

Preface

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1 The INSOC group on social capital and performance

One fundamental issue for universities concerns the success (or not) of graduate students and the programmes within which graduate work is done. In an era of budgetary constraints, knowledge of what works well for promoting graduate student success is critical. The aim of the INSOC (International Network on Social Capital and Performance) research group is to develop comparative analyses of PhD students' academic performance across the INSOC member universities. Academic performance is defined on the basis of publications and conference presentations. This special issue is devoted to the studies done to predict PhD students' academic performance carried out by the INSOC research group.

The foundation on which the INSOC project was built is the hypothesis that an individual's success is strongly dependent on the relationships with relevant others inside and outside an organisation or, more narrowly, organizational units. In this project these relationships are measured by means of social-network analysis and conceptualized as social capital. PhD students' relationships are considered both within the research group and with the wider scientific community.

The effects of social networks on PhD students' performance constitute the core of the articles in this special issue. However, drawing from the educational, management and human resources literature, the INSOC models predicting academic performance include not only characteristics of the PhD students' research group understood as a social network, but also background and attitudinal characteristics of the students and some characteristics of the supervisors, who arguably are the most important members of the students' networks.

The INSOC research group is composed by researchers of the universities of Girona (Spain), Ljubljana (Slovenia), Giessen (Germany) and Gent (Belgium). The group was founded in 2001 around a proposal drawn by Hans Waege and Daniëlle

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de Lange at the University of Gent. Acknowledgements are due to all INSOC members who contributed to the proposal, research design, data collection and analysis: Filip Agneessens, Aina Capó, Germà Coenders, Lluís Coromina, Anuška Ferligoj, Jaume Guia, Valentina Hlebec, Jürgen Hoffmeyer-Zlotnik, Hajdeja Iglič, Tina Kogovšek, Dagmar Krebs, Bettina Langfeldt, Daniëlle de Lange, Franc Mali, Uroš Matelič, Hans Waege, and Petra Ziherl.

The methodological issues and questionnaire design, translation and pretesting were examined closely in four INSOC international meetings between 2002 and 2003 (Eger in Hungary, Ljubljana in Slovenia, Ludwigshafen in Germany, and Gent in Belgium). The first data were collected between 2003 and 2004 and three further meetings in Gent, Girona (Spain) and Ljubljana in 2004 defined the analysis strategies. Six further meetings in Girona, Leuven (Belgium) and Ljubljana between 2005 and 2009 featured discussion of results, comparative research issues, follow-up studies, and article preparation.

2 Data and published INSOC results

The study of PhD students' performance carried out at the INSOC group has involved both methodological and applied research. Besides a number of articles in scientific journals, the INSOC project has been the core of four doctoral theses (Agneessens, 2006; Capó, 2009; Coromina, 2006; de Lange, 2005) and four master's and degree theses (Capó et al., 2007; Coromina et al., 2004; Matelič et al., 2007; Ziherl et al., 2006).

Regarding methodological developments, the INSOC research used the web survey described in Coenders et al. (2007) and de Lange et al. (2004). The main advantages of web surveys in the context of network questionnaires are twofold. In the first place, the software can remember the names of the network members who are mentioned in previous questions and makes it easier to ask further questions about the relationships between the respondent and these people. In the second place, personal relationships are a rather sensitive topic, which lends itself best to self-administered questionnaires, such as web questionnaires. It must be noted that the population of interest in this study had universal internet access and known e-mail addresses. Coromina & Coenders (2006) studied the reliability and validity of these questionnaires. Since relationships are nested within networks, this required the use of a particular specification of multilevel measurement model which was developed by Coromina et al. (2004). Non-response and missing data are also known to be a specific threat both to web surveys and to social network analysis. New methods for non-response reduction by means of follow-ups and imputation by methods for proxy choice were developed by de Lange (2005). When it comes to studying PhD students' research networks we must take into account the fact that one of the network members, the student's PhD supervisor, has a special relationship with the student. With this in mind we developed a new type of social

network, called a duocentred network, which is centred around *two* members (Coromina et al., 2008).

Regarding applied developments, some INSOC teams have already published country specific results covering educational (Coromina, 2006; Coromina et al., 2011), gender (Langfeldt, 2006a; 2006b) and networking issues (Agneessens, 2006; Matelič et al., 2007; Zihlerl et al., 2006). Some comparisons across countries have also started to appear (Capó, 2009; Capó et al., 2007). The state of the art in social network analysis has been applied both at the level of egocentered networks (Capó et al., 2007; Matelič et al., 2007) duocentered networks (Coromina, 2006) and whole networks (Zihlerl et al., 2006). Meaningful typologies of PhD students' research groups have emerged (Zihlerl et al., 2006). Models predicting PhD students' performance have shown all three types of considered variables (background, attitudes and networks) to be important predictors (Capó et al., 2007; Coromina et al., 2011; Matelič et al., 2007).

3 Contents of this special issue

In the present issue readers will find the latest results of the ongoing INSOC project.

Kogovšek, Hlebec and Ferligoj present a classification of Slovenian PhD students based on attitudes, background variables and egocentred networks. Meaningful typologies of students lead to different average academic performances. The determinants of performance seem to operate in a non-linear way and, accordingly, there is more than one winning combination leading to high student performance. Attitudes, motivations and hard work are important in one such combination and social relations important in another.

Coromina, Coenders, Ferligoj and Guia pursue the classification issue by using the newly developed duocentred networks and compare uses of them in Slovenia and Spain. The typologies and their average academic performances closely mirror those obtained with whole networks (Zihlerl et al., 2006) at a much lower data collection cost. The best performing students have a grant and belong to large research groups whose members come from different institutions. This suggests that diversity in a research group is an important predictor of graduate student success.

Hlebec, Kogovšek and Ferligoj present the determinants of PhD student success in Slovenia. Drawing from theories in the fields of organization and education and from the job demands-resources model, they show the effects of both network and attitudinal variables, which can be understood as social and psychological resources respectively.

Coromina, Capó, Coenders and Guia present a qualitative follow-up study of PhD student performance by using the quantitative INSOC results to perform extreme-case and typical-case qualitative sampling. The issues mentioned by

students as triggers and hindrances to performance have mostly to do with qualitative network characteristics lying well beyond network structure and contact intensity, which were measured in the quantitative questionnaire. This points to an important methodological issue for the design of mixed-method studies.

Finally, Hlebec and Kogovšek address a crucial methodological issue regarding social network measurement and compare the network compositions obtained with the name generator approach used by the INSOC with the less costly role relation approach used in many large scale social surveys. Composition of instrumental support networks is similar for both approaches, but larger differences appear in emotional, informational and work support. Differences are greater for strong ties and these results suggest that the instruments used in the INSOC studies were well designed.

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