/2002 *privind cercetarea științifică și dezvoltarea tehnologică*, cu modificările și completările ulterioare (Government Ordinance no. 57/2002 regarding the scientific research and technological development, as subsequently amended and supplemented)
- [12] Frascati Manual, 2015, obtained in 13.10.2016, 16.40 (GMT+2) from http://www.keepeek.com/Digital-Asset-Management/oecd/science-and-technology/frascati-manual-2015_9789264239012-en#.V-Vh8hBjTas#page1
- [13] <https://ec.europa.eu/info/sites/info/files/2018-european-semester-country-report-romania-ro.pdf>
- [14] www.acad.ro
- [15] <https://publications.europa.eu/en/publication-detail/-/publication/82ec5291-5f8c-4cf5-99a6-c9937d21da57/language-ro>
- [16] Nicolescu O. (coord.), *Sisteme, metode și tehnici manageriale ale organizației*, Editura Economică, București, 2000