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# **RESEARCH GRANTS IN RUSSIAN SCIENCE: EVIDENCES OF AN EMPIRICAL STUDY**

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## **RESEARCH GRANTS IN RUSSIAN SCIENCE: EVIDENCES OF AN EMPIRICAL STUDY<sup>2</sup>**

The paper discusses the results of a survey devoted to the role of research grants for the modern Russian academic community. Researchers' motives to apply for grants, the strategies used in grant contests, the factors decisive for grant success are presented. Also the extent of Russian scientists' trust to the main research foundations in the country is discussed.

The study has demonstrated that the symbolic value of grants for Russian scientists play a secondary role in comparison to their economic meaning: participation in grant contests is mainly motivated not by the aspiration for professional recognition, but the need for financial support.

The paper might be of interest for sociologists of science and others interested in current transformations of scientific field in the country. Above all, an overview of academic literature on the topic – both foreign and Russian – is presented in the paper, what can make a significant contribution to any research on grant science: its evolution, national peculiarities of grant systems, grants' influence on researchers' work and life worldwide.

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## Introduction

Nowadays lives of scientific communities of most countries are inseparably linked with the system of research grants, which helps scientists to carry out topical research, take part in conferences and other academic events, publish their papers. Research grants can be soundly considered a rapidly developing system. Its evolution started in the second half of the 19th century, being caused by science transformations and social, political and economic factors [Crosland, Galvez, 1989]. Since then the grant system experienced many significant changes – of both extensive character (as broadening of its geography and research foundations' establishment in new countries) and intensive (as strengthening of researchers' dependence on grants). It turned grants into a habitual mechanism of research projects' financing: nowadays the share of basic funding (based on cost estimates) is gradually decreasing in most developed countries, while the share of competition-based funding is growing stable [Jacob, Lefgren, 2007; Jacob, 2013].

Reinforcement of grants' influence on modern scientists' life and work becomes apparent not only in the dynamics of economic and statistical indicators, but also in emergence of new phenomena and processes in science. To give a few examples, modern academic educational programs often include specialized courses aimed at development of grants-connected skills for future academic career; more guidelines for scientists on how to get research grants are published every year; participation in grant contests is being now integrated into modern researcher's professional activity and brings changes into his social role.

The escalation of research grants' importance is caused, on one hand, by their economic meaning, as first of all they serve as a special mechanism for research funding, which plays a vital role for scientific communities of most countries, especially of those with basic funding deficiency. But on the other hand, grants also have a symbolic meaning: the status of grant-holder has a positive effect on researcher's professional reputation. In some countries – Australia, Canada, the UK, the USA, Germany, Austria, the Netherlands among many others – a number of research grants (or a number of grant applications) is taken into account for decisions on recruitment of new faculty members or research staff, on their academic career, tenure offer, is also used for teaching load calculation [Laudel, 2006; Peck, 2009; Polster, 2007; Thyer, 2011; Gillet, 1999, etc.].

Due to a number of factors, nowadays grant activity is no more within the sphere of personal will of scientists – it is of high interest for research organizations' management as well. First of all, a share of grant-funding is invested into universities and research institutions budget for infrastructure maintenance and other needs. Secondly, organizations' grant success is

sometimes evaluated when budget funding is distributed [Greenberg, 2007; Jacob, Lefgren, 2007; Ross, 2000]. And finally, a number of grants-supported research projects conducted by institution's personnel is an important element of its prestige and academic reputation. These factors motivate management to strengthen their pressure on researchers and to stimulate their participation in grant contests.

As a result, this “double-pressure” – internal as a desire of scientists to achieve professional recognition, and external as management requirements – leaves less and less scientists outside the system of research grants. It provides evidences that nowadays science is experiencing the destruction of the old paradigm “publish or perish”, which was structuring researchers' activity during many decades, and the construction of a new one – “grant or perish”, in which grant activity of scientists is the core [Musambira G., Collins S., Brown T., Voss K., 2012].

Despite all this, research grants are still being rarely studied and are discussed mostly in quasi-scientific papers. From literature, several research directions can be identified. The first includes historical and historical-sociological research devoted to the analysis of the grant system's evolution and further dynamics. As a rule, these studies do not analyze grants as the primary, central object – instead, they are studied through the prism of scientific communities' history [McClellan, 1985; Crosland, 1975; Crosland, Galvez, 1989; Crawford, 1980], philanthropic organizations' work [Weaver, Beadl, 1967; McCullough, 1994; Mazuzan, 1994] and scientific foundations' development [Nauka po-amerikanski, 2014]. Nevertheless, these are almost the only available sources of information on the reasons which initiated the grant system development, and with the rational approach being implemented, they provide a vast material for sociological-historical reconstruction of the main stages of the grant system evolution.

The second direction embraces reviews of the national peculiarities of grant systems and evaluation of their influence on research landscapes and life of local scientific communities [Shibayama, 2014; Polster, 2007; Cole, 1992; Jablecka, 1995]. Some of the studies allocated to this direction are based on empirical research – surveys and interviews – and aimed at investigation of the mechanisms and effects of research grants' influence on scientific activity inside different countries. The publications are mostly case-studies and lack theoretical reflections.

Another stream of publications on the topic are scientific discussions and expert notes, produced as a reflection on someone's personal experience [Daza, 2012; Aitkin, 1996; Berger, 2011]. Despite of the evident problems with representativeness of such opinions, these papers

contain insiders' knowledge, and thus provide us with a more in-depth understanding of informal norms and rules inside the grant system. Moreover, some of these publications present the position of different scientific disciplines, what makes possible to analyze the diversity of patterns of grants' use by different groups of scientists.

Russian researchers started to analyze the grant system in the 1990s only, after foreign foundations came to the country and the first Russian research foundations (the Russian Foundation for Basic Research (RFBR) and the Russian Foundation for Humanities (RFH)) were established. A significant attention is given to research grants in the publications by Semenov [1995; 1997; 2007], Kozlova [2005; 2007], Batygin [2005]. In publications by Dezhina [2005; 2006; 2008; 2009 and others], which were published also in co-authorship with the American sociologist Graham [Dezina, Graham, 2005; Graham, Dezhina, 2008], the most consistent analysis of grants' evolution in Russia was done.

There were several empirical studies conducted in Russia, which are devoted primarily to the analysis of Russian scientists' attitude to grant funding and research foundations' work. The results of such research – both specialized and multitask monitorings – are presented in different periods in publications by Mirskaya (periodical monitorings of natural sciences institutions of the Russian Academy of Sciences (RAS)) [2006], Allachverdyan, Dezhina and Yurevich (sample surveys) [1996; Dezhina, 2008], Institute of Sociology of RAS under leadership of Batygin (survey of social sciences researchers) [Sotsialnye nauki v postsovetsoj Rossii, 2005].

Moreover, dedicated research questions connected to the grant system are discussed in the publications of Yurevich, Allachverdyan, Sheregi, Chepurenko and others [Yurevich, 2001; 2005; Chepurenko, Gokhberg, 2005; Chepurenko et al., 2004]. In some studies, grants are not a research object, but a method – they are used as a criterion for evaluation of research effectiveness [Ivanova, Nikolaeva, 2011]. A number of publications are devoted to the discussion of the juridical definition of the “grant” notion and law aspects of grant funding [Berdashkevich, 2003a, 2003b; Gordeeva, 2010; Melnik, 2004].

To conclude, during the 1990-2000s in Russia, a considerable number of papers were published on research grants, their influence on professional activity of Russian scientists, their welfare and career. Nevertheless, I have to assume that today information on this problem is still fragmented. In particular, literature lacks empirical data on diffusion of grant-related practices in the scientific field, the factors which stimulate researchers to apply for grants and the strategies used by them to get research funding, on the main actors in the country's grant landscape and the overall attitude of the Russian academic community to the grant system. All the questions

mentioned above are used as a basis and a starting point for an empirical study, which goals are determined as following:

- to analyze the extent to which grants-related practices are widespread in the Russian scientific field; to identify the groups and categories of scientists which are the most actively involved in them;
- to study the main motives of scientists to participate in grant contests;
- to evaluate the satisfaction of Russian scientists with the Russian public research foundations' work;
- to analyze Russian scientists' opinion on the grants' role in their individual professional activity and in the development of the Russian science in general.

This study might be of high interest not only for researchers, but also for policy-makers. It provides insight into the real role of grants for Russian science development and scientists' work, and helps to answer whether the current grant system stimulates better scientific results, or it needs some improvements.

## **Methodology**

To achieve the goals, a sample online-survey was conducted. It was organized in several stages. First of all, a questionnaire was developed, as an instrument for collection of quantitative data. The questions for the survey are formulated in accordance with the main goals of the study and grouped into the four blocks:

- respondents' grant experience (the experience of participation in grant contests and work for grant-supported projects): experience characteristics (intensity, success rate), the main motives which stimulate researchers to apply for grants;
- evaluation of the Russian research foundations' work (RFBR, RFH, the Russian Science Foundation (RSF)), needs for its improvement;
- grant success factors – respondents' opinions on the factors which define grants distribution. The list of the factors offered to respondents includes both formal criteria and informal “rules of the game”. Data analysis on this question makes it possible to determine whether Russian researchers consider grant science as “shadow” or perceive it as an open market guided by the direct competition principles.
- the role of research grants for individual academic activity and development of the Russian science in general. The questions of this block are opened and of more evaluative, than factual character.

- also the questionnaire includes an additional block of questions on socio-demographic information of the respondents.

After the questionnaire developed, I made a testing: 10 respondents were invited to answer the questions and give their comments and remarks when experiencing some problems with questions understanding or answering. Moreover, several short face-to-face interviews were conducted in order to determine whether there were any questions left, which were important for the research, but not included into the questionnaire. These procedures can be considered as a guarantee of the high validity of the developed instrument.

On the next stage, invitation letters were sent to all the researchers chosen for the sample. For the survey, the respondents were selected according to the following criteria: 1) a person who works in a research organization of the public or higher education sectors, and 2) is employed as a faculty member or researcher. Grant experience was not taken into account on purpose: I considered important to compare opinions on grant system of “insiders” and “outsiders”.

The respondents’ selection procedure was organized following the “descending” logics: research organizations were selected at first, then – the respondents among these organizations’ research personnel. This strategy was chosen as the available lists of research organizations are the sources of information, which guarantee the best coverage of the general population – the Russian academic community. Other sources of information (authors index of the Russian Index of Scientific Citation, All-Russian mathematical portal Math-Net.ru, etc.) were used as supplementary.

The sample was built consequently according to the following algorithm:

1. The sample size was calculated. In order to have a representative sampling (by gender and age groups, federal districts and regions of the Russian Federation, research organizations types (RAS institutes, universities, etc.) and taking into account a traditionally non-high return rate in online-surveys, the sampling size was defined as 2350 respondents. In accordance to the selected approach, a target number of research organizations was then calculated. For all the organizations, the common respondents number was established (10 respondents), so the number of organizations was 235.
2. A list of research organizations was developed, including 1732 units.
3. Research organizations were distributed between the federal districts according to the codes (All-Russian classifier), ranged on alphabetical order and numerated.

4. For each federal district, a target number of organizations was calculated on the formula:

$$n_i = (235 \times \text{Share } i) / 100,$$

where  $n_i$  – the number of the research organizations of the federal district  $i$  in the sample;  
Share  $i$  – the share of the federal district  $i$  in the general population.

For each district, a random selection was made using a random-number table.

5. The selected organizations were searched for in Internet. The respondents' selection was made with the information published on the organizations' official websites according to the following algorithm: first, 3-4 departments were selected randomly (faculties, chairs, centers, labs), the same method was then used to select the respondents among researchers or faculty members. Technical staff was excluded from the selection procedure.

After the sample was formed, an official invitation to the survey was sent to the respondents. The survey was conducted in April, 2014 on the online-platform SurveyMonkey. After it was finished, the data was imported, coded and processed with SPSS. The data analysis was made by uni- and two-dimensional analysis.

There were 2350 researchers invited to the survey. They represent 235 research institutes in all the eight federal districts of the Russian Federation. The return rate was 23.9% (561 answers), that is an average indicator: in general, for online surveys it rarely exceeds 40%, more often ranges between 20 and 30% [Nulty, 2008]. After the primary control, 71 questionnaires were deleted (mostly, they weren't finished or were filled with logical mistakes). Finally, the data analysis was made on 490 respondents' answers.

## **Sample Structure**

Among the respondents, 58.6% are males and the rest 41.4% - females. All the age groups are represented in the survey (fig.1). More than 85% of the respondents have academic degrees of candidate or doctor of sciences. Only 14.7% of the respondents do not have academic degrees for the moment, one third of them are young researchers under 29 years old. Such a considerable share of those having academic degrees among the respondents is probably caused by availability of contact information: mostly organizations publish contacts of only leading researchers, heads of faculties and research centers, chairs, labs and other departments. The information on junior research fellows, lab assistants, interns is often missing.



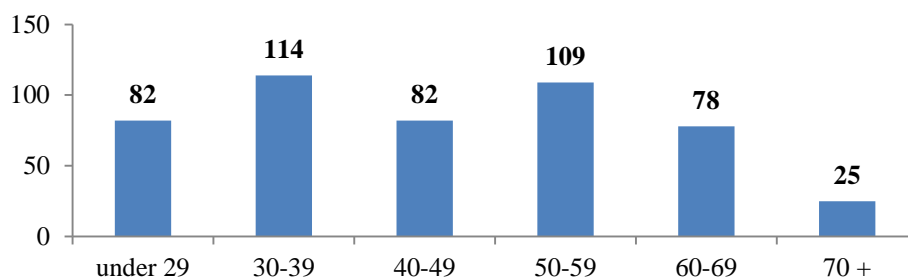


Fig. 1. Respondents distribution across age groups (in numbers).

Fig. 2 shows the distribution of the respondents across the fields of science. Almost half of them are mathematicians, physicians, chemists, and others working in natural sciences. In this respect, the structure of the sample fully coincides with the structure of the Russian academic community in general [Indikatory Nauki, 2015]. The share of the researchers working in the technical fields of science among the respondents is just 12.2%, though for the Russian science this indicator exceeds 60%. The discrepancy is caused by the criteria used for the respondents' selection: in the survey, scientists from the public and university sectors were invited, while most technical science researchers work in the private sector. The smallest group of the respondents (9 per. only) are of those fields which are united in "others" category (includes medicine, agriculture), though a considerable number of respondents were invited from medical organizations and the institutes of the former Russian Academy of Agricultural Sciences.

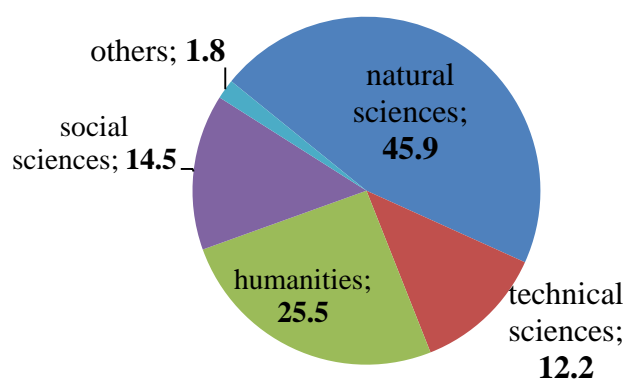


Fig. 2. Respondents distribution across fields of science (in percentage).

Distribution of the respondents across the types of organizations is quite predictable (fig.3): more than a half of them (53%) work in RAS, almost the same number (50%) are from higher education institutes. The share of the former Russian Academies of Medical and Agricultural Sciences totals to 3%<sup>3</sup>. About 6% of the respondents work in public organizations

<sup>3</sup> The sum exceeds 100% as several answers could be chosen.

not included into the Academy or higher education sector. Mostly these are the organizations under ministries' or some other federal services' control. A considerable number of the respondents (139 per.) work in several organizations simultaneously – the most widespread model is to combine jobs in RAS and universities.

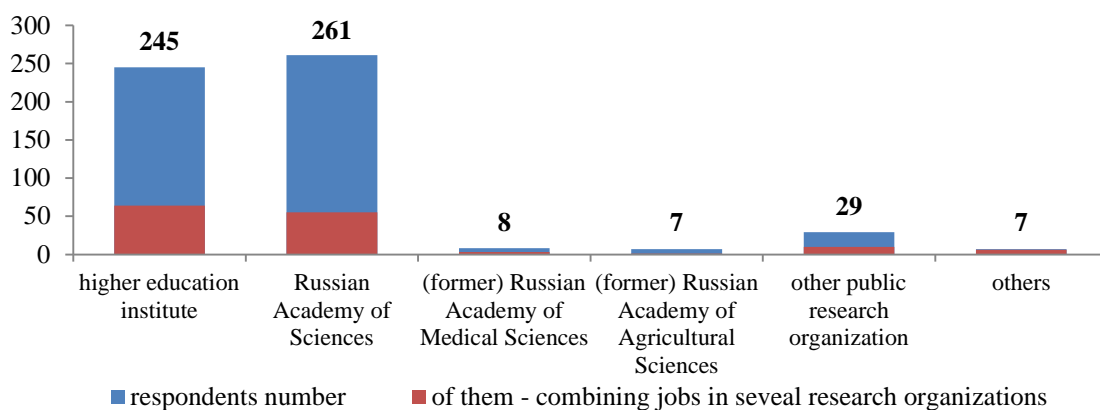


Fig. 3. Respondents distribution across types of research organizations (in numbers).

Researchers from eight regions of the Russian Federation took part in the survey (fig.4). The number of responses from each region mostly correlates with the number of invitations sent to its research institutes. More than one third of the sample is the researchers from the Central region (about 80% of them are from Moscow). Almost the same number of questionnaires came from researchers of both the Siberian and Northern-Western regions. Here, the role of big cities is also prominent: in the former, about 60% of the respondents live and work in Novosibirsk (34 per.) and Tomsk (20 per.), in the latter – more than 75% (68 per.) are researchers from Saint-Petersburg.

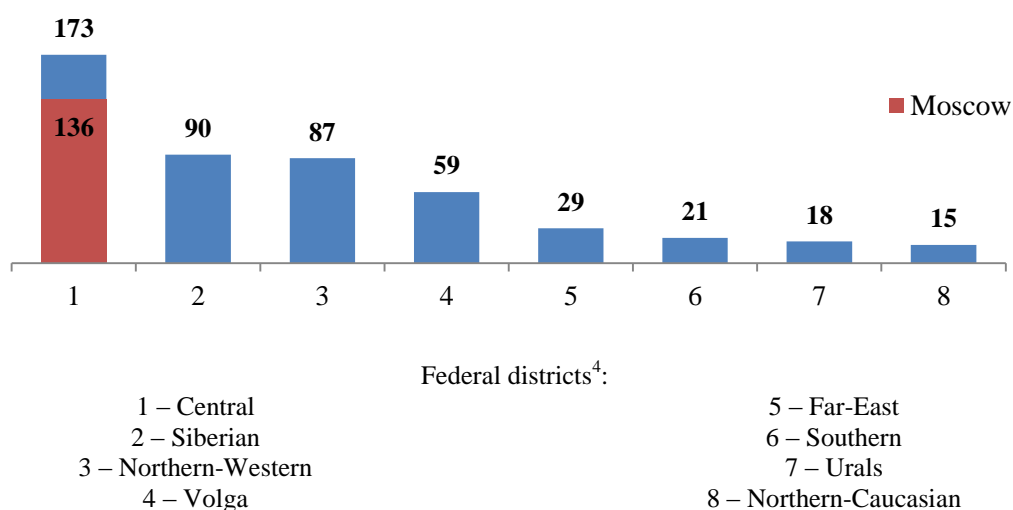


Fig. 4. Respondents distribution across districts (in numbers).

<sup>4</sup> The Crimean district is not presented.

The composition of the sample and its structure according to the most important criteria let us consider it representative and reflecting all the key structural characteristics of science in Russia.

## **Survey Results and Findings**

### **Grant experience**

The majority of the respondents have a considerable experience of participation in grants contests: 83% of them applied for research grants during last five years. About one third of these researchers worked only as “executors” of grant-supported projects, almost 8% - only as “leaders” (who manage projects), and 60% (what constitutes one half of the whole achieved sample) have an experience of working both as an executor and a leader in grant projects. The share of those who have never applied for a grant or worked within a grant project is 17%. Such a high share of grant-holders among the respondents is caused, from my perspective, by the fact that this survey is of higher interest for them: researchers who used to apply for grants took an invitation for the survey readily, while those having no such experience often ignored it.

Grant experience is not determined by demographic characteristics of the respondents. In gender groups, the share of those who have any grant experience differs insignificantly (84.7% for males and 79.7% for females). In age groups this indicator varies from 85% (30-39 and 60-69 years) to 78% (50-59 years). The field of science has a more visible effect on researchers’ grant activity. The share of those who applied for grants during last five years is the highest for natural sciences (88%) and the lowest for technical (68%). For the researchers working in humanities and social sciences, participation in grant contests is also a traditional practice already (82% and 83% correspondingly).

The most important factors which influence grant activity of researchers are their academic qualification, science sector in which they work and region of their residence. For the former, the survey demonstrates the predictable results: almost all the doctors of sciences (87%) applied for grants during last five years, moreover the absolute majority of them have an experience of administrating grant projects (working as the leader). The candidates of sciences yield to them, but insignificantly (83%). Nevertheless, among them the share of researchers who have an experience of administrating grant-supported projects is lower – a bit more than 50%. The respondents with no academic degree tend to work for grant projects mostly as executors. Almost one third of them do not have any grant experience at all.

Less predictable are the correlation between the respondents' grant activity and the sector of employment. More than 90% of academics (researchers of RAS) took part in different grant contests within last five years. Among the researchers from the higher education sector, about 70% have such experience. From my perspective, this difference is caused by existing specialization of the Academy and higher education institutes in Russia: students' instruction is still considered to be the key function of many universities. Also it might be caused by a high teaching load that prevents faculty members from applying for grants and conducting grant-supported research.

Scientists from different regions vary in their grant experience. The respondents from the Siberian federal district have the most active position in this respect: more than 90% of them took part in grant contests during last five years. Moreover, about half of them have an experience of administrating grant-supported research. In Novosibirsk, 33 respondents out of 34 applied for grants. The cities Moscow and Saint-Petersburg, the Volga and Far-East federal districts also have high indicators: 87% for the both cities, and 85% and 83% for the districts correspondingly. In general, the survey results demonstrate that the most active participants of grant contests are the regions which are considered the traditional centres of science in Russia. In the Northern-Caucasian, Urals and Southern federal districts, grant activity of researchers is considerably lower: the share of those having any grant experience here is 69%, 67% and 76% correspondingly. In the Urals district, it might be caused by the age characteristics of the respondents: their average age is lower here, than in the sample on average.

Out of 490 respondents, 405 applied for grants and/or worked for grant-supported research projects during last five years. Most questions of the survey are analyzed on these 405 questionnaires. The survey demonstrates that the dominant "vector" of the Russian scientists' grant activity is participation in grant contests of the Russian public research foundations. About 70% of the respondents have never applied for grants neither of Russian non-public foundations, nor of foreign organizations. Among the respondents, a group of the most active grant-apppliers can be identified: it includes only 44 researchers who applied for grants of organizations of all the three types mentioned above. 32 of these researchers work in RAS (including three from the former Russian Academy of Agricultural Sciences) and 17 – in universities<sup>5</sup>.

For a selection of grant-giving organization, most respondents follow a strategy which might be characterized as "a passive decision-making": almost one half of them prefers to apply for grants of the most well-known research foundations in the country, more than 25% - of the

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<sup>5</sup> The sum exceeds 44 as several answers could be chosen.

organizations where they have applied before. Only 20% of the respondents take their colleagues' experience and professional advice into consideration. An important attention is given to grant size – this factor is mentioned by 30% of the respondents. Competition rate within grant contest is taken into account by 13% only. In my opinion, such a neglect of an indicator which helps to evaluate (at least indirectly) the potential success of application and validity of time investments, demonstrates that the real choice of a grant-giver is made inside the pre-installed boundaries – among the most well-known and usual organizations.

One of the factors outstands from the rest due to an extremely small number of the respondents who mention it (8 per.) – personal contacts among foundations.

Grant experience of the respondents varies significantly by success rate (fig.5). For most respondents (71%) it is modestly successful: they get grants from time to time, but also face with failures. Purely positive experience (if researcher gets grant every time he/she applies for) is rare (12%). 17% of the respondents are the researchers who have purely negative grant experience: they have never got grants though applied for (it should be mentioned that the question was formulated in such a manner, that this group includes – among others – researchers who applied for grant just once within last five years).

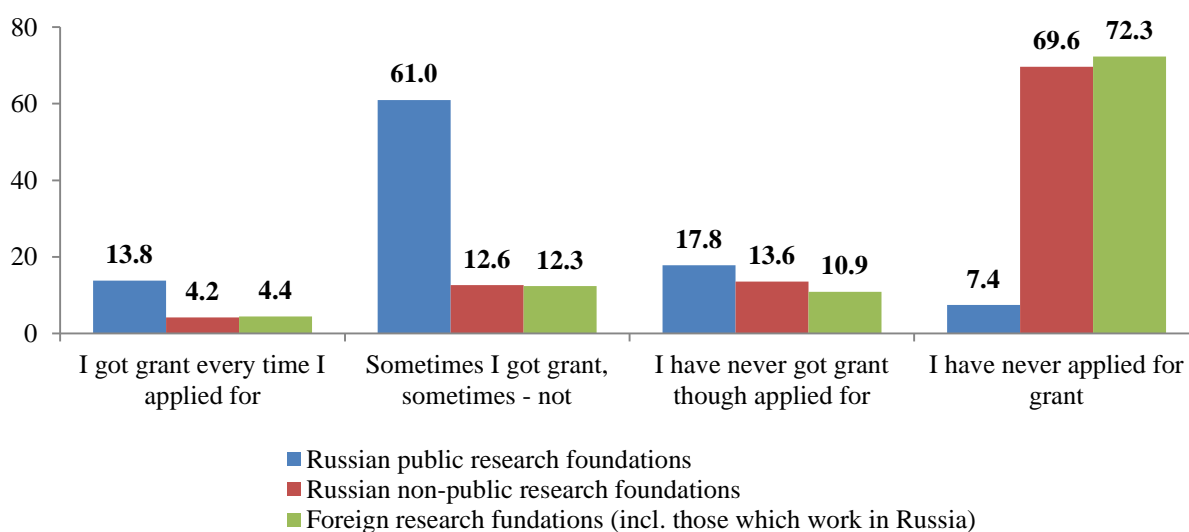


Fig. 5. Grant experience and success of the respondents in grant contests of grant-giving organizations (in percentage).

Among females, more researchers have negative grant experience – almost one third. For males, the indicator is double lower – 86% of them managed to get at least one research grant within last five years. Academic qualification, quite evidently, also influences grant experience: the share of those having negative grant experience for doctors of sciences is 13%, for candidates – 20%, for those without academic degree – more than 30%.

A significant difference was found out between the fields of science: the biggest share of those who could not get grant though applied for is among humanities (30%). For others, this indicator varies from 10% (technical sciences) to 19% (social sciences). In general, it is evident that the “target group” of RFH has a more negative grant experience than those who – due to their specialization – participate mostly in RFBR grant contests.

The respondents from RAS are more successful in grant contests than their colleagues from the university sector: among the academics 13% only could not get grants during last five years, among faculty members – almost 25%. The data analysis also demonstrates a significant difference in grant experience of researchers from different regions of the Russian Federation (fig.6). Moscow is the doubtless leader by the share of the researchers with positive or relatively positive grant experience. In a number of the federal districts (the Volga, Northern-Caucasian, Southern) the success rate is much lower.

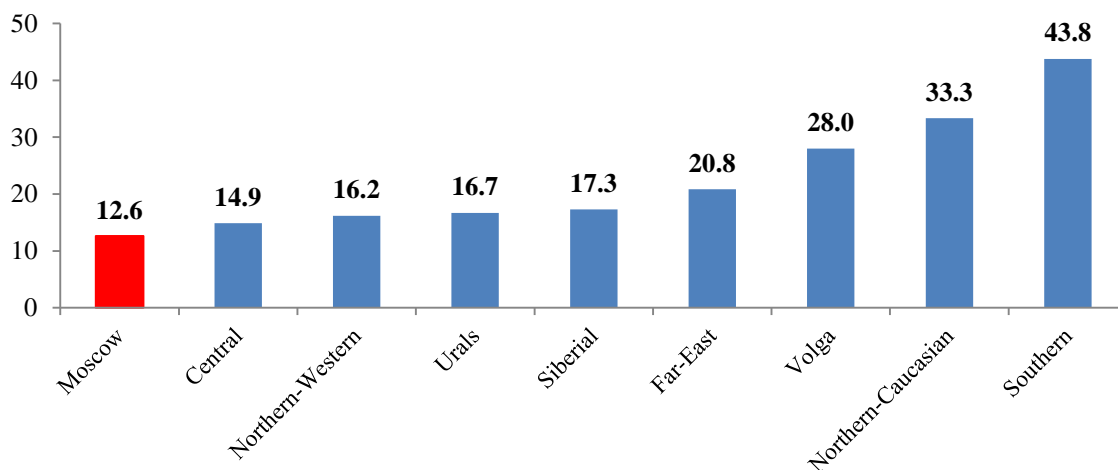


Fig. 6. Respondents with a purely negative grant experience (never got grant though applied for) (in percentage).

### **Needs for grants: motives for participation in grants contests**

The data analysis demonstrates that nowadays the financial function of grants is dominant for the Russian academic community: more than 65% of the respondents take part in grant contests as they provide additional funding (fig.7). In the comments to this question, some respondents mention that research grants are not an additional, but the main source of income for them (“It is impossible to survive just with the salary. So the variant – *[I get grants]* in order not to die”, “Is it the main source of income”, “*[I get grants]* in order to be paid for my scientific work at last”<sup>6</sup>).

<sup>6</sup> Here and further in the paper the translation of the respondents comments is made by the author – E.S.

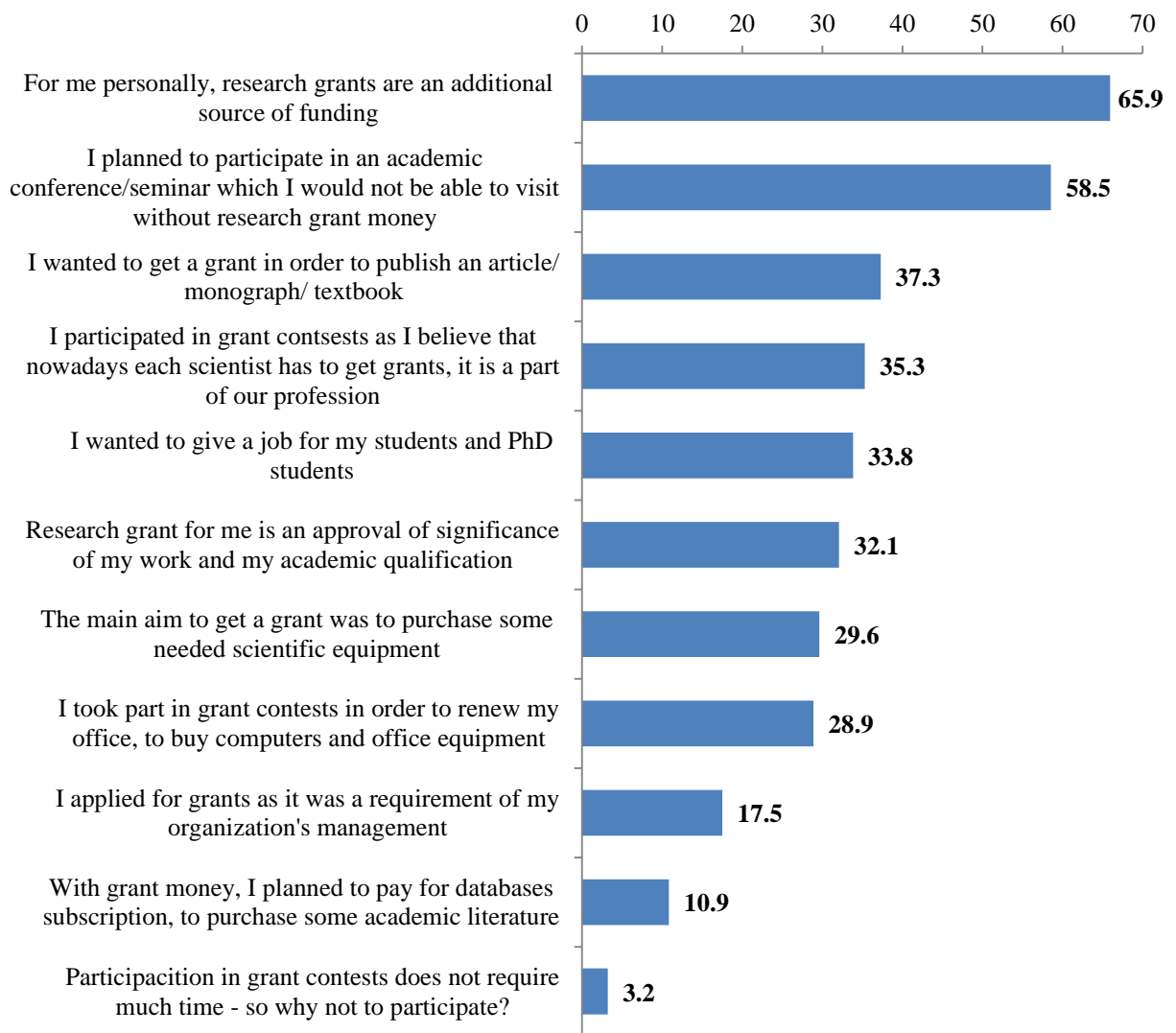


Fig. 7. Motives of participation in grant contests: the share of the respondents who marked corresponding motive (in percentage).

*Notes:* The sum exceeds 100% as several answers could be chosen.

All the highest positions in the motives' rating deal with the financial support of research. Often grant funding is used to pay for academic activities which are traditionally considered to be an integral part of science per se: participation in conferences, seminars and other academic events, publications, etc. Many respondents from natural sciences underline that they have to take part in grant contests in order to get money for reagents and other consumables, which are sometimes needed for budget-funded research projects. For humanities and social sciences, the motives to apply for grants include the need to get funding for expeditions and field studies, for research stays and work in other regions or foreign libraries or archives, etc. The data analysis demonstrates that most researchers have to apply for grants regularly in order to secure some basic conditions for their professional activity and life. Thus, grants often execute the function

which is mostly associated with basic research funding, and fill the gaps left after budget funds distribution. As a result, it is necessary to admit that the postulate “grant or perish” is of the economic character in Russia, while in some other countries its influence is caused mainly by scientists’ aspiration for recognition and their scientific achievements’ acknowledgement.

Despite of such an evident domination of the economic component of research grants, one third of the respondents confirm that their motivation is connected also with the wish to get approval of their work results and qualification. It demonstrates a symbolic value of research grants as transmitters of recognition in the scientific field. However, for the Russian academic community this function is currently supplementary: just 3 respondents out of 405 have answered that their only reason to apply for grants is to get professional recognition.

At the rating bottom are the motives which seldom provoke researchers to take part in grant contests. For example, only 3% of the respondents apply for grants just because it does not require much time. The majority of these respondents are young researches under age 29, who have no experience of grant-supported research administrating.

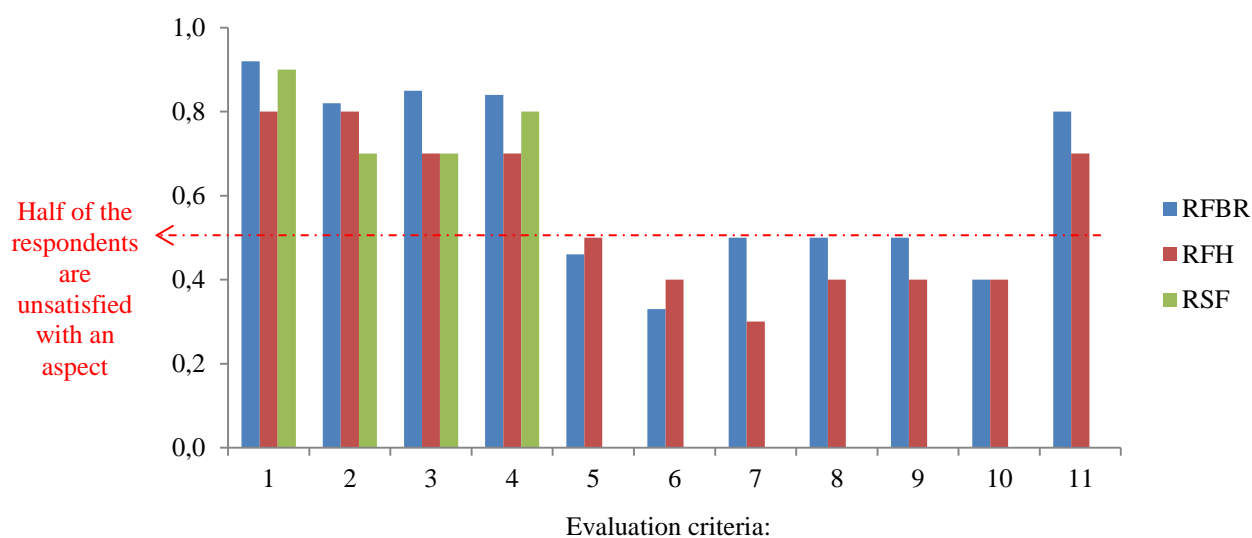
## **Evaluation of research foundations’ work**

Russian scientists mainly apply for grants of the biggest Russian public foundations: 68% of the respondents took part in grant contests of RFBR during last five years; of RFH – double less. The survey demonstrates that the establishment of RSF caused an excitement in the Russian academic community: in 2013, its first year, almost 40% of the respondents applied for grants here. Most of these researchers had grant experience in RFBR and RFH by that time.

While analyzing the survey data I found out that for the respondents who had no experience of administrating grant-supported projects it was difficult to evaluate the foundations’ work: many of them chose “cannot say” for the most evaluation criteria. As a result, I decided to analyze this part of the questionnaire using the answers of only those respondents who: 1) applied for grants of the foundations under study (RFBR, RFH, RSF) and 2) have an experience of managing grant projects (working as “the leader”). This strategy guarantees more relevant and unambiguous evaluation. The respondents’ opinion on RFBR work was analyzed with 206 questionnaires, on RFH – with 93 items, on RSF – with 126. For the latter, I used only several criteria which deal with information availability, application procedure, foundation’s feedback availability. The rest of the criteria are ignored as it was the first year of RSF, so it was impossible to evaluate all the stages and aspects of foundation-scientists interaction.



The results of the foundations' evaluation are presented shortly in Fig.8 and discussed further in this section.



- 1 - Available information on grant contests
- 2 - Equal access to grant contests for all the groups of scientists (regardless of qualification, place of residence and work)
- 3 - Comprehensible requirements to grant application and supporting documents
- 4 - Application procedure
- 5 - Availability of feedback from foundation on all the stages of grant contests
- 6 - Accessibility of information on all the grant applicants and their research projects
- 7 - Open access to the results of peer-review (incl. full versions of reviews)
- 8 - Criteria for evaluation of applications
- 9 - Objectivity of experts selected for peer-review
- 10 - Rules of grants distribution
- 11 - Preparation of final report on grant-supported projects

Fig. 8. Evaluation of the foundations' work on different criteria (in average points).

### 1. The Russian Foundation for Basic Research

More than 90% of the respondents are satisfied with information accessibility in RFBR, open access to grant contests for all the categories of scientists, application procedure. With another two “formal” criteria – preparation and filing in grant reports – the Foundation was also evaluated quite high. Nevertheless, several respondents from non-central regions of Russia mention they have difficulties with application and reporting on grants, because of the requirement to file in some “hard copies” of the documents (though nowadays most documents are to be presented online).

For the rest of the criteria, RFBR is evaluated less positively. Almost half of the respondents are not satisfied with availability of feedback from the Foundation. Even more critical is the position on availability of the information about all the participants of grant

contests. The respondents are not satisfied also with the accessibility of peer-review results, though nowadays RFBR reviews are published online and available for projects leaders. It might be connected with the quality of expert reviews – they do not provide a full explanation of the Foundation decisions on support/ non-support of research projects. One of the respondents says: “When my projects were not supported I usually received illiterate reviews. Often there were two positive reviews and one ambiguous, the result was – not to support. One expert is describing the project’s strong points, while the other thinks they are the weaknesses”. Another respondent also mentioned: “It is written on RFBR website that an expert does not recommends to support my project because the leader is “a graphoman”. I applied for this grant being a PhD student, so I did not have any academic degree yet, but enough publications in good journals. It appears these are the signs of graphomania”.

One of the evaluation criteria deals with experts’ objectiveness and grants distribution rules. Numerous discussions among Russian scientists on “shadow” mechanisms of grants distribution made me expect that the level of the respondents’ trust in experts’ objectiveness would be relatively low. Nevertheless, the survey demonstrates that there is no general agreement on this problem among researchers: the respondents are divided into three equal categories – those who are fully satisfied with this aspect of RFBR work, those who are fully unsatisfied and those who could not give an unambiguous answer. The share of the researchers who evaluated this aspect negatively is higher among the respondents who have negative grant experience (got grants but not every time when applied for or never got a grant). For this group, the indicator equals to 35.5%, for the respondents with purely positive grant experience – 21%.

The respondents also describe some more reasons of their discontent with RFBR work: late funding (money transaction in the second part of year), formal limitations on pursue of different materials and instruments, etc.

## 2. The Russian Foundation for Humanities<sup>7</sup>

The majority of the respondents are fully satisfied with information availability in RFH, open access to grant contests for all the groups of scientists independently of place of work, region of residence, academic experience. The requirements to grant applications are clear for most of the respondents. At the same time, one third of them are unsatisfied with the application procedure (most of these researchers live outside the Central federal district).

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<sup>7</sup> In 2016, RFH was reorganized and formally joined to RFBR.

RFH evaluation on other criteria is considerably more negative. Thus, almost one half of the respondents are unsatisfied with availability of feedback from the Foundation and of the information on grant contests' participants. More than 70% of the respondents negatively evaluate the availability of expert reviews.

The researchers' opinions on RFH grant distribution rules, criteria for application evaluation and experts' objectiveness vary considerably. At any case, about one third of the respondents are not satisfied with these aspects of the Foundation work. No correlation is found out between this position and respondents' grant experience, gender, age or region.

The procedure of reporting on grant-supported projects is evaluated relatively low: one third of the respondents are fully unsatisfied with the current rules. It is mainly caused by the necessity to prepare financial report which appears to be a very complicated task. One of the respondents answers: "The main problem with grants – a complicated and unnatural character of financial report, moreover the rules toughen every year. If I need to go to [...] to work in a library, the easiest way is to get my salary and to go as a private person any time. Because to organize such a research stay on grant funding is a torture".

In general, RFH was evaluated more critically than RFBR. For most of the criteria, less than a half of the respondents supported the Foundation.

### 3. The Russian Science Foundation

For the first four criteria which are used for RSF, it is evaluated quite positively. It demonstrates that the organizational aspect of RSF grant contests is on a high level. Nevertheless, the respondents mention some failings: "There is too much unnecessary in the application form", "The instructions for application are poorly developed: there are no specifications on what research group or laboratory is", etc. Some of the researchers underline that RSF is too far from the Russian reality and its grant policy does not correspond with the needs of the Russian science: "It is evident that the number of grants is too small. First of all, it was necessary to build a rating of research collectives and to analyze the needed number of grants, and then to organize a contest. Maybe, a grant size would be smaller, but a bigger number of effectively working groups would be supported".

## Factors of grant success

The respondents were offered to evaluate the significance of different factors for getting grants on three-point scale, where 1 – “factor is insignificant”, 2 – “factor is significant”, 3- “the most significant factor”. The results of the ranking are presented in Tab.1.

On the top are research topic and correct registration of all the application documents. The latter is considered to be important for grant success by 56% of the respondents, a half of them believe it is the most significant factor. Among other significant factors are achieved scientific results of project’s leader, his/her professional reputation and project correspondence to foundation’s interests and specialization.

Tab. 1. Evaluation of the factors’ significance for getting a research grant (in average points)

Average rate	Success factor
2.36	Topicality of research, its aims and goals
2.21	Correct application form and other documents
2.18	Achieved scientific results of project’s leader (publications, citation index, etc.)
2.17	Reputation of project’s leader in scientific community
2.15	Correspondence of research topic with foundation’s specialization and interests
1.94	Rational approach to selection of grant contest type
1.93	Successful grant experience in this foundation
1.92	Personal contacts
1.83	Employment in a prestigious research organization
1.80	High position in scientific field
1.66	Successful grant experience in other foundation
1.62	Region of residence

Less significant are the factors which are traditionally associated with the shadow mechanisms of grants distribution: personal contacts, prestige of employing research organization, high position in the field of science, place (region) of residence. The significance of the last of these factors is more recognized by the respondents who live outside the central part of Russia.

The respondents were also asked to formulate their own recommendations which could help other researchers to get a grant. For the analysis, they are categorized and marked. The

largest in number are the recommendations which deal with all the formal blanks and documents fill: “To scrutinize the requirements, to follow all of them”, “To write shortly. There should be no formal claims to the application form”, etc. Many respondents point out that “the correct” topic should be selected for research project. It should not only be topical and novel, but equally – connected with current priorities and scientific fashion: “You should choose a topic which is important for the region”, “You should work with a fashionable problem”, etc. Just a few respondents have recommended to be guided by personal research interests only.

A considerable attention in the respondents’ recommendations is given to publication activity which is considered the necessary condition for grant success: “To publish 20 articles in ‘Nature’ every year”, “To have some interesting results and to publish them in high-rating world journals”, etc. Not less important is to have a part of research project done before applying for a grant on it: “The biggest part of the project should be finished already!”, “The project should be partly finished, with some publication almost ready”, etc.

Moreover, many comments are made in a form of wish, abstract instruction: to work a lot, to develop one’s professional skills. Some of the respondents also recommend to follow a rational approach to selection of research group’s members (to include – even formally only – some young scientists) and to take part in grant contests regularly as practice makes perfect: “To apply for grants systematically, earlier or later the quantity will turn into quality”, “It is necessary to try and not to be scared. Do not despair if you face with a failure, just continue to participate in contests next year, and to search for other organizations which might be interested in your topic”, etc.

## **The role of research grants for science**

Among the 405 respondents who took part in grant contests during last 5 years, 80% believe that research grants increase the effectiveness of their individual academic work. The main argument of the researchers for this position is that grants are almost the only reliable source of research funding, scientists’ income and equipment renewal. Thus, it might be concluded that research grants do not increase the effectiveness of science, but function as a necessary condition for it.

About 10% of the respondents consider that grants do not influence their academic activity. There is no correlation between this position and the respondents’ grant experience or socio-demographic characteristics. Nevertheless, the indicator is higher among the researchers

who only worked as executors and do not have an experience of grant-supported projects administrating.

The role of research grants for the progress of the Russian science in general was positively evaluated by 63% of the respondents: for some of them it is caused by the financial resources which grants provide (“Grants help not to be distracted by additional workload needed to fill in the family budget”), for others – they are the stimulus to re-evaluate their achievements and to present research results to scientific community (“Any occasion to have a look at your research from outside is useful, here come creativity of research approach and new opportunities for aims and goals realization”).

The share of the respondents who deny grants’ positive influence on the Russian science progress is 15%. This indicator, nevertheless, does not fully reflect the complicity of the respondents’ opinions expressed in the survey. Some of those who evaluate it positively, also underline the existence of internal contradictions and limitations of this conclusion, for example: “It depends on foundation’s policy. I am not sure that experts’ opinion is: 1) free of pressure and 2) competent. When I am looking through publications sometimes I wonder how any foundation could give money for such research projects. It is enough to have a look at the list of projects which were supported 5-6 years ago and to ask – where are these researchers now?”, “Yes [*grants do help*], but not a lot. The base is formed by basic budget which works as the fundament for all the results. In this landscape, the grant system supports the most active (and the most successful) groups. If you take the basic budget away, the grant system will not be viable. That is why the substitution of the basic budget with grants will have catastrophic effects for development of science in the country”.

The respondents’ comments and remarks demonstrate that the attitude of the Russian scientific community to the existing grant system is highly ambiguous. Many scientists underline its problems and limitations, which have a negative impact and prevent a more effective use of grant funding for science progress.

## **Conclusions**

The modern stage of the global science development is characterized by the strengthening of research grants’ influence on scientists’ work and life. Science in Russia – where the grant system was introduced significantly later than in most developed countries – is also fully involved into these global processes. Participation in grant contests and realization of grant-supported research projects are gradually turning into an integral element of Russian researchers’

day-to-day professional activity. Despite this, the empirical knowledge on grant science in our country is very limited: several surveys on the topic were conducted a decade ago, their results and findings are just partly published. It was the main motive for me to launch a new survey which embraces all the questions connected to grant-related practices in the Russian scientific field.

The study provides an empirical basis for the widespread conviction that research grants are now deeply integrated into the very structure of academic activity: most of the survey respondents applied for grants and took part in grant-supported projects during last five years. In this respect, the survey results correspond to research conducted in other countries [Polster, 2007; Peck, 2009; Musambira, 2012; etc.], that is an evident for the global character of the transformations caused by the grant system.

Contrary to my initial expectations, the survey demonstrates that the symbolic value of grants for Russian scientists play a secondary role in comparison to their economic meaning: as a result of budget funding deficiency, participation in grant contests is mainly motivated not by the aspiration for professional recognition, but the need for financial resources to support a research field or research collective, to supply necessary conditions for day-to-day functioning of research center or laboratory. Although some respondents consider grants a form of their academic achievements' approval, I should admit that grant activity of modern Russian scientists is economically determined. However, the importance of research grants for the progress of Russian science – both on individual and institutional levels – is recognized by most respondents.

A detailed investigation also reveals the extent of trust of the Russian scientific community to the grant-giving foundations which dominate in the grant landscape of the country. The respondents positively evaluate the formal aspects of RFBR, RHF and RSF work. At the same time, most of them are unsatisfied with the current rules for evaluation of applications, objectiveness of experts invited for peer-review, schemes of grants distribution. Taking into account that most Russian scientists do not have any grant experience outside these three public foundations, it might cause the decrease of their trust to the grant system in general. Some reformation of the current system of research grants is definitely needed. First of all, it is connected to its “turning up” to the actual needs of the academic community and to the real functions executed by research grants. On the foundations' level, the primary aim is to develop a reliable and open system of peer-review which could be a guarantee of fair grants' distribution.

The survey has demonstrated a number of grant-related issues in Russian science, which are promising for further research. Among them are the mechanisms of grants' impact on research orientation and manipulation of science, their influence on publication activity of researcher and on the contrary – its importance as a factor of grant success. Not less important is an effort to comprehend the role of grants in modern science from the theoretical sociological perspective, that will allow to understand their position and role in scientific field.

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