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Citation

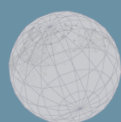
Mom, C., Sandström, U., & Besselaar, P. van den. (2018). Does cronyism affect grant application success? The role of organizational proximity. *Sti 2018 Conference Proceedings*, 1579-1585. Retrieved from <https://hdl.handle.net/1887/65246>

Version: Not Applicable (or Unknown)

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Downloaded from: <https://hdl.handle.net/1887/65246>

Note: To cite this publication please use the final published version (if applicable).



STI 2018 Leiden

23rd International Conference on Science and Technology Indicators
"Science, Technology and Innovation Indicators in Transition"

STI 2018 Conference Proceedings

Proceedings of the 23rd International Conference on Science and Technology Indicators

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The articles of this collection can be accessed at <https://hdl.handle.net/1887/64521>

ISBN: 978-90-9031204-0

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Does cronyism affect grant application success? The role of organizational proximity

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Abstract: Nepotism or cronyism is an important issue, as the expectation is that grants are given to the best researchers, and not to applicants that are socially, organizationally, or topic-wise near the decision-makers. We investigate the effect of organizational proximity (defined as the applicant having the same current and/or future institutional affiliation as one of the panel members) on the probability of getting a grant. We start with analyzing various aspects of this form of cronyism: Who gains from it? Does it have a gender dimension? Can it be explained by performance differences between applicants or between organizations? We do find that the probability to get funded increases significantly for those that have a near-by panelist from the host institution. At the same time, the effect differs between disciplines and countries, and men profit more of it than women do.

Keywords: Nepotism; cronyism; proximity; grant selection; peer review; research funding; European Research Council; ERC; starting grant.

Introduction

There has been a long discussion about bias in peer review and grant selection, starting the latest with the paper of Wennerås and Wold [1] on sexism and nepotism in peer review. In this paper, we focus on nepotism and cronyism related to *organizational proximity*. It is generally accepted that when a panel member is in the same organization as the applicant there is a conflict of interests and the panelist or reviewer has to leave the room when the application is discussed. We assume that this happens, but that does not necessarily guarantee that organizational proximity has no effect.

The Wennerås and Wold study [1] has been replicated by Sandström & Hällsten [2], who found a similar strong nepotism effect as ten years earlier. In a "normal" situation an applicant with otherwise average scores from reviewers would have been lifted to the group of granted applicants if he (most often a male person) had an in some way affiliated reviewer in the panel. Relatedly, Van den Besselaar [3] showed that being part of the inner circle of a council is beneficial for the number of grants compared to those that are more at a distance. Later, the

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same results were found in a study based in South Korea [4] that evaluators have “a tendency to give relatively high scores to research proposals submitted by the alumni of the same universities as their alma mater”. Therefore, these few available studies bring about the most feared picture of the scientific enterprise from the point of view of the Mertonian social study of science: that irrelevant factors like network connections do determine rewards and that nepotism and cronyism play a significant role in careers [5].

In this paper we investigate the effect of organizational proximity on the success of grant applications, as an example of one of the many proximity relations that can exist between applicants on the one hand and peer reviewers and panel members on the other. The case is one of the most important grant schemes that currently exist, and with overall excellent scientists as panel members [6]. One would expect that if we find nepotism even here, it may exist everywhere.

Data and method

Organizational proximity exists when an applicant and a panelist belong to the same organization: An applicant either works at the same institute as one of the panelists, or plans to use the grant in an institute where one of the panelists works. We define an institute as a university or a national research institute like MPI, CNRS, CNR, CSIC, KNAW, etc. This leads to the problem of double affiliations. We decided to use the main affiliation as used by the persons involved (in their application or website). Another problem is the changing of organizational boundaries, e.g., as in university mergers (e.g., in Paris). Here we tried to reconstruct the boundaries as they were in 2013.

Applicants have to specify where they plan to use the grant: the so-called *host-institution*. This may be the same as their current affiliation (the so-called *home institution*), which is often but that is not necessarily the case. So one can distinguish several forms of *nearby panelist*:

- no nearby panelists (proximity 0)
- a panelist can be from the home institution of the applicant (proximity 1)
- a panelist can be from the applicant's host institution (proximity 2)
- a panelist can be from the home *and* host institution of the applicant (proximity 3)

For the analysis we combine proximity 2 and proximity 3, because the proximity 2 group is very small. The proximity 1 is somewhat larger than the proximity 2 group, but we keep that one separately: we assume that organizational proximity works different when leaving an organization (prox-1) compared to coming to an organization (prox-2 and 3).²

We have excluded from the analysis a group of 114 applicants that reside in a non-ERC country at the moment of application, as this group has to select a host institution in a different country. This changes the meaning of proximity, and these applicants hardly show proximity. In the rest of the paper we distinguish prox-0, prox-1 and prox-2, the latter is proximities 2 and 3 taken together. We also exclude those countries that do not have any proximity relations in our sample (e.g., because of their size). If there are no proximity relations then the question of the effect of proximity relations makes no sense. The same holds for countries that have 0 or 1 successful application as host.

² Proximity 2 behaves similar to proximity 3, as our tests shows.

Findings

We combine success rates with the proximity data on the applicants, and then answer the following questions:

- (i) Is the success rate different for the different forms of organizational proximity?
- (ii) Show the three domains (Life Sciences, Physics and Engineering, Social sciences and humanities) the same pattern? If not, why?
- (iii) Who profits from proximity? This will be done at the individual level (in terms of gender differences) and on the level of countries.
- (iv) Can we explain these different success rates also in other terms than proximity: are those persons, countries and organizations that win most from proximity better, and therefore delivering more panelists and attracting more applicants?

Obviously there is a proximity effect, as table 1 shows. The overall success rate for all applicants in our sample is 11.5%, but the success rate of proximity 1 applicants is only 7.7%, which is considerably lower (33.2%) than the overall success rate. On the other hand, the proximity 2/3 success rate (15.5%) is considerably higher: an increase of 34.5% compared to the average success rate. This suggest that the panelist interests may play a role in decision making. If an applicant makes clear in the application that he/she will leave the home institution when receiving the grant, and there is a panel member from that institution, that panel member may feel as if ‘losing’ the grant and the panel member may be rather negative about the proposal which reduces the probability to get the grant. On the other hand, if there is a panelist from the host organization, that panelist may feel as if ‘winning’ the grant, and therefore be strongly positive and leading to an increase of success probability.

Table 1: Overall success rate versus success rate with a nearby panelist

Proximity class	N*	# success	success rate	Change
0	2593	290	11.2%	-2.9%
1	52	4	7.7%	-33.2%
2/3	271	42	15.5%	34.5%
All	2916	336	11.5%	

The next question is whether domain differences occur, due to (cultural) differences between domains. Table 2 summarizes the findings. In the life sciences, the pattern is the strongest and in line with the overall pattern: The success rate of prox-1 is much lower than success rate of prox-0, which in turn is much lower than the success rate of prox-2. Within physics and engineering sciences the effect of panel member proximity is almost absent. Within social sciences and humanities, panel member proximity shows a similar effect as in life sciences although the effect is much smaller. As the number of prox-1 cases in LS and SH is rather low, that part of the findings are uncertain.

Table 2: Overall success rate versus success rate with a nearby panelist: domain differences

Domain	N Success		Prox 0		Prox 1		Prox 2	
	N	Success	N	success	N	Success	N	Success
LS	924	13.7%	828	12.7%	5	0%	91	24.2%
PE	1309	11.3%	1140	11.4%	38	10.5%	131	10.7%
SH	683	8.9%	625	8.8%	9	0%	49	12.2%

Comparing prox-0 success with prox-2 success, shows that within LS the latter is almost twice as high as the former. For social SH we see a success increase of about a third. In both these domains applicants with prox-1 are never successful. These results suggest that

cronyism does play a role in panel decisions. However, it could also mean that the *concentration of talent* (panelists and applicants) is already large, and the good applicants go to the same environments as the good panelists. But then one would expect to find this more uniformly over all fields. As this is not so, the findings more likely point at field differences in cronyism. Below we discuss this in more detail.

The field differences could be explained by *competition*: stronger competition would lead to more unethical behavior such as cronyism in grant decisions. However, our data do not support this explanation. Although the nearby panelist effect is strongest in the LS domain, competition is the lowest as the success rates show. Another explanation relates to varying levels of *codification* between the domains [7]. Low codification – meaning that there is little agreement of what is good science – would open up selection for nepotism. This question will be addressed in a next version.

Who profits?

In this paper we will only discuss the country and the individual level due to size constraints, and leave the organization level out. Applicants select a host country, where they plan to spend their grant. Table 3 shows the success percentages of the applications by host countries. Some countries show a higher success rate for applicants with a nearby panel member than their overall success rate: Finland, Italy, Sweden, Germany, UK and Israel. This ‘profit score’ is in the last column of Table 3. Other countries show the opposite pattern and have a success rate lower than average for the nearby category: France, Netherlands and Denmark, and quite a list of countries where none of the nearby cases was successful.

Table 3: Nearby panelist advantage by country all proximities together

Country	Number of Applicants (NA)	Number Success (SNA)	Host success rate		Profit score (SRP / SR)
			All (SR)	Proximity (SRP)	
Finland	99	7	7.1%	25.0%	3.5
Italy	355	14	3.9%	8.0%	2.0
Sweden	109	5	4.6%	8.3%	1.8
Spain	261	20	7.7%	11.8%	1.5
UK	528	61	11.6%	16.7%	1.4
Germany	367	60	16.3%	23.0%	1.4
Israel	82	22	26.8%	33.3%	1.2
France	231	45	19.5%	15.4%	0.8
Netherlands	206	41	19.9%	12.0%	0.6
Denmark	80	12	15.0%	8.3%	0.6
Austria	76	11	14.5%	0.0%	0.0
Belgium	98	9	9.2%	0.0%	0.0
Hungary	26	2	7.7%	0.0%	0.0
Norway	46	5	10.9%	0.0%	0.0
Portugal	79	6	7.6%	0.0%	0.0

Strong correlations exist between the number of applicants and the number of panelists ($r=0.92$), the number of proximity relations (0.77) and the number of successful applications ($r=0.81$). This is not surprising as more applicants indicate a bigger science system and thus more panelists and consequently more proximity relations. We find no correlation ($r=-0.008$) between the number of applicants and the success rate showing that the bigger systems are not outperforming the smaller ones.

The pattern of the ‘profit score’ (Table 3) needs further attention. To avoid sensitivity problems, we only include countries with at least 10 proximity relations: Denmark, France, Germany, Italy, Netherlands, Spain, Sweden and the UK. Now we find a strong negative correlation ($r=-0.882$) between *overall success rate* and the *ratio of proximity success and*

overall success: the lower the country's overall success rate the higher impact of proximity on the success rate (Fig. 1).

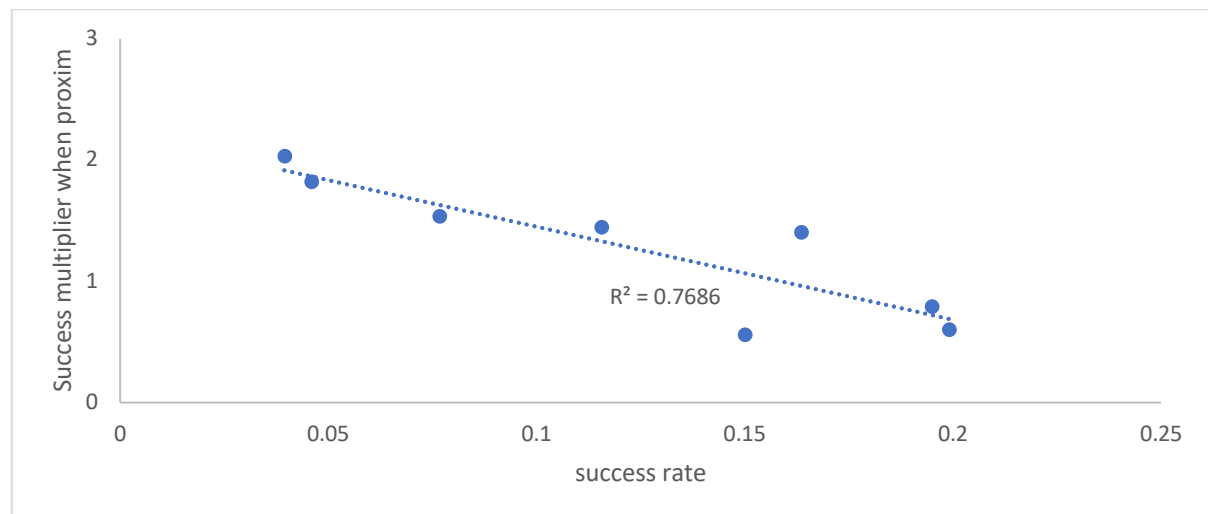


Figure 1: success as host country and the effect of proximity

At the individual level, table 3 shows that more men than women are involved in proximity relations. Overall male applicants are 1.5 times more likely than the female applicants to have proximity.

Table 4: Distribution of proximity types by gender and domain, on the eu/assoc residents

	LS male applicants	LS female applicants	PE male applicants	PE female applicants	SH male applicants	SH female applicants	All male applicants	All female applicants
All	561	363	989	320	364	319	1914	1002
Proximity	65	31	136	33	37	21	238	85
Share	11.6%	8.5%	13.8%	10.3%	10.2%	6.6%	12.4%	8.5%

Table 4 shows that overall when there is organizational proximity, men profit more from proximity 2 than women do: male success rates increase substantially more than female success rates. Proximity 1 gives a mixed picture: in LS and SSH, leaving from an organization that is represented in the panel seems to make success very unlikely. In PE the pattern is different, and the 'leaving women' are actually supported by their (former) colleagues. Also the incoming women (proximity 2) do it well in PE, as their success rate is much higher than for incoming men. Overall, we find a clear indication that organizational proximity adds to gender bias in grant allocation. As organizational proximity has a positive effect on success, the 'gender bias' in proximity makes women benefit less from it.

Table 5: Gender distribution of proximity by field (domain) and proximity type.

Field	Gender	All		Prox 0		Prox 1		Prox 2	
		N	Success	N	Success	N	Success	N	Success
LS	Female	363	11.80%	332	11.40%	1	0.00%	30	16.70%
	Male	561	15.00%	496	13.50%	4	0.00%	61	27.90%
PE	Female	320	12.20%	287	11.80%	6	16.70%	27	14.80%
	Male	989	11.00%	853	11.30%	32	9.40%	104	9.60%
SH	Female	319	9.10%	298	9.70%	3	0.00%	18	0.00%
	Male	364	8.80%	327	8.00%	6	0.00%	31	19.40%
All	Female	1002	11.10%	917	11.00%	10	10.00%	75	12.00%
	Male	1914	11.80%	1676	11.30%	42	7.10%	196	16.80%

Proximity and performance

As mentioned above, the higher success in cases of organizational proximity may be explained not by cronyism but by performance of the organizations and applicants. Excellent applicants gravitate towards excellent organizations. We test this by comparing those with proximity and success (GrPr) with two others: the granted without proximity (GrNPr) and the best performing not granted (BotR) [8]. In both cases the contrast group scored better than the GrPr on the performance indicators, and slightly better on the reputation indicators. This would not have occurred without some form of cronyism.

Table 6: Comparison between *grantees with proximity* and *best of the rest without proximity*

(Life Sciences only)	GrNPr/GrPr	BotR/GrPr
Reputation		
High impact journals (NJCS)	0.98	0.82
Rank host institution	0.84	0.77
Quality of the network	0.80	0.79
Average number coauthors	0.87	0.83
International coauthors	1.02	0.98
Performance		
Fractional counted publications	1.41	2.73
Number top 10% highly cited papers	1.03	1.71
PM score [9]	1.45	3.65
Earlier grants	1.32	1.31

Conclusions and further research

Those with an organizational nearby panel member from the host institution have an overall substantial higher success rate than average. The patterns are different in the different domains, which needs further research. Several alternative hypothesis were addressed, such as concentration of talent and level of competition, but these do not seem convincing. So we would conclude that the analysis shows cronyism in grant decision-making which is also in line with the country differences we found.

More work is needed on methodological issues like the identification of institutional affiliation, and how to include double affiliations. As decision takes place in panels, one would need to analyze this level – however numbers become low then.

Acknowledgements

EC funding through the GendERC project and through the RISIS project. Lucia Polo Alvarez (Tecnalia, Bilbao) collected the data about the institutional affiliations of the panel members. Reviewers and participants of the PEERE conference (Rome March 2018) provided useful comments, as did the reviewers for the STI conference (Leiden September 2018).

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