

Summary

Study of the opportunities for funding research and the role of the Foundation for Polish Science in the Polish research funding system. Survey of a nationwide sample of professor title holders

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Study

Over the last 10 years, the system for financing science in Poland has undergone significant changes, which have a fundamental impact on the researchers working conditions and their pursuit of scientific goals. These changes also affect the Foundation's place in the research supporting system. Since the beginning of its existence, the Foundation has been involved in creation of the grant system in Poland. Alongside the State Committee for Scientific Research (KBN) established in the same year, it launched funding of research on the competition principle, on the basis of decisions taken not by politicians or bureaucrats, but by scientists themselves. In line with the principle of promoting the most outstanding scientists and research teams, the Foundation has contributed much effort to the development of competition mechanisms, and particularly the evaluation of applications by independent reviewers. In recent years, along with the establishment of the National Science Centre (NCN) and the National Centre for Research and Development (NCBR), the grant system has become widespread in Poland, becoming the basic mechanism for financing research. Research projects, competitions, and accounting for grants have become a common experience for Polish scientists, jointly contributing to the reform of Polish science and research institutions. The assessment of this system by scientists is an important context for FNP's operations and for the debate over the condition and needs of the research community.

The aim of the study was to analyze the opinions of Polish researchers, represented by persons holding the title of professor, on the topic of the accessibility of research funds and the mechanisms for selection of funded projects. The study has been divided into two sections: (1) one section addressed the assessment of the grant system in Poland, the participation of Polish professors in the system and their experiences in this regard; (2) the other directly addressed perception of the Foundation for Polish Science, its role and operating procedures.

The respondents were scientists holding the title of professor, and thus those at an advanced stage in their career, with significant experience, generally reaching back to the period prior to the reform of science funding. They are responsible for their own research but also for training young

researchers. They are direct grant recipients themselves, conducting their own research, as well as supervisors and mentors to younger researchers, responsible for their growth and their line of research. Their involvement in the grant system has fundamental consequences not only for their own research, but also for the functioning of research teams and institutions.

Key conclusions

Perception of the grant system and opportunities for financing research in Poland

Among the professors surveyed, three-fourths had sought an individual grant within the last 5 years, and 64% of persons who sought such a grant had obtained it. Over a fourth of the respondents who had obtained a grant claim that less than 25% of the applications they submit are successful. On the other hand, a fourth of the participants in the survey (researchers holding the title of professor, up to age 70) had not applied for any grants during the past 5 years.

Over half of the respondents stated that they had sought funds as part of a consortium in the role of a partner and over a third – as the coordinator. A total of one-fourth of all respondents had sought funds from commercial firms. Seeking funds for research consortia (whether as coordinator or as a partner), as well as seeking funds from commercial firms, was declared just as often by persons who had applied for individual grants and those who had not sought such individual grants. But if we consider the effectiveness in raising funds from other sources, it turns out that individual grants were more often obtained by respondents who had also successfully applied for funds for consortia (grants as the coordinators of a consortium). Thus success in obtaining other funds other than individual grants does not limit the initiative or success in seeking individual grants. We are rather dealing with cumulation of funds. The wealth of research budgets clearly grows when the respondents diversify the sources for financing research.

The study reveals a great differentiation in the research community in terms of grant-receiving activity and opinions on the grant system. These differences are tied to a great degree to the field of science and the type of research conducted. Those who do best in the grant system are representatives of the mathematical, physical and chemical sciences and the biological and medical sciences, who more often apply for grants and more often obtain them. Although the percentages of successful applications filed by respondents from specific disciplines do not differ in a statistically significant way, representatives of the mathematical, physical and chemical sciences and biological and medical sciences more often perceive opportunities for financing of ambitious research. They also more often express the view that the availability of funds for research in Poland is not less than abroad. By contrast, representatives of the humanities and social sciences as well as the technical sciences apply for grants less often, less often benefit from grants, less often observe opportunities for financing their research, and more often express the view that the grant system is inadequate to the needs of researchers.

Similar differences are evident between respondents conducting basic research and applied research – those representing applied research rate the availability of funds much worse than the available of funds for research. They more rarely seek and benefit from grants, but the applications they file more often win financing than the applications filed by professors conducting basic research. They more often believe that it is harder to obtain funds for research in Poland than abroad.

Younger professors decisively more favourably evaluate the opportunities for financing ambitious research in Poland. From their perspective, the comparison of the availability of funds for research in Poland and abroad doesn't look as bleak as it does to the older generation.

Grant-receiving initiative and opinions on the grant system are clearly tied to the career dynamics of the professors surveyed. Persons who conquered the successive steps in their career quickly assess much better the availability of research funds in Poland. Although they do not stand out for the size of their budgets or the size of the grants they receive, they more often apply for grants and more often obtain them.

In the study, the respondents' sex seemed not to impact their grant-receiving initiative, the success rate in grant competitions, the size of the grants obtained, or their research budgets. Women also did not differ from men in their assessment of the availability of funds for research in Poland and the opportunities for financing ambitious research. Just as often as men they had been forced to abandon important research projects due to a lack of funds. These are surprising results given the gender imbalance in science. A likely explanation could be that the study concerned professors, while the barriers to scientific advancement of women occur mainly at the earlier career stages (between doctorate and professorship). The percentage of women among professors is indeed lower than men, but those women who do become professors function in the grant system similarly to men.

Despite the differentiation in the experiences and evaluations of the grant system presented by the respondents, the preponderance of negative and critical opinions in the study is notable. The share of negative opinions is greater than would follow from the percentage of respondents who sought grants but whose efforts were unsuccessful (27%). Not only persons who failed to win a grant are critical of the system, but also many of those who succeed in winning grants. Critical comments also prevail among persons who did not apply for grants at all. This is even more telling, as persons who actively seek grants are overrepresented in the study. Just a little over half of the professors surveyed believe that there are opportunities for financing ambitious research in Poland, and nearly three-fourths take the view that it is harder to obtain funds in Poland than abroad.

In the respondents' view, the main weakness of the system is the low level of spending on research. But the respondents also quite critically assess the research funding system as such, including the distribution of funds through grant competitions. These allegations primarily go to the too-low success factor, which means that good projects also lose out.

The integrity of the evaluation of applications also stirs great mistrust among respondents. A system in which scientists themselves decide on the selection of projects for financing, based on the principle of peer review does not meet the respondents' expectations in this regard. For this they largely blame the grant-making institutions, which in their view do not pay adequate attention to the quality of reviews.

In the respondents' view, the evaluation of applications in the Polish grant system relies first and foremost on the publishing history of the applicants, followed by the formal quality of the applications and the formal position of the applicants. Only a little over a third of the respondents believe that the originality and innovativeness of projects plays a great role in the evaluation process.

Agreement prevailed on the view that a good predictor of obtaining a grant is earlier success in this area: grants go to those who won them before. Conversely, if you haven't won grants in the past, you

probably won't win a grant competition now either. The grant system thus resembles a closed circle and, from this perspective, results in exclusion of a large portion of scientists and research centres.

Most of the respondents observed that as the fundamental mechanism for financing science, the grant system marginalizes many valuable studies by promoting certain "fashions" in research topics and techniques. Funds are most eagerly awarded to "hot topics," ignoring less-spectacular research that is nonetheless essential for the systematic growth of science. Conditioning the possibility of conducting research on its consistency with current fashion is decisively perceived as dangerous.

According to the respondents, the system firstly does not "separate the wheat from the chaff," and secondly, is treated in practice as handing out money without real concern for the effects. The respondents complain that the responsibility of grant recipients and grant-making organizations is limited to correct bookkeeping, and there is no real control over the scientific results of the funded research. Supervision of grants should apply to the effects, and not the details at the implementation phase.

Another limitation of the Polish research science funding system is – in their view – its short-term perspective. This deprives Polish scientists of opportunities to participate in long-term projects lasting many years, and hinders them in international cooperation, building teams, and undertaking pioneering research carrying a high risk of failure.

Role and image of FNP

The Foundation for Polish Science is a well-recognized institution among the group surveyed, first and foremost among representatives of the mathematical, physical and chemical sciences and biological/medical sciences. The Foundation's activity is strongly associated with support for young researchers. Moreover, it is ascribed a major role in supporting and recognizing outstanding scientists and outstanding scientific achievements.

Nearly half of the respondents stated that the Foundation has played a major role in the development of the scientific career of someone in their environment, and 71% of respondents said that they recommend (or have recommended) to their advisees and colleagues that they participate in the Foundation's competitions.

According to the respondents, the Foundation stands out among grant-making institutions primarily for its prestige. But when it comes to openness to innovative projects, the amount of funds offered, the quality of the evaluation of applications, the financial conditions, and the thematic range of programmes, the predominant score was "average." Persons who perceive the specific nature of the Foundation's operations in the light of other grant-making institutions in Poland praise FNP primarily for the manner in which it awards funds (e.g. the quality of the reviews). The negative assessments concern excessive formalism at the stage of filing applications, a lack of transparency, and an inadequate appeal procedure.

The assessment of FNP varies according to the respondents' involvement in the Foundation's competitions, and especially the results of the competitions. Laureates of the Foundation rate its functioning much higher than persons who (despite trying) did not win funding from the Foundation. These differences are apparent in the assessment of all aspects of FNP's operations: not only those involved with conducting competitions, but also the amount of funds offered, the financial conditions, the quality and availability of information about FNP's programmes, the role of the

Foundation in the system of support for science, and the impact on the careers of researchers within the respondents' circles. The low success rate in the Foundation's competitions on one hand reinforces its image as an elite institution, but on the other hand generates many disappointments, which in turn impact the perception of various aspects of the Foundation's operation.

Apart from participation in FNP's competitions and the result, a factor differentiating the attractiveness of FNP's competitions is whether the respondent has obtained any individual grant at all. Persons who have obtained an individual grant from any source assess FNP better than persons who have not obtained any such grant. In some instances, the mere fact of applying for grants has a positive impact on the evaluation.

Opinions on the attractiveness of the programmes offered by FNP do not differ by the sex or age of the respondents. They are differentiated, however, by the field of science (with the most favourable ratings coming from representatives of the mathematical, physical and chemical sciences, and the weakest from the technical sciences and the humanities and social sciences) and by the dynamics of the respondents' careers (persons who have quickly conquered successive levels of their academic career rate FNP more favourably).

Respondents who had taken part in FNP contests rated highly (compared to national standards) the quality of the information provided. The degree of complexity of the application and the waiting time for resolution of the competition was rated as average (by national standards). However, low ratings prevailed on the possibility of disputing the findings of the reviewers/panellists. This assessment fell at a similar level when compared to international standards. Significant differences were apparent in the case of the quality of the information provided and the possibility of disputing with the reviewers. In the case of the quality of information provided, FNP compares more favourably against domestic institutions than it does against foreign institutions. In the case of the ability to dispute with the reviewers, the relation was the reverse: FNP compared more favourably against foreign institutions. The assessment of the support provided by FNP at the stage of execution of the funded projects was decisively positive.

FNP laureates from the last 5 years, although constituting only 7% of the group studied, stand out clearly from the overall sample. They are persons relatively quickly earning successive academic degrees and titles, which may be adopted as a surrogate indicator for scientific productivity. They also stand out for their success in winning other grants, including prestigious ERC grants. They primarily represent the mathematical, physical and chemical sciences and basic research.