



ERCIM "ALAIN BENSOUSSAN"
FELLOWSHIP PROGRAMME



Scientific Report

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Nationality	Greek
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Period of the fellowship	01/01/2019 to 31/12/2020

I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

Academic migration is the change of host institution by a researcher, typically aimed at achieving a stronger research profile. Scientific features such as the number of collaborations, the productivity and its research impact tend to be directly affected by such movements.

During my fellowship, we analysed the dynamics of the collaboration network of researchers as they move from an institution to the next one. We specifically highlighted cases where they increase and when they shrink, and quantify the dependency between the collaboration networks before and after such a movement. Also, we drilled down the analysis by dividing movements depending on the career stage of the researchers. Furthermore, we analyzed the differences among domestic and international migrations and how much differently they affect the scientific productivity and the h-index of a researcher. Finally, we investigated the effect of time, in combination with the migration of the researcher, on the scientific collaborations.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

1. Paraskevopoulos P., Boldrini C., Passarella A., Conti M. "The Academic life: Academic Migration, Collaboration Networks and Their Correlations" (under submission).

Status: Pending

2. **Authors:** Paraskevopoulos P., Boldrini C., Passarella A., Conti M. "The academic wanderer: structure of collaboration network and relation with research performance", Applied Network Science (ANS) Journal (SpringerOpen), 2021.

Abstract: Thanks to the widespread availability of large-scale datasets on scholarly outputs, science itself has come under the microscope with the aim of capturing a quantitative understanding of its workings. In this study, we leverage well-established cognitive models coming from anthropology in order to characterise the personal network of collaborations between scientists, i.e., the network considered from the standpoint of each individual researcher (referred to as ego network), in terms of the cognitive investment they devote to the different collaborations. Building upon these models, we study the interplay between the structure of academic collaborations, academic performance, and academic mobility at different career stages. We take into account both purely academic mobility (i.e., the number of affiliation changes) and geographical mobility (i.e., physical relocations to different countries). For our investigation, we rely on a dataset comprising the geo-referenced publications of a group of 81,500 authors extracted from Scopus, one of the biggest repositories of academic knowledge. Our main finding is that there is a clear correlation between the structure of co-authorship ego networks and academic performance indices: the more one publishes and the higher their impact, the larger their collaboration network. However, we observe a capacity bound effect, whereby, beyond a certain point, higher performances become increasingly less correlated with large collaboration networks. We also find that international academic migrants are better at growing their networks than researchers that only migrate within the same country, but the latter seem to be better in exploiting their collaboration to achieve higher impact. High academic mobility does not appear to translate into better academic performance or larger collaboration networks. This shows a different finding with respect to related literature, where scientific productivity is seen as directly linked to mobility. Our results show that, when looking at impact of research, this is not necessarily the case.

Status: Accepted

3. **Authors:** Paraskevopoulos P., Boldrini C., Passarella A., Conti M., "Dynamics of scientific collaboration networks due to academic migrations", 12th International Conference of Social Informatics (**SocInfo**), 2020 (long paper).

Abstract: Academic migration is the change of host institution by a researcher, typically aimed at achieving a stronger research profile. Scientific features such as the number of collaborations, the productivity and its research impact tend to be directly affected by such movements. In this paper we analyse the dynamics of the collaboration network of researchers as they move from an institution to the next one. We specifically highlight cases where they increase and when they shrink, and quantify the dependency between the collaboration networks before and after such a movement. Finally, we drill down the analysis by dividing movements depending on the career stage of the researchers. The analysis shows a remarkable dynamism of collaboration network across migrations. Interestingly, not always movements result in larger collaboration networks, while the overall similarity between networks across movements is quite limited on average. Qualitatively, the same effects can be found at all career stages, while clearly the magnitude of them might vary. These results are based on a dataset extracted from Scopus, containing detailed scientific information for the publications of 84,141 researchers.

Status: Accepted

III – ATTENDED SEMINARS, WORKHOPS, CONFERENCES

1. **Conference:** 12th International Conference of Social Informatics (**SocInfo**), 6-9 October 2020, Pisa (Italy)

IV – RESEARCH EXCHANGE PROGRAMME (REP)

1. **Virtual REP:** Communicated via emails and Skype calls with Prof. Maria Papadopouli from FORTH-ICS, Crete, Greece (January and February of 2020). During my REP, I had the opportunity to present our work to Prof. Papadopouli and to further discuss potential extensions both on the methodology and the research questions.