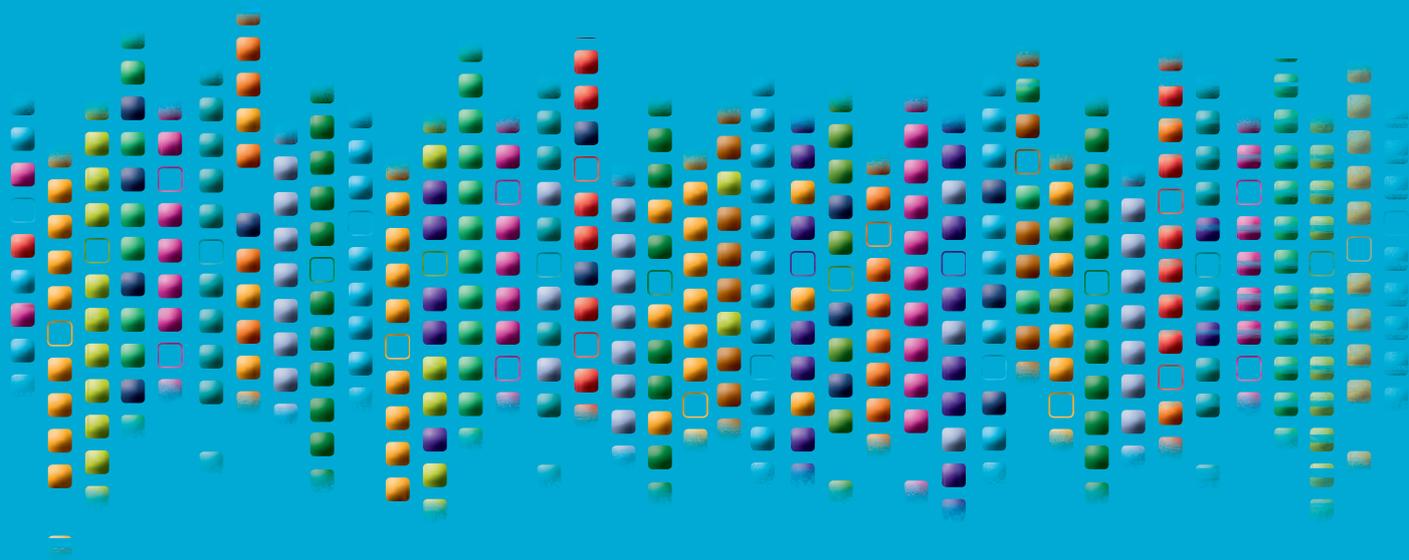




*Foundation  
for Polish Science*

# Scientific success from the perspective of young researchers

Summary of START programme evaluation study



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# SCIENTIFIC SUCCESS FROM THE PERSPECTIVE OF YOUNG RESEARCHERS

## Summary of START programme evaluation study

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Is a research career an attractive proposition for graduates today? The subject of this study is the perception of a scientific career held by people who have recently started one. It was carried out on the beneficiaries of one of the Foundation for Polish Science's programmes – START – young researchers who also have significant scientific accomplishments to their name.

## INFORMATION ABOUT THE PROGRAMME

The START programme, which the Foundation has been running since 1992, is aimed at young researchers at the beginning of their careers who have already achieved successes in their scientific field. The scholarships constitute recognition of their achievements, at the same time offering recipients financial support. According to the premises of the programme, they offer an incentive for further research work and make it possible to fully concentrate on this, without the need for additional earnings. The scholarship is awarded for one year, but can be awarded again for the next year on the basis of a repeated positive evaluation in the competition.

The programme's influence on young scholars' career development, along with their opinions on their prospects in science/academia, were the subject of the study conducted in 2001: *Young Scientist – Programme Evaluation of Foundation for Polish Science National Scholarships*.<sup>1</sup> A decade later, in 2012, we decided to take a renewed look at the situation and the opinions of the programme beneficiaries. The main questions were:

- Do they still work in science, and what are the conditions they set for continuing research work?
- How do they see their future in science – what aspirations and what fears do they have?
- How do they perceive their community and the determinants of success?
- What is their view of the usefulness of a START scholarship?
- How do they perceive the Foundation, and what expectations do they have of it?

The study was anonymous. In order to compare its results with those from the 2001 study, the survey contained several questions from the previous study. There were also many new questions, corresponding to the FNP's current evaluation needs. Both closed-ended and open-ended questions were asked. This made it possible to collect opinions beyond the outline suggested by the Foundation, and also added a qualitative dimension to the study.

Since we were interested in the perspective of young researchers, the survey was sent to beneficiaries from the 2008-2012 rounds. In this time, the START scholarship was awarded a total of 627 times. Some 111 people received the scholarship twice, meaning that the number of scholarship-recipients was 516. Emails were sent to all these people with a link to the online survey, in the knowledge that some addresses from several years ago would be out of date. We received 221 replies, giving a 43% response rate. The highest proportion of respondents were from exact sciences – 31%. A similar share (approx. one quarter) came from the humanities and social sciences as well as natural and medical sciences. The smallest representation was from technical sciences.

<sup>1</sup> Numerous authors, ed. Elżbieta Getka-Wilczynska. Szkoła Główna Handlowa 2002

## RESPONDENTS' CURRENT SITUATION

At 14% of the sample, doctoral students are most numerous among 2012 scholarship-recipients, with this percentage decreasing steadily the earlier the round. The largest number of respondents, some 81%, at present hold doctoral degrees. The smallest group (only featuring in the 2008 and 2009 rounds) are those with habilitation degrees (5%). Women constituted 38% of respondents, which approximately corresponded to the percentage of women among beneficiaries (40%). Almost half (47%) of respondents have at least one child (50% of men and 42% of women), and a quarter have two or more children (20% women and 21% men). Almost all respondents live alone or with their spouse/partner. Only 2% of respondents live “with parents”. Significantly, 76% live with their spouse/partner (some also with children). The proportion of people living with their spouse/partner is somewhat higher among men (81%) than women (75%).

## CONTINUATION OF RESEARCH WORK

As the objective defined when the START programme began was to encourage young people at the outset of their research careers to devote themselves to research work, we can view as an undoubted success the fact that 97% of respondents are still working in a research/scientific institution (although more people who do not continue scientific career can probably be found among those who did not answer the survey). Both people continuing their research work and those who have left it express satisfaction at undertaking it. The great majority – 65% of respondents – now rate their decision to choose research work as *definitely good*, and 25% as *rather good*.

Assessment of the decision to undertake research work does not seem to depend on the gender of respondents or their academic field. However, its connection to the current academic degree is evident. Among doctoral students, 64% of people believe this to have been a good decision, whereas among habilitated doctors the figure is 90%. Some 13% of doctoral students state that they are not sure whether this was the right decision, while there were no such answers among doctors with a habilitation degree (the figure was 9% for people with a doctorate).

The declarations of respondents regarding their further plans showed their satisfaction with commencing a scientific career: 60% of programme beneficiaries said that they definitely want to continue in this line of work, and 30% that they want to, but do not rule out other possibilities. Only sporadically did respondents mention the possibility of quitting the field. Respondents with a habilitation are the most certain that they want to stay on this career path, and doctoral students the least.

In response to the (open-ended) question of what factors influenced continuing in science, the most commonly cited conditions were:

### Salary

The majority employ the criterion of sufficient money to satisfy basic needs (*“a salary making it possible to stay at a minimum level”*). For many respondents – especially men – the challenge is to support not just themselves, but also a (growing) family.

### Employment

The respondents perceive this as rather uncertain. For some of them, the decision to remain in the research field depended on working at the same institution, and for others on being employed in “good” teams and institutions. Whereas some people see their future employment as extended or new contracts, for very many a condition of continued research work is a permanent job with a sense of stability and security.

## Acquisition of research grants / scientific advance, development and leading one's own team

On the one hand, grants are a guarantee of work and income (*"My position at the university is funded 100% by research grants"*), and on the other they mean realisation of research (*"[without grants] at work I'm given a pencil and a starvation wage, which for a biologist is insufficient for any experimental work"*). Grants are also a condition for forming a research group.

At the same time, only 14 (out of 215) respondents would encourage graduates considering a career in research to choose this option. Many of them decidedly counsel against such work. The main negatives of research work are low earnings and unstable work, making it difficult to start a family.

## WORKING IN POLAND OR ABROAD?

The most important advice for people who choose scientific work – regardless of the field – is to go abroad: for a doctorate, for a postdoc or for good. Many recipients of scholarships recommend going abroad for doctoral studies, arguing that a doctorate acquired abroad increases one's chances of participation in prestigious research, makes it easier to continue research work abroad, and also accords prestige which is useful in Poland. If not a doctorate, then at least a postdoc abroad is a must. Such a stay is necessary for encountering the "real science" that is lacking in Poland. Limiting one's perspective to work in Poland brings the threat of routine and stupor, dependence on networks and "who you know", and a considerable reduction of research possibilities. While the majority of respondents stress the usefulness of a foreign doctorate or postdoc for further research work in Poland, some of them even state that when seriously planning a research career one must move abroad – away from Poland it is easier to pursue ambitious research and one can expect higher earnings. This is why some respondents believe that those seeking a career in research should consider going away at the outset.

Most of the respondents themselves go for postdocs abroad, but when asked if they prefer to work in Poland or abroad, over half choose the former. Less than 15% prefer work abroad. The main justifications for the desire to work abroad are better financial conditions, better opportunities for forming international teams, a higher scientific level, better infrastructure, and a smaller bureaucratic and teaching burden. The leading arguments in favour of working in Poland are family concerns and attachment to the country as well as concern for partners' work (a factor that restricts both women and men). Living conditions are particularly stressed, e.g. possessing a home and the ensuing mortgage, which makes it harder to make changes in life. There are also some – albeit not many – indications of good working conditions in Poland (*"since there are increasing opportunities for carrying out research and the chance for a decent salary here": "I have a permanent job here and access to funds for research, so I don't see any reason to work abroad"*). A desirable solution seems to be combining work in Poland with work abroad. Respondents' preferences for working in Poland or abroad are not dependent on either their field or their gender.

According to the respondents, a further condition for achieving scientific success in Poland, on top of the aforementioned stint abroad, is starting research work early in a very good team. They are aware that the quality of the team in which a young person begins his/her research career is to a great extent instrumental in its further course. The next condition is a well-considered strategy for publication of articles (in prestigious and highly-cited journals) as well as active searching for grants.

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## RESEARCH FUNDS

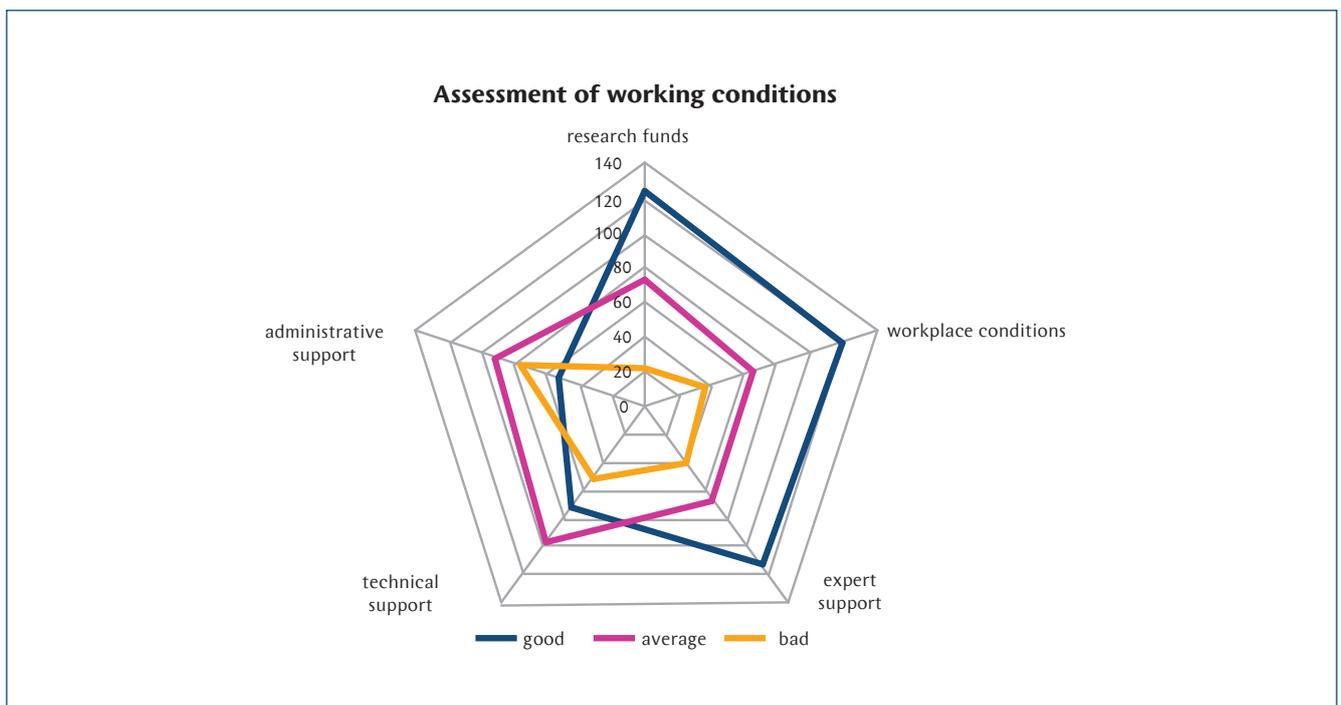
As in 2001, scholarship-recipients were asked to point to some of the major obstacles in research work, and then to select the most important one. Whereas 11 years ago the greatest impediment in research work was *lack of funds for research, literature and other essential expenses*, this time this issue was a much less popular choice. At the same time, most (77%) respondents to the current study believe that in Poland funding possibilities for ambitious research are available, and 68% state that in their field research is funded from international sources.

Only 7 out of 215 people (including beneficiaries of the most recent rounds of the programme) admit to not having made any grant applications, and 85% of respondents continuing research work declare that in the last two years they have received funding in the form of grants and scholarships. The programme beneficiaries themselves credit their successes in gaining funding to a large degree to the START scholarship, which – in line with the Foundation’s premises – has given them financial comfort and enabled them to concentrate on their research. Many respondents also point to the prestige of the scholarship, which proved an asset in the search for further employment or advancement at work or for external funding.

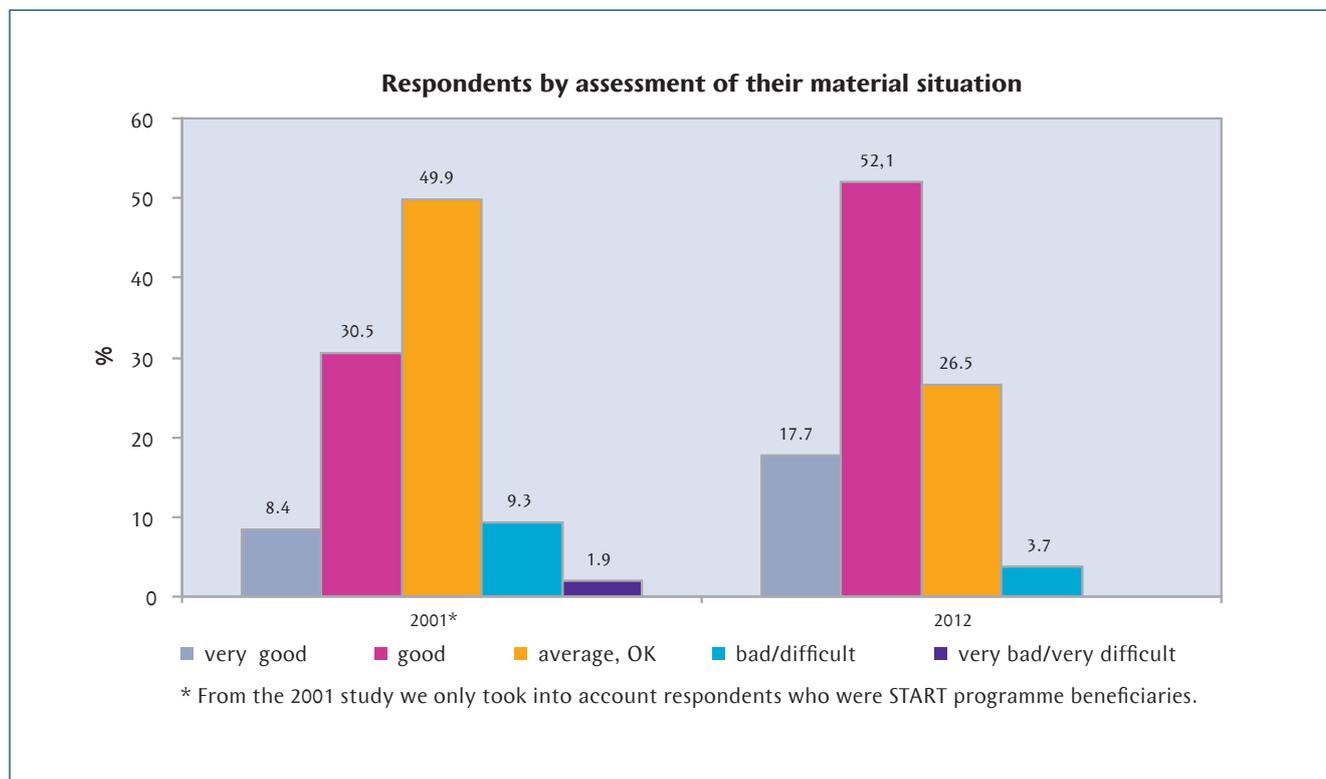
The respondents claimed that the leverage effect was all the more effective as in Poland at present there is a lack of funds for research. Here too, there is a clear difference between the responses from 2001 and 2012 – whereas in 2001 the deficit of funds for research was highlighted as one of the main obstacles in research work, today it is no longer perceived as such. It seems important that in respondents’ statements the concepts of “results”, “grants”, “publications” and “research” are mentioned almost in one breath, and the quality of research correlates with the amount of earnings (“*good scientists have a chance for high earnings*”).

## WORKING CONDITIONS

The main obstacles in research work listed by respondents are *an excess of bureaucracy; teaching overload* as well as *non-merit-based criteria for advancement and low earnings*. Most of them describe research funds, workplace conditions and expert support as good. Their assessment of administrative and technical support is considerably worse.



In their assessment of their own income too, respondents showed considerably greater satisfaction than one might expect from their responses on the situation of scientists in general. Sixty-nine percent of respondents describe their own material situation as good or very good. Nobody gave the answer “very bad”. Some of the respondents are still receiving a START scholarship, but this is a very small proportion. A large majority of respondents are benefiting from other scholarships and grants. In comparison to 2001, scholarship-recipients’ level of satisfaction with their material situation had increased markedly. The respondents’ declared net income had also grown significantly in comparison with the 2001 study.



The respondents clearly indicated that their income is uncertain, but at the same time they showed moderate optimism in this matter. Around a quarter of participants definitely expect higher earnings in research work. A very small group (3%) fear for their and their family’s financial future. However, 14% count on income from other sources, including those outside of science, which illustrates the fears for the standard of living based exclusively on earnings from research.

The ambivalence in assessment of the earnings of academics can be seen in the spread of responses to the general questions on payment in science. The vast majority (82%) of all respondents are of the opinion that “*low earnings are the reason why many talented people leave science or go abroad*”. At the same time, almost as many people state that “*good scientists have chances of good earnings from research work*” (76%) and that “*the pay received in science is enough to satisfy basic needs*” (68%). The opinion that “*a career in science does not mean abandoning financial and material aspirations*” slightly prevails over the converse opinion.

Such a spread of answers leads to the conclusion that the respondents clearly differentiate earnings in science. Scientists are not treated as a homogenous group – they include people who are paid highly and those who earn very little. The respondents themselves often attain a relatively high income, but, as they point out, this tends to result from energetic efforts in acquisition of funds. Without these efforts, and significant research achievements, income limited to a basic doctoral scholarship or the wages of a lecturer is very low.

## CAUSE AND EFFECT

The income, working conditions and ambitions declared by the respondents do not show the situation of all, or even the majority of young scientists in Poland. The study was on a specific group of people who at the start of their careers received a scholarship that considerably improved their living and professional situation both directly and indirectly (making further successes possible).

In this context, we should bear in mind the results of the 2001 study, which demonstrated that START programme beneficiaries on average receive a higher income than the remaining groups – other respondents received an average of 80-84% of the income of scholarship-recipients. In terms of living conditions and their financial state too, beneficiaries were in the most favourable situation.

A comparison of the career dynamics and commitment to research work from 2001 also clearly comes out in favour of the scholarship-recipients (*vis-à-vis* the control groups). The authors of the study conclude that scholarships were awarded to people predestined for research work. At the same time, they point out that the measures used for publications (number of publications) reveal a sudden growth after the scholarship – the annual total number of publications per person increases 2.3 times, and the number of publications abroad 2.2 times. This growth in turn suggests a significant influence of the scholarship on the beneficiaries' scientific activity.

An analysis of the career dynamics of START programme beneficiaries from 2000-2001 performed in 2010<sup>2</sup> showed one more factor that distinguished recipients of FNP scholarships from other competition participants: both programme beneficiaries and unsuccessful competition applicants acquire the successive academic degrees (doctorate, habilitation) at a much faster rate than the average academic in Poland. A characteristic of both groups (beneficiaries and candidates) is active searching for funding, a previous academic output and readiness to participate in a competition characterised by a very low success ratio.

## THE SIGNIFICANCE OF A SCHOLARSHIP

Respondents are in agreement in their high assessment of the usefulness of a scholarship. For the great majority, this meant for them above all an improved financial status.

The low rate of doctoral scholarships and pay for lecturers come at the stage at which young researchers are making themselves economically independent: they wish to move out of their parents' home and busy a home. Many start a family and try to combine employment with parenthood. Their responses showed that a scholarship made this stage of life much easier, permitting further research work. Particularly in the case of male respondents, an important result of the scholarship was money for supporting their families. The improvement in finances has a direct influence on their scientific work. A few (male) respondents wrote that without having the scholarship to allow them to support their families, they would have left their jobs in science. The responses of women included the argument that the scholarship had allowed them to afford childcare, thus permitting a return to research work. Male respondents also appreciated the funds that could be used for this purpose. For a great many people, financial support means the opportunity to stop working elsewhere to make ends meet, which, they stress, directly translates into greater commitment to their research.

Around a quarter of respondents emphasise that for them the scholarship was an important expression of recognition. Indeed, prestige was what many people identified as the most important effect of the scholarship (*"Prestige and recognition of the community"*). Prestige meant not only momentary satisfaction, but also measurable benefits – e.g. gaining employment or consolidating one's position in the workplace, or receiving further scholarships/grants. For many people, a START scholarship is "good on a CV". The respondents also speak quite often about the

<sup>2</sup> *The Research Careers of START Programme Participants from 2000 and 2001*, January 2011, [http://www.fnp.org.pl/files/Ewaluacja/START\\_raport\\_2011.pdf](http://www.fnp.org.pl/files/Ewaluacja/START_raport_2011.pdf).

psychological effect of the scholarship – increasing the motivation for further hard work. For many people, success in a START competition was a direct incentive for applying for further scholarships and grants. Intensive research work, good publications, participation in projects or pursuing one's own projects work as a snowball effect. It is crucial to receive support at the right moment. One respondent stated that for him the scholarship had come too late, as it was no longer "*quite so necessary*".

