

## Summary

### Programme description

The Sofja Kovalevskaja Award, funded by the Federal Ministry of Education and Research and granted by the Alexander von Humboldt Foundation, recognises the outstanding academic achievements of particularly promising junior researchers from abroad. The award is designed to open doors to a research career in Germany by enabling the recipients to build up their own junior research groups in Germany. The programme is open to all academic disciplines and research directions, addressing junior researchers who completed their doctorates within the previous six years. Applications may be submitted by candidates from all countries. Under the current version of the programme, award winners can be granted up to EUR 1.65 million over a period of five years to conduct an approved research project of their own choosing. They are selected solely on the basis of their academic performance. The decision to grant the award and the amount of funding is taken on the basis of independent peer reviews by the Alexander von Humboldt Foundation's cross-disciplinary committee responsible for granting awards. The overarching objective of the programme is to internationalise German research; the aims of the programme are to facilitate a high-ranking, international research project, early independence as a junior research group leader and entrance into an academic career in Germany. The programme also aligns with the Foundation's strategic focus on uniting outstanding researchers in a lifelong network of excellence by sponsoring individuals.

### Evaluation mission

In March 2015, Technopolis was contracted to evaluate the SK Programme focusing on the experiences, output and impact of sponsorship amongst the 2001-2012 cohorts of 90 award winners. For these cohorts, total funding of EUR 100 million was approved.

The evaluation sought to concentrate on the following impact levels:

- the impact of the programme on the host institute and host institution
- the impact on the award winners' careers
- the impact on long-term, sustainable networking and internationalisation
- developments across the cohorts

as well as two additional dimensions: the institutional perspective, including the institutions' political/strategic planning processes with regard to staffing and research fields; the institutions' role in the award winners' career development.

### Evaluation methods

Information was collected in four work packages by combining several quantitative and qualitative methods: Work Package 1 investigated the wider world of relevance to the SK Programme, which defines the significance of the programme – not least for the award winners. Work Package 2 focussed both on the role of the institutions in the development of award winners' careers and the impact of the programme on the host institutions. Work Package 3 concentrated on the award winners: their motivation, experiences and career paths. Work Package 4 focussed on bibliometric analyses.

The qualitative methods comprised document and literature searches, interviews with those responsible for the programme and stakeholders, a workshop with representatives of the host institutions' leadership and administration, as well as the core survey evaluation method of on-site visits to a total of four locations (Berlin/Potsdam, Konstanz, Bonn and Cologne) where we spoke to award winners, hosts and representatives of the leadership and administration at faculty and university level.

The quantitative methods comprised an analysis of the Humboldt Foundation's data base for the 2001-2012 cohorts, complemented by online searches to determine the current position and whereabouts of the award winners after their sponsorship. Moreover, a comprehensive online survey of all award winners was conducted. With a return rate of 80 per cent, this generated a firm basis for evaluating the programme. Finally, bibliometric studies were carried out to assess the visibility of award winners' publications, particularly their international networks, in comparison with the publications of their specialist colleagues in Germany.

## Results

1. The Sofja Kovalevskaja Award allows award winners to conduct research under very good to ideal conditions and to build up a research group. Since 2001, 90 SK award winners have received sponsorship totalling EUR 97 million to build up a research group in Germany and to conduct top-level, innovative research of their own choosing largely free of administrative constraints. This is the purpose of the award and it has been achieved to a very great extent. The award winners enjoy(ed) a high degree of autonomy. The programme is characterised by extensive, need-based flexibility.

2. Sofja Kovalevskaja award winners achieve above average success in academia and maintain international networks. Across all disciplines, the bibliometric studies reveal that SK award winners' publications enjoy significantly greater visibility than the average for publications produced in the same areas by researchers in Germany: 33 per cent of SK award winners' publications cited in the Web of Science fall into the top ten per cent for visibility (worldwide). Within this top ten per cent segment, SK award winners publish significantly more internationally than their peers in Germany. The survey of alumni's professional status reveals that SK award winners usually choose academic careers; the majority are professors and nearly all hold tenured positions. Due to the amount of funding, the degree of independence and the fact of being selected, SKP sponsorship plays a central, often decisive role. Thus the programme fulfils its objective of helping SK award winners to take a significant, often crucial step towards a career in academia.

3. The degree to which Sofja Kovalevskaja award winners become integrated in their host institutes reflects the culture at the institute, whereby the generous provisions and flexibility of the award underpin the positive course. Award winners are very autonomous; together with the flexibility of the programme, this is a fact that is highly appreciated by award winners and the administration at the respective organisations alike. Over time, central issues, such as whether award winners have the right to supervise doctoral candidates, have been addressed. The integration of award winners takes various forms, largely depending on the immediate climate in the respective host institute or department, the host's engagement and the collaborative structures already in existence at the institutions.

4. In most cases, host institutions do not commit to integrating award winners long term during the sponsorship phase, nor is it expected of them. Integration can also be understood to mean creating prospects for further career steps at the institution (or in Germany). Do the host institutions see the SK award as an opportunity to recruit highly-qualified researchers for the long term at an early stage by offering career prospects at the institution itself? If this implies a long-term relationship, the answer to this question has to be no; in systemic terms, such a relationship is neither foreseen by the Alexander von Humboldt Foundation nor by the host institutions. Rather, both university managements and the Alexander von Humboldt Foundation emphasise the fact that the absence of such a system is a welcome and conscious expression of freedom in a bureaucratic system of higher education in Germany. Are, on the other hand, the award winners interested in remaining at the host institution/in Germany or do they consider the several years they spend there as a stepping stone on the way to a career elsewhere? The answer to this question is yes and no; their motivation depends not least on their experience of Germany during the sponsorship period. Sustainable integration of award winners is thus not a structural facet of the programme. The programme is open to such integration but makes no explicit stipulations and does not formulate objectives with regard to award winners remaining at the host institution and/or in Germany when the sponsorship period comes to an end. At the same time, it should be noted that just over a quarter (27%) of those sponsored remain at the host institution whilst other alumni remain at other institutions in Germany.

5. Researchers returning to Germany and researchers from abroad are effectively different target groups with different motivation, selection success and career histories. The candidates for a SK award came from more than 60 countries; the award winners from 31 countries; less than half came from their country of nationality. The programme is therefore very international. Amongst the candidates, however, noticeable differences can be observed with regard to previous experience of Germany and (personal) relationship with Germany which influence applicants' behaviour and further career steps. There is one group of applicants, for example, who had already received sponsorship from the Humboldt Foundation, usually a Humboldt Research Fellowship for a postdoctoral position in Germany. A second group is composed of German researchers returning to Germany. It is noticeable that the success rate in this group is significantly above average: amongst German nationals it is 29 per cent, almost twice the figure for "real" foreigners (15%). A third group comprises these "real" foreigners who have no previous experience of Germany and are more interested in the German research landscape than Germany as the centre of their lives. This group more often needs advice on building their groups and positioning themselves at the host institution and, in the majority of cases, returns abroad at the end of the sponsorship period. Differences that are already relevant in the application phase thus continue to influence award winners' integration and therefore also programme performance. They only play a very marginal role, however, in programme design.

6. In most cases, German nationals stay in Germany when sponsorship comes to an end whilst two-thirds of foreign award winners return abroad. Of the 62 alumni, 30 now live in Germany. Although, with one exception, all the award winners of German descent have remained in Germany, this is only true for one of three alumni of other nationalities. Almost half of alumni of other nationalities returned to their own countries, 18 per cent transferred to a third country, every third person remained in Germany. The outcomes of the survey show that there is definitely still untapped potential for award winners to remain: a third of the alumni abroad surveyed would have been interested in staying on in Germany but had not received an offer to do so.

7. Long-term cooperation and networking with Germany is more effective if award winners remain in the country. From the point of view of the award winners,

the expected impact is to maintain long-term academic contacts with Germany and to collaborate with German colleagues. On top of this, there is the expectation that award winners abroad will boost the reputation of Germany as a research location as a result of their good experiences and act as a role model for other prospective applicants, thus indirectly driving internationalisation. The empirical evidence acquired in this survey demonstrates that the level of internationalisation is significantly higher when alumni continue their careers in Germany, both in terms of publications and the sustainable continuation of (usually international) research groups.

8. Lessons to be learnt by universities. In response to the question as to whether and to what extent positive developments and learning effects (best-practice examples) are recognisable in implementing the programme at the host institutions, the survey reveals that the programme's inherent potential for learning effects at the institutions is only exploited to a limited extent. Whilst definite developments can be seen in universities' consciousness of issues like internationalisation and junior researchers' careers, there are no indications in the survey to suggest that the SK Programme itself plays a crucial role in this respect. The satisfaction expressed by the universities and the Foundation with a constellation, which demands very little from the host institutions, is only shared to a very limited extent by the evaluators. Even if flexibility is a value in itself, in terms of the evaluation topic "internationalisation", this underlying fact is a danger signal with regard to Germany's international competitiveness as a research location. Given the very low proportion of foreign professors in Germany – in 2013, the figure was 6.4 per cent – the challenge of recruiting top foreign researchers on a sustainable basis would seem to be even greater than international networking with top researchers abroad. To what extent this means a more powerful incentive for the Foundation to induce universities to move towards relevant career recruiting and international recruiting models is not clear.

## Recommendations

With the following recommendations we support the continuation of the Sofja Kovalevskaja Programme, which is a highly attractive tool for promoting the internationalisation of research in Germany. We do, however, see potential for increasing its impact.

1. An explicit commitment to the programme's objective of recruiting award winners for a long-term career in Germany. In respect of collaborative publications and the continuation of established research groups, the outcomes of the evaluation show that the sustainable impact of SK sponsorship on the internationalisation of research in Germany is greater when award winners do not only start their careers but also continue them in Germany. Apart from this, another major challenge is to internationalise the German research landscape by appointing foreign professors on a sustainable basis. Given the generosity of the sponsorship in the framework of the SK Programme and the concomitant chance to integrate researchers in Germany, we recommend re-thinking the formulation of the objectives and the desired impact of the programme and placing greater weight on sustainably integrating foreign researchers in Germany.

2. In line with other organisations, the SK Programme has the potential to become a tool for modernising German career models with the aim of opening up to the world. The small proportion of foreign professors on the one hand and the frequently-mentioned difficulties amongst German universities to offer promising, top young researchers career prospects on the other, are behind the recommendation to use the experiences gained from the SK Programme to participate more actively in the German reform debate on recruiting outstanding talents and introducing modern career models like a tenure track system. Building on the experience of the Alexander von Humboldt Professorship, alternatives should be sought to the current sponsorship conditions in the SK Programme which do not at present include a mechanism for host institutions to enter negotiations on longer-term career options for award winners.

In this way, the SK Programme could ally with other public and private funding organisations to become a motor for change with the potential to sustainably enhance the international appeal of the German research landscape.

3. Consideration of award winners' long-term prospects in the selection procedure. The implementation of re-weighting the programme goals in favour of sustainably integrating award winners in Germany could be supported by modifications to the selection procedure. In this connection, the evaluation suggests choosing an appropriate time to specifically target the universities, to address them directly and to make more stringent demands on them. First of all, consideration could be given to only granting sponsorship if a long-term career option is opened up (such as tenure track with transition from fixed term to permanent contract after 3-4 years following evaluation). The institutional aspects should already be taken into account during the selection procedure.

4. Greater promotional activities and designated responsibility for the programme's public image. The pool of potential applicants, and therefore talents, for the German research landscape could be extended by additional promotional activities. To this end, it would be expedient not only to address possible candidates but especially universities and their management which, so far, are hardly aware of the potential of this sponsorship. Furthermore, potential female hosts could also be targeted – today, the proportion of female hosts is only half as large as the proportion amongst C4 professors in Germany. The change that has already taken place to publish calls annually benefits this kind of marketing because it increases awareness of the programme and consolidates expectations. In the evaluators' opinion, information measures could essentially be directed at universities as there are sound arguments for using SK funding for university research and linking it with the relevant incentive for change. As this measure includes strategic aspects, we think it would be helpful to nominate one person as a contact across all phases of the programme who, if necessary, would also coordinate such programme reforms.

5. Need-based coaching and general clarification of issues relating to award winners' salaries, the acquisition of third-party funding and teaching. Depending on whether award winners are familiar with the German research landscape, have already headed research groups abroad and speak German, it is easier or harder for them to integrate at the host institute. The interviews reveal that some award winners have additional needs such as coaching, particularly on issues like their salary (including negotiating) and career planning in Germany. The evaluation therefore recommends either offering or actively mediating need-based, individual coaching if this can be financed through the administrative lump sum. The flexibility in the use of funds means that the Alexander von Humboldt Foundation imposes very few stipulations on its award winners. Nevertheless, in the course of conversations with award winners, it emerged that they perceive and interpret "rules" differently. This is particularly true of award winners' engagement in teaching and acquiring third-party funding, on the assumption that the award is designed to ensure that they can spend 100 per cent of their time on research. For this purpose, a section of FAQs on potential engagement in teaching could be helpful (they already exist in respect of third-party funding acquisition) as well as written illustrations of award winners' concrete experiences.

## **Evaluation of the Sofja Kovalevskaja Award: Statement by the Academic Council on the Evaluation Report**

The Academic Council recommends acceptance of the Evaluation Report, welcomes the evaluators' very positive overall assessment and makes the following comments:

### **Continuation of the programme**

With regard to achieving the programme goals – particularly those of promoting individual excellence by enabling outstanding junior researchers to start their careers in Germany, of building international research groups at German research institutions, of sustainably networking award winners in the international arena and of enhancing the international research profile of the host institution – the evaluation produced very positive outcomes.

The results of the evaluation confirm that the success of the award winners' academic performance is above average and that they are internationally connected. Under very good conditions, they conduct high-level, innovative research of their own choice and build international research groups. Most of the award winners are well-integrated at their host institutions, enjoy a high degree of autonomy and are authorised to supervise doctoral candidates. When sponsorship comes to an end, the majority of award winners are appointed to professorships, in nearly all cases with tenure.

These goals and results generate an impact that strengthens the internationalisation of German research.

### **The goal of internationalisation**

The evaluators ascertain, however, that only just under half of the award winners remain in Germany after the sponsorship period and that two-thirds of the alumni of foreign nationality, in particular, return abroad. With regard to enhancing the internationalisation of German research, this means untapped potential. They therefore recommend to rethink the formulation of goals and the envisaged impact of the Sofja Kovalevskaja Programme and to place greater emphasis on sustainably integrating the foreign academics in Germany.

The Council does not consider it necessary to alter the formulation of goals as strengthening internationalisation, particularly by maintaining long-term scientific contacts between award winners and Germany as well as by conducting research collaborations with German researchers, is largely achieved. The Council adds that, thanks to their positive experiences, the award winners abroad strengthen the reputation of Germany as a research location, act

as role models for prospective successors and thus indirectly contribute to internationalising the German research location. This aspect was not investigated in detail in the context of the evaluation.

From the point of view of the Academic Council, the Sofja Kovalevskaja Award should be continued on the basis of the existing goals. The Council recommends examining the impact of award winners who have returned abroad on promoting the internationalisation of German research as one subject of the next evaluation.

### **Retaining award winners in Germany long term**

In order to ensure that award winners continue their careers in Germany after the sponsorship period, the evaluators recommend integrating measures such as tenure track in the funding specifications or creating other incentives for sparking negotiations with the host institutions on offering award winners longer-term career options.

The Council does not concur with the recommendation made by Technopolis to include mandatory tenure track in the funding specifications as this would have exclusionary effects. Smaller universities and non-university research institutions, niche subjects and non-mainstream research areas would possibly not be able to offer a tenure track option because of the long-term financial implications and would therefore be excluded from the programme.

The Council does, however, consider it meaningful to create incentive systems to enable award winners to continue their careers in Germany on a permanent basis without impinging on the flexibility of the programme. One suggestion for an incentive system could be to propose that the existing host institutions receive a financial bonus if they offer award winners an extended or tenured appointment. In contrast to the mandatory tenure track option, this discretionary offer would not encroach on the flexibility of the programme.

A further way of supporting award winners in building a long-term career in Germany could be for the Humboldt Foundation, advisory services at universities and individual established professors to provide coaching, mentoring/patronage and networking. Advisory services could include tips on applying for positions, guidance on application processes at German universities as well as information on important peers, conferences or suggested themes for conference papers. Service-oriented career guidance could also be an attractive offer for award winners.

### **Selection procedure**

The Council does not concur with the recommendation to introduce mandatory options to retain the award winners at their host institutions (tenure track) into the award programme

and thus sees no need for action with regard to adapting the selection procedure to take greater account of institutional aspects by involving the hosts.

### **Advertising campaign and public relations activities**

The Council seconds the evaluators' opinion that it would be desirable to extend the pool of potential applicants and hosts – particularly female hosts – and that this should be actively pursued by expanding the promotion of the programme. It can be assumed that the fact that an annual call was introduced in 2015 will mean that the Sofja Kovalevskaja Award will automatically gain visibility and become increasingly important to universities in strategic terms.

### **Needs-based coaching and general advice**

In order to make it easier for award winners who are not familiar with the German research landscape to integrate at the host institution and embark on a career in Germany, the Council, in agreement with the evaluators, recommends investigating ways of offering award winners needs-based, individualised advice even before the sponsorship period begins.