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EXCELLENCE OR MISCONDUCT: HOW THE VISIBILITY OF TEAM LEADERS IMPACTS THE RESEARCH PROJECT COMPETITION IN THE REPUBLIC OF MOLDOVA?

Introduction. *Distributing public funds to the "best" researchers is a key element of the science policy. Evaluation is a fundamental activity for the allocation of competitive funding. The flaws of peer review have led to increased interest in the use of bibliometric indicators for the evaluation of the research project proposals.*

Problem Statement. *The advantajes and advance of bibliometrc is stimulated interest toward the correlation of peer review and applicants' bibliometric indicators. The results of such studies are different and heterogeneous. Such studies are insufficient in Eastern Europe.*

Purpose. *To establish the correlation between peer review and bibliometric indicators of project team leaders within the call for research projects in Moldova, which are financed from public funds for 2020—2023.*

Material and Methods. *Statistical correlation of the results of national competition of R&D proposals (evaluation and funding) and the bibliometrics indicators of project team leaders (publications ant patents); analytical analysis of the contextual factors influencing this correlation.*

Results. *The results of the analysis have shown a positive, albeit weak correlation between the scores assigned by experts and the previous performances of leaders. The most significant relation is between the call results and the Hirsh index in Web of Science and Scopus databases. However, the projects proposed by the most cited researchers in WoS and Scopus or the founders of scientific schools did not receive funding.*

Conclusions. *The analysis of the national R&D competition has proved that previous scientific performance of team leaders influenced the evaluation results and the funding of project proposals. However, these dependencies are not linear and seem to be affected by the conflicts of interest and "old boys" schemes. This fact calls for significant changes of the process: ensuring the transparency, the involvement of foreign experts and the use of bibliometric indicators in evaluation.*

Keywords: peer review, bibliometrics indicators, correlation, research evaluation, and projects selection.

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The allocation of public funds for research is a key element of science policy [1]. National research agencies organize competitions of project proposals, encouraging active participation of researchers, generally aiming to select for funding the "best" proposals and the "best" researchers [2]. To truly fund excellence, it is crucial these proposal competitions are based on a set of rigorous rules, known in advance and unchanged throughout the entire process [3]. Evaluation is a fundamental activity in any scientific system, including in the process of examining research project proposals for the allocation of competitive funding [4—7].

There are two major approaches to research evaluation: peer review, traditional evaluation (perceived as qualitative), and evaluation based on bibliometric indicators (perceived as quantitative). Given the pros and cons of these two evaluation approaches [8], one of the most discussed issues in literature is the ***correlation between peer review and bibliometric indicators***. Most studies consider peer review the classic, standard mechanism that should validate the use of bibliometric indicators for evaluation [9—12].

The analyses of correlations target journal articles (e.g., [13]), national research evaluation exercises (e.g., [5, 14, 15]) or researchers and project proposals, which is more relevant for our study (e.g., [9, 10, 16—18]). The results of these analyzes are different, heterogeneous, even though most of them seem to have found an overall positive correspondence although the identified correlations have been far from perfect and have varied among the studies [10].

Studies have found positive correlations for the evaluation of publications [13, 15, 19]. However, the results of other research suggest the lack of a significant positive correlation between peer assessment of journals in regional science and the impact factors of those journals [20].

Positive correlations pertaining to the evaluation of research institutes have been found by a series of studies [5, 21]. However, there are also situations when previous studies demonstrating positive correlations between bibliometrics and peer review were subsequently challenged, notably the case of the 1992 Research Assessment Exercise ratings for British research [9] or the analysis of the evaluation results of Research Quality in Italy [22].

When discussing individual researchers, grants and project proposals, it seems that the correlation depends on some factors, including the type and purpose of the peer review. A number of studies have demonstrated a strong correlation between bibliometric indicators and several entities, such as 1) the results of fellowship applications [10], 2) peer review of research programs in the Netherlands, both in physics [23] and chemistry [16], 3) the peer review results of the candidates for the postdoctoral programs in Switzerland [24], 4) selection process for two European molecular biology programs — Long-term Fellowship and the Young Investigator programs [10], 5) peer review of library and communication science researchers [12], 6) evaluation of individual researchers [25], 7) reviewers' ratings for Spanish researchers [1], 8) selection of junior and senior researchers [26], 9) the grant allocation of the Netherlands Research Council [2].

In other studies, this correlation was less obvious or missing:

1) *positive*, but relatively weak correlation in 34 research groups at Bergen University in Norway [9], in 4 fields of public health in Australia and negative or no correlation in other 2 fields [27], grant applications to the National Health and Medical Research Council of Australia [28];

2) *insignificant* differences between approved and rejected candidates for grants for young researchers of the German Research Foundation's [29];

3) *negligible* differences between the scientific productivity of the candidates approved and rejected for individual grants in Sweden [30].

Generally, in post-socialist states comparable in size to the Republic of Moldova (RM), the correlation between the values of bibliometric indicators and peer review of project proposals seems to be quite weak. For instance, in Slovakia there was a weak correlation between the results of peer review of project proposals and the subsequent productivity of grants [3]. In Georgia, there was no correlation between the values of *Scopus* bibliometric indicators (number of publications and citations, H-index) of project leaders and the peer review results of project selection by SRNSF [31]. However, this seems to be due to conflicts of interest that are unavoidable in small scientific communities.

Given the mixed results of the studies, most researchers advocating for a smart combination of relevant bibliometric indicators and an objective, transparent peer review process, resulting in an "informed peer review". Meanwhile, it seems that government funding of research in countries with major challenges and restricted amounts of resources cannot be effective, if not based on a relevant and accurate bibliometric analysis [31].

In this paper, we aim to contribute to the study of correlations between peer review and bibliometric indicators, following their analysis in the call for research project proposals in the Republic of Moldova for 2020—2023.

The Moldovan National Agency for Research and Development (NARD) organized the call for project proposals Government Program 2020—2023, in 2019. Over 55 per cent of the national public funding for research for the next four years was allocated through this call.

A total of 249 project proposals were submitted under five strategic priorities: I — Health (60 project proposals); II — Sustainable agriculture, food safety and food security (39); III — Environment and climate change (31); IV — Societal challenges (74); V — Economic competitiveness and innovative technologies (45). Each project proposal was evaluated by three experts, awarding points for each of the four criteria, so that project proposals scored between 0 (zero) and 100 points. The announced evaluation criteria for project proposals included: 1) scholarly research relevance and excellence; 2) potential socio-economic impact of the project correlated with the expected results and profitability; 3) project implementation plan, the requested terms and costs; 4) composition of the research team [32].

Through our analysis we intend to answer the following research questions:

1) Are the values of team leaders' bibliometric indicators relevant and representative for the scientific community in Moldova?

2) Is there a correlation between the score assigned by the experts and the previous performances of the team leaders?

3) Is there a correlation between project funding and the previous scientific performance of team leaders?

4) What are the differences in the correlation of team leaders' bibliometric indicators and the call results, per call priorities?

5) Can the process of project evaluation and selection be considered accurate (i.e. have the best ones been selected), taking into account contextual factors?

We have based our research on the hypothesis that a project proposal evaluation and funding is (also) influenced by the previous scientific performance of the team leader. The importance of a team leader for the success of a project proposal is determined both by the formal evaluation criteria of the project proposal and by a leader's informal role, especially in a post-soviet scientific community. Assessing the level of competence and scientific qualification of the team leader are explicitly described in the 4th evaluation criterion that is composition of the research team. In some of the experts' evaluation forms, the scores assigned for this criterion were supported by team leaders' bibliometric indicators from *Web of Science*, *Scopus* or *Google Scholar*. Moreover, it is known that during an evaluation, in addition to the content of a project proposal, experts often take into account the reputation and previous performance of the team leader. The examined call had limitations to the number of words in some relevant sections of the application forms [32]. When lacking enough information experts are likely to use indirect information about team leaders, such as journals where the manager is published, the patents and other bibliometric indicators, to assign a score.

Data collection. NARD data served as primary sources for the analysis of projects' evaluation and selection results: the scores assigned by experts and the funded projects [33].

The National Bibliometric Instrument(IBN), *Web of Sience* (WoS), *Scopus,* and *Google Scholar* (GS) databases were used to collect the bibliometric indicators. IBN (https://ibn.idsi.md/) is the only information resource that aggregates articles from national scnholarly research journals and conference proceedings (over 115,800 articles on 08.01.2021). The following data were collected for each team leader in ***IBN*** on March 15—16, 2020, for the period 1994—2020: 1) total number of publications (documents); 2) number of articles in journals from RM; 3) number of national patents (applications). The data on patent applications were extracted from the personal patent profile in the database of the State Agency for Intellectual Property, which is interconnected with IBN author page.

From ***Scopus*** the following data were collected for the period 2004—2020 for each team leader: 1) number of documents; 2) number of citations; 3) h-index (on March 16—17, 2020).

From the ***WoS*** the following data were collected for each team leader: 1) number of publications in WoS; 2) total number of citations; 3) h-index (on April 13—16, 2020).

The existence of GS profiles has been manually verified for each team leader and the following data were cumulated: 1) total number of references; 2) number of references since 2015; 3) h-index, total; 4) h-index since 2015; 5) i10-index, total; 6) i10-index since 2015.

Aiming to assess how representative for the scientific community are the team leaders, the bibliometric indicators of the most productive researchers from Moldova have been extracted from IBN and WoS. Regardless of the collection method, all data have been additionally checked manually to exclude errors from databases.

Data processing. All information collected from the databases was entered in Excel worksheets, complemented by the information accessible / provided by NARD (proposal title, registration code / number, affiliation, the score assigned by experts, the decision of funding).

Both Pearson and Spearman correlations (total, by call priorities, for different bibliometric indicators) were calculated in order to establish the relation between the results of proposals' evaluation and the team leaders' bibliometric indicators. Analysis of bibliometric indicators and their correlation with the evaluation results were also determined according to groups of team leaders (eg., by call priorities).

PRESENCE OF TEAM LEADERS IN THE EXAMINED DATABASES

The presence of the team leaders in the examined databases varies significantly (Table 1).

The lowest presence of team leaders is in GS — on average less than one third of managers have profiles. This indicates a low awareness of the need to increase the visibility and impact of research in the scientific community. A somewhat higher presence of team leaders for priorities IV and V is due to the institutional policies of several organizations, which stimulate their employees to create GS profiles.

The share of team leaders is higher in the most important international databases remaining relatively modest, which denotes a limited international recognition of scholarly research carried out in Moldova. The only exception is priority V, while some above-average presence is illustrated by priorities III and I, all of these largely reflecting the best performing national scientific fields. It is worth noting that some of the most visible researchers in Moldova spend a significant amount of time in laboratories abroad. On the opposite side is priority IV, which focuses on social sciences and humanities, which is traditionally less internationalized.

Team leaders turned out to be present among the most productive and visible researchers from RM, both nationally — confirmed by IBN and internationally — WoS (Table 2).

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The majority of team leaders are among the most acknowledged researchers at the national level, judging by their degrees, as more than half are habilitated doctor (the highest scientific degree in RM). Out of the 71 members of the Academy of Sciences of Moldova (data of June 20, 2020), which are traditionally considered the scientific elite of a country, almost 40 per cent have submitted proposals to the call as team leaders. Team leaders are often heads of various research units and influence the habits and behaviors of other employees. At the same time, they are usually among the best researchers according to bibliometric indicators. Therefore, it is valid to assume that investigating bibliometric indicators of team leaders and their correlation with peer review is relevant for the entire national scientific community in RM.

Table 1. **The Share of Team Leaders in Databases and Bibliometric Indicators**

	%	Strategic priority					Total
		I	II	III	IV	V	
IBN	Documents	98.3	100	100	98.6	100	99.2
	Journal articles	98.3	100	100	98.6	97.8	98.8
	Patents	60	56.4	41.9	4.1	44.4	37.8
Scopus	Documents	50	38.5	64.5	25.7	93.3	50.6
	Citations	41.7	25.6	51.6	12.2	88.9	39.4
WoS	Documents	70	56.4	77.4	32.4	93.3	61.8
	Citations	41.7	33.3	45.2	20.3	86.7	42.6
GS	References, total	10	12.8	19.4	45.9	48.9	29.3
	References, since 2015	10	10.3	19.4	44.6	48.9	28.5
	i10-index, total	8.3	5.1	12.9	25.7	44.4	20.1
	i10-index, since 2015	6.7	5.1	12.9	21.6	40	17.7

Table 2. **Presence of Team Leaders Among the Most Productive Researchers from RM**

Most productive researchers (ranking)	Nr. of team leaders among the most productive researchers					
	IBN			WoS		
	by nr. of documents	by nr. of downloads	by nr. of views	by nr. of documents	by nr. of citations	by h-index
1—10	4	3	5	4	3	3
11—50	15	8	14	12	9	9
51—100	16	15	11	9	7	7
101—200	23	18	20	14	16	17
201—300	13	27	15	12	13	11
301—375 (WoS) 301—516 (IBN)	30	30	36	13	16	17

Notes: In IBN were examined researchers with at least 33 publications and in WoS — with at least 10; these researchers were ranked by the number of citations and h-index.

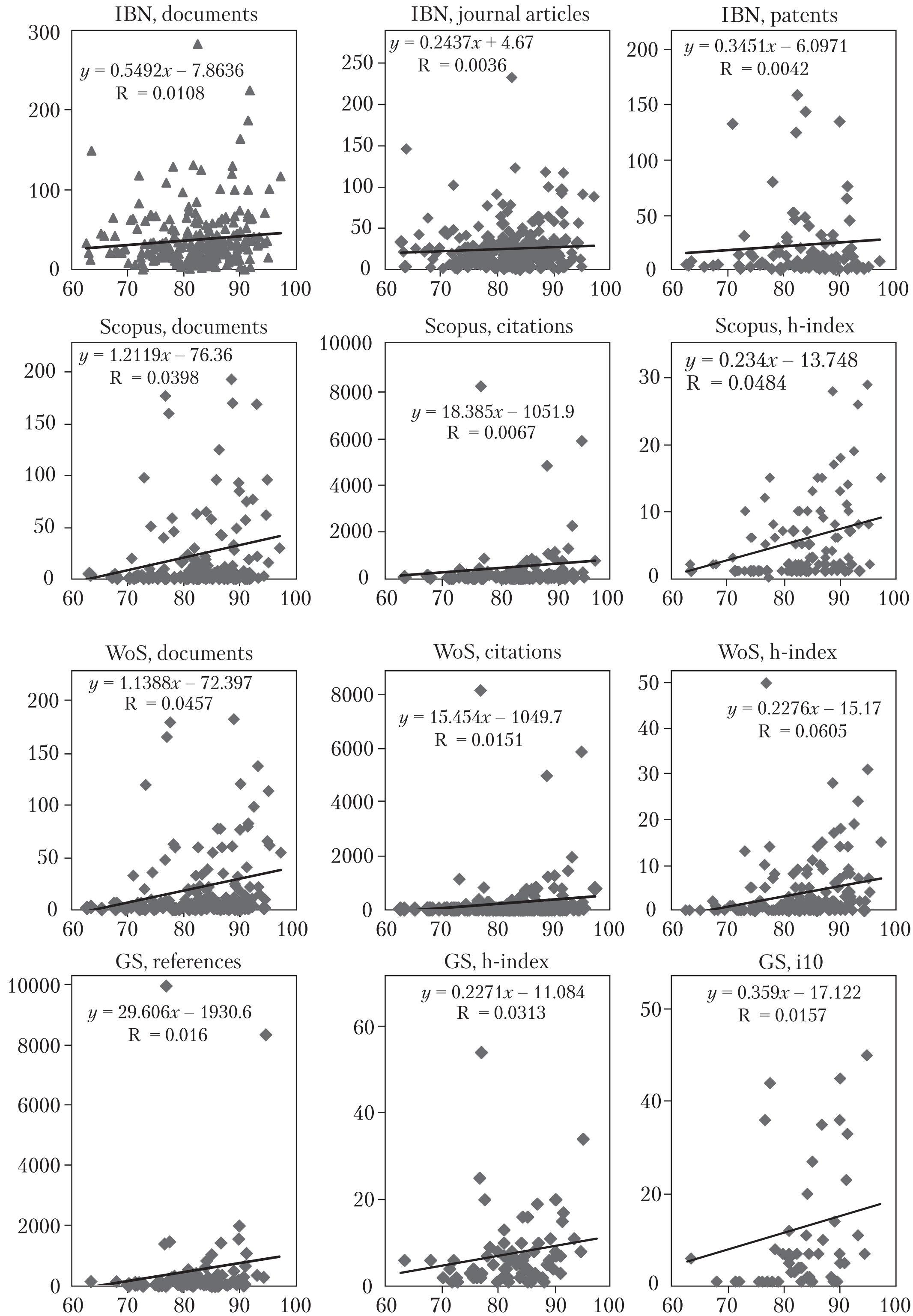

Fig. 1. Correlation between the experts' scores and the values of bibliometric indicators for the team leaders in 4 databases

CORRELATION BETWEEN EXPERT EVALUATION AND THE PAST PERFORMANCE OF TEAM LEADERS

The scores given to project proposals by experts have positive correlates with all the examined bibliometric indicators of the team leaders (Fig. 1). The correlation is extremely weak, being sligtly stronger only for the Hirsch index in WoS and *Scopus*, followed by the total number of documents in WoS and *Scopus*. For GS, the correlation of data since 2015 is similar to the total, therefore not being displayed separately in the figure.

The results of correlations (Pearson and Spearman) between experts' scores and the values of bibliometric indicators for team leaders per strategic priorities are heterogeneous. The analysis per priority repeatedly confirms that the strongest correlations are for bibliometric indicators from WoS and *Scopus*, in particular, h-index from WoS and the number of citations from *Scopus*. For these, the coefficient of correlation with the evaluation results in 6 cases exceeds the value of 0.4 — a reasonable correlation. In several other cases, a reasonable correlation is displayed by some GS indicators — references and h-index since 2015 — for priority II or I10 total and I10 since 2015 for priority III, but these correlations are only valid for the data sets with at least one value, so they are not considered relevant and reliable.

With IBN data, the highest correlations are in Priority II, followed by Priority. It is worth mentioning, that priority IV is represented mainly by researchers in social sciences and humanities, whose results, such as books or book chapters are rather important, albeit not usually reflected in the examined databases. Overall, it seems that the values of IBN bibliometric indicators did not substantially influence the expert evaluation.

In terms of strategic priorities, the most significant correlations are displayed for priorities II and V (the priority with the most thorough presence of team leaders in databases), where project proposals received the highest scores. The weakest correlations are present in priorities IV and III. In conclusion, the value of the score given by experts and the value of the correlation between the two elements seems to be interconnected, while the value of bibliometric indicators and the value of correlation lacks this connection, because for the first priority the value of bibliometric indicators (V) shows the strongest correlations, while for the second priority, the value of bibliometric indicators (III) has the lowest correlations among all.

There are differences in the correlation level depending on the coefficient applied — Pearson or Spearman. When the Spearman coefficient is used, the correlation seems to be more significant, at least for priorities I and V, with the opposite for priority II.

It appears that the relatively small number of the examined team leaders influences the level of correlation (by restricting it), due to several cases of discrepancies among the scores of project proposals and the previous scientific performance of team leaders. For instance, for priority III, the leader of the project proposal with the highest score has neither WoS and *Scopus* publications nor a GS profile, whereas the leader of the lowest-ranked project has a considerable presence all these databases, with values close to the average in *Scopus* and his GS profile is well above the average for this priority. For priority IV, 4 leadres out of the first six project proposals are not present in any of the databases. For priority V, the project proposal submitted by the most cited Moldovan researcher in WoS and GS ranked 34th out of 45.

CORRELATION BETWEEN PROJECT FUNDING AND THE PREVIOUS PERFORMANCE OF TEAM LEADERS

Generally, the leaders of funded projects have a better presence in the examined databases than those of unfunded projects, except for presence in GS (Table 3). These data imply that if a team leader is cited in *Scopus*, the probability his project proposal will be funded is 1.5 times higher, and if cited WoS it is two times higher. For pri-

Table 3. **The Share of Team Leaders with Corresponding Bibliometric Indicators, by Funded and Rejected Projects,%**

		Priority / decision											
		I		II		III		IV		V		Total	
		F	R	F	R	F	R	F	R	F	R	F	R
IBN	Journal articles	98	100	100	100	100	100	100	97	97	100	99	99
	Patents	58	65	56	58	46	20	7	0	59	19	42	29
Scopus	Documents	63	25	37	42	65	60	31	17	97	88	57	38
	Citations	50	25	26	25	54	40	16	7	97	75	44	30
WoS	Documents	78	55	48	75	73	100	40	21	100	81	66	54
	Citations	53	20	37	25	46	40	31	3	100	63	51	24
GS	References, total	13	5	11	17	19	20	44	48	48	50	27	32
	References, since 2015	13	5	7	17	19	20	42	48	48	50	27	32
	i10, total	10	5	7	0	12	20	22	31	48	38	20	21
	i10, since 2015	10	0	7	0	12	20	18	28	41	38	17	18

Note: F — funded projects; R — rejected projects.

Table 4. **Ratio between Average Bibliometric Indicators for Leaders of Funded and Rejected Projects**

		Priority				
		I	II	III	IV	V
IBN	Documents	0.97	1.53	1.12	1.16	1.74
	Journal articles	1.00	1.62	0.93	1.37	2.04
	Patents	1.14	0.62	0.55	n.a.	40.1
Scopus	Documents	4.25	4.00	1.50	3.50	1.87
	Citations	17.44	114.00	4.07	6.00	1.25
	h-index	3.60	3.33	1.80	2.00	1.54
WoS	Documents	2.69	2.55	1.17	4.00	1.64
	Citations	1.17	17.60	16.6	5.75	1.26
	h-index	2.40	4.00	4.75	n.a.	1.56
GS	References, total	6.50	5.39	1.60	0.69	0.66
	References, since 2015	7.09	7.10	3.21	0.78	0.63
	h-index, total	3.00	1.67	1.00	0.81	0.73
	h-index, since 2015	3.50	1.33	1.00	1.00	0.67
	i10, total	9.00	n.a.	0.67	0.78	0.68
	i10, since 2015	n.a.	n.a.	2.00	0.67	0.59

Note: F — funded projects; R — rejected projects.

orities IV and I, even the mere presence of team leaders in *Scopus* and Wos increases the probability of funding twice.

According to strategic priorities, team leaders of funded projects have a significantly better presence for priority I, followed by priorities V and IV. Conversely, leaders of rejected projects in priority II have a higher presence in WoS and *Scopus* than those of funded projects, and in priority III absolutely all leaders of rejected projects are present in WoS, as opposed to 73 per cent of funded projects' managers. In our opinion, these data, associated with other our analysis, reveal certain problems with the evaluation of proposals under priorities II and III.

The comparison of the average values of the examined bibliometric indicators denotes these values are higher for the leadres of funded projects (Table 4). This is true for all bibliometric indicators from WoS and *Scopus*, proving the importance of these two databases.

The leaders of rejected projects have higher values for some of the bibliometric in IBN, especially the number of patents (priorities II and III) and all GS indicators (IV and V). These facts confirm the insignificance of the above-mentioned indicators for the evaluation. At the same time, the average values of bibliometric indicators for the leaders of rejected projects under priority V are the highest among all team leaders in terms of GS indicators, and also the highest in terms of WoS and *Scopus* indicators, except for the managers of funded projects under priority V. Given that the share of funded projects from the total number of submitted proposals under priority V is one of the lowest, all these data raise questions about the distribution of funding among priorities.

THE QUALITY OF PEER REVIEW (OR CONTEXTUAL FACTORS INFLUENCING THE CORRELATION)

The organization and implementation of the call for the proposals, especially proposal evaluation play a role in better explaining the values of correlation between bibliometric indicators of team leaders and the projects' scores/funding.

The transparency of the evaluation process leaves much to be desired and we do not refer to the identity of experts, but to experts selection methodology — how, wherefrom, by whom they were selected. The results of the individual evaluations weren't by panel consultations. The average score of the 3 experts who evaluated each proposal served as the basis for the funding decision. However, for 6 project proposals, the difference between the maximum and minimum score exceeded 50 points (out of 100 possible), for 15 project proposals it was over 40 points, and for 37 project proposals (or almost 15 per cent) it exceeded 30 points (most of them under priorities I, IV, and V). Accordingly, the fate of some research groups / institutions was decided by a single expert (whose score was over 30 points less than of the other 2 experts). Giving these researchers lower scores is not supported by the values of their bibliometric indicators, as our analysis of their previous scientific performance has shown. Moreover, the average of bibliometric indicators values for the team leaders with significant score differences is higher than of other leaderss in terms of journal articles in IBN (priorities I and IV), citations, and the Hirsch index in *Scopus* and *Web of Science* (priority V), references, h-indices and I10 indices from *Google Scholar* (priority V). On the other hand, there were 10 project proposals evaluated by experts with a maximum score (100 points), even though it is not supported by the scientific performance of team leaders. Big deviations in scores lead to questions about the assignment of experts, as well as their preparation by the call organizers in terms of responsibilities, program objectives and the evaluation procedure. The complete lack of information about the implementation of evaluation and especially its results leaves room for interpretations and assumptions, including suspicions of arrangements [34].

We believe, where team leaders perform well according to bibliometric indicators and the score of the proposal is low, the expert seems to be the problem. The researchers with good presence in *Scopus* and WoS have been evaluated (upon publication and via citations) by international experts. In a small scientific community it is difficult to avoid conflicts of interest, because all researchers compete for the same limited public funds, so national experts are inevitably more subjective. Evaluation results present several relatively low scores for project leaders with internationally recognized results, as compared with others having primarily national "performance", which as a whole doesn't warrant confidence in the evaluation process.

The content of the evaluation forms highlights more faults of evaluation: inaccuracies, poor knowledge of the research field by evaluators, their superficiality, phrases with errors of expression and logic, the use of completely different arguments for scoring, identical fragments of text when evaluating different project proposals, disregard for specific attributes of a scientific field and inconsistencies between the evaluation forms and the content of the project proposal [34]. All these examples confirm not just the shortcomings of the project evaluation methodology, but also the fact that experts were appointed by people with inadequate knowledge of the call priorities, while appointed experts didn't possess skills suitable for the evaluation of all proposals. The content of the evaluation forms lead us to believe that many evaluators are not experts in their fields and are poorly qualified, resulting in corresponding consequences, as in similar situations referenced in the literature [9, 23, 24, 35]. These results caused distrust in the objectivity of the evaluation process, suspicions of premeditated score reduction for some projects and favoring of others, including the "old boys network". These significant shortcomings during evaluation led to the submission of 108 appeals that accounted for 43 per cent of the total proposals. However, all these appeals were rejected without review, based on formal reasons.

The distribution of funding after proposals evaluations also raises doubts. Based on the available resources, 101 projects were supposed to be funded. However, NARD Board decided to reduce the funding of these projects by 30 per cent as compared with the requested amount and to approve the funding of an additional 66 projects. As a result, the budget of all project proposals was reduced by the same proportion regardless of the requested amount and without a financial evaluation of each project (i.e. the projects requesting a bigger, even though unjustified budget, were privileged). For instance, projects were funded, which involve researchers who are members of the NARD Board, as part of the additional projects. The institutions represented by members of this Board have received funding for almost all submitted proposals. All these fraud allegations of the competition results are supported by evidence of non-compliance with peer-review standards in RM (e.g. [36]) and in general, of the level of scientific misconduct in the post-Soviet space (e.g. [37]).

Multiple elements of the call, such as no *Scopus* or WoS publications for the team leader with the highest score under priority III, a better presence in WoS and *Scopus* of the leaders of rejected projects vs funded under priorities II and III or rejection of the project proposal submitted by the most cited researcher in RM according to WoS and GS, in our opinion attest to the bias of the evaluation process, which in turn has negatively influenced the level of correlation between bibliometric indicators of team leaders and the call results. Nevertheless, the positive correlation between evaluation results and internationally recognized performance of team leaders, despite the evaluation shortcomings, indicate that bias and evaluation errors made by experts can and should be minimized through use of bibliometric indicators.

The analysis of the Government Program 2020—2023 call for proposals has proved that previous scientific performance of team leaders influenced the evaluation results and the funding of project proposals. This multifaceted influence answers our initial research questions:

1) Except for IBN, the presence of team leaders in the other examined databases is limited. A relatively modest presence in WoS and *Scopus* is an

indicator of insufficient international recognition of the research activities, while a low presence in GS is indicative of the team leaders' ignorance of the need to promote research within the community. However, both the presence in the databases, as well as the registered values of the respective bibliometric indicators, are relevant and representative for the scientific community of Moldova.

2) A positive correlation was established between the scores given by evaluators and the previous scientific performances of the team leaders. This correlation is valid for virtually all bibliometric indicators, albeit weak. A slightly more significant correlation is illustrated for the Hirsch index in WoS and *Scopus*, followed by the total number of documents in WoS and *Scopus*, confirming the importance of these two international databases for the evaluation of project proposals. However, this correlation was disrupted, in our opinion, by the interference of interested parties in competition results, especially given the crucial importance of this tool for the funding of the national research for the next 4 years.

3) There is a positive correlation between project funding and the previous scientific performance of team leaders. In most cases, the average values of bibliometric indicators of the funded team leaders are significantly higher as compared with those of rejected proposals, especially in WoS and *Scopus*. However, this correlation was also disrupted due to members of the NARD Board concerned with funding their own projects and institutions.

4) The correlation between the bibliometric indicators of the team leaders and the call results is heterogeneous in terms of call priorities. This correlation seemingly depends on:

a) The degree of team leaders' presence in WoS and *Scopus*. Thus, one of the most significant correlations is displayed for priority V (the most exhaustive presence of team leaders in these databases), while priority IV displays the weakest correlation (the lowest presence of team leaders in these databases);

b) The number of project proposals by priorities. For instance, the weakest correlations are registered under priority III, which has the smallest number of project proposals. It seems that any non-scientific interference on the call results when there are fewer proposals has a much bigger impact on the correlation (under this priority, the leader of the project proposal with the highest score has no publications in WoS or Scopus, while all managers of rejected projects have at least one paper in WoS).

5) However, the above-mentioned dependencies are not linear. Priority II, with only 39 project proposals and the least share of team leaders in WoS and *Scopus*, shows some of the most significant correlations. This priority has the lowest number of project proposals with differences of more than 30 points in experts' scores, the highest average score of project proposals and one of the highest shares of funded projects. Given these data, we are inclined to believe that, the strong correlation of team leaders' bibliometric indicators with the call results under this priority is due to lower bias.

6) Overall, the results of project evaluation and selection seem to have been flawed by the conflicts of interest and "old boys" schemes. Otherwise, it is difficult to explain why the most cited researcher in WoS and *Scopus* from Moldova or the founders of valuable scientific schools haven't received any funding. The evaluation of project proposals was perceived in the scientific community as unprofessional, biased and influenced by interests.

The results of our analysis, showing that the best project proposals were not always funded and highlighting major problems in evaluating and funding research projects in RM (bias, old-boys' networks and other types of social networks, bureaucratic incompetencies, the legacy of the Soviet system, etc.), call for significant changes of the process. The most important of these include ensuring the transparency of the evaluation and selection process, the involvement of foreign experts and the use of bibliometric indicators for project proposals evaluation. The conflicts of interest could be mitigated, based on the experience of other countries (e.g. [4]), by employing foreign experts for proposal evaluation. Even then, we consider that peer review should be supported by bibliometric indicators, i.e. becoming an informed peer review, because the application of bibliometric indicators for the distribution of research funds has proven successful in several countries (e.g. [9, 14, 19, 38]). However, given NARD's insufficient administrative / call implementation capacities, limited financial resources and other local factors, we believe this type of process improvement is likely to be implemented only if the national science policy undergoes fundamental changes.

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ДОСЛІДЖЕННЯ ЧИ НЕПОХІДНА ПОВЕДІНКА: ЯК ВИДИМІСТЬ ЛІДЕРІВ КОМАНД ВПЛИВАЄ НА КОНКУРЕНЦІЮ ДОСЛІДНИЦЬКИХ ПРОЄКТІВ У РЕСПУБЛІЦІ МОЛДОВА?

Вступ. Розподіл державних коштів «кращим» дослідникам є ключовим елементом наукової політики. Оцінка є основоположною діяльністю при розгляді пропозицій дослідницьких проєктів щодо виділення конкурсного фінансування. Недоліки експертної оцінки призвели до підвищення інтересу з використання бібліометричних індикаторів для оцінки пропозицій дослідницьких проєктів.

Проблематика. Переваги та розвиток бібліометрії стимулювали інтерес до кореляції експертної оцінки та бібліометричних показників заявників. Результати таких досліджень різні та неоднорідні. Водночас таких досліджень у Східній Європі недостатньо.

Мета. Встановити співвідношення між експертною оцінкою, за якою розподіляли державні кошти на 2020—2023 роки, та бібліометричними показниками керівників проєктних груп у рамках конкурсу дослідницьких проєктів у Республіці Молдова.

Матеріали й методи. Статистична кореляція результатів національного конкурсу дослідницьких пропозицій (оцінка та фінансування) та бібліометричних показників керівників проєктних груп (публікації та патенти в основних міжнародних та національних базах даних); аналітичний аналіз контекстуальних факторів, що впливають на цю кореляцію.

Результати. Показано позитивну, хоча й слабку, кореляцію між оцінками експертів і попередніми показниками лідерів. Найбільш значущим є зв'язок між результатами конкурсу та індексом Хірша в базах даних *Web of Science* і *Scopus*. Але проєкти, запропоновані найбільш цитованим дослідником *WoS* і *Scopus* з Молдови або засновниками наукових шкіл, не отримали фінансування**.**

Висновки. Аналіз національного наукового конкурсу довів, що попередня наукова діяльність керівників команд вплинула на результати оцінювання та фінансування проєктних пропозицій. Однак ці залежності не є лінійними і, схоже, на них впливають конфлікти інтересів і схеми «old boys». Це вимагає суттєвих змін забезпечення прозорості процесу оцінювання та відбору, залучення іноземних експертів і використання бібліометричних показників для оцінки проєктних пропозицій.

Ключові слова: експертна оцінка, бібліометричні показники, кореляція, оцінка дослідження, відбір проєктів.