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Mapping networks: Exploring the utility of social network analysis in management research and practice.

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Synopsis

Although social network analysis (SNA) offers an insightful perspective on the relational and structural properties of organizational activity, discourse on how to manage and coordinate its application is relatively scarce. Aimed largely at the applied network analyst, this paper seeks to provide greater understanding of how SNA has been previously discussed in management studies, what the main points are and where these issues might be addressed before and during the research process to ensure network data are efficiently managed, analysed and interpreted. Engaging with several practical concerns associated with SNA – including network boundary specification, data reliability, context of inquiry and network visualizations – a viable framework is developed that is accessible to managers, consultants or researchers in facilitating the structuring, collection, handling and analysis of network data. Our discussion illustrates the relevance of this perspective for both a practitioner and a theoretical audience.

Introduction and Background

Social network theory, which considers the connections (ties) among individuals, units or organizations (actors), is increasingly employed within management research as a means of understanding the complex and interactive relationships and patterns

between and within organizations (Borgatti & Halgin, 2011; Gulati et al., 2011; Kilduff & Brass, 2010; Wasserman & Faust, 1994). Given its potential to deliver objective and systematic analysis of relations between actors, SNA enables interactions to be explored, quantified and evaluated (Brass, Galaskiewicz, Greve, & Tsai, 2004). Network perspectives have been used to explain organizational phenomena at a number of interpersonal, inter-organizational and intra-organizational levels of analysis (Borgatti & Foster, 2003; Coviello, 2006; Granovetter, 1985; Gulati, 1999; Håkansson & Ford, 2002; Johanson & Vahlne, 2009; Uzzi, 1996) while interest in the dynamic influence of social ties on organizational networks across and within different locations has been explored in the context of multinational companies (Awate, Larsen & Mudambi, 2015; Monaghan et al., 2014).

Issues and Questions Considered

Increasingly, SNA is applied as a methodological tool to map relationships and quantify engagement between interdependent actors, resulting in an array of research endorsing the theoretical and mathematical components within the management literature (Borgatti & Foster, 2003). Greater contemporary research is needed on aspects of structuring and collecting network data, such as how and why data is collected on a particular network (network boundary specification), how the

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researcher ensures that it is the correct data (data reliability), when to compile network data (context of inquiry) and ways we can improve data representation (network visualization). Rather than engage in a technical, mechanical or theoretical analysis of network data, our paper explores practical aspects of network analysis and aims to familiarize researchers and practitioners with key decisions surrounding the structure, collection, handling and analysis of network data prior to embarking on some of the more detailed dimensions of the tool. First, this paper seeks to profile the practical complexities associated with utilizing network analysis within management research. Drawing upon established network research, we consider some of the core decision points to be addressed prior to engaging with or performing SNA. Our second research objective centres on the creation of a guiding framework for network analysts to assist with implementation of this methodological approach. This framework presents some suggestions and probing questions for analysts to consider prior to initiating SNA research and during the process.

Methodology

This paper draws on our experiences of using SNA in a project that investigates the mutual relationships between subsidiary units of multinational corporations (MNCs) and sub-national patterns of governance and infrastructure. We outline four activities that relate to inherent decisions within network analysis, namely, network boundary specification, data reliability, intervening context of inquiry and the increasing use of network visualizations, which have been independently considered in the literature or noted as potential limiting criteria of relational data. We discuss each element in order to enhance understanding of the necessary considerations before engaging in a social network based research project.

Outcomes and Findings

First, network boundary specification illustrates the importance in ascertaining the network parameters to distil and crystallize the focus of the network and generate a clear structure for the research. Important decisions are required on the inclusion and exclusion parameters for the network, and caution is advised to ensure necessary provisions are made for non-redundant, weak and indirect relationships. Second, remaining cognizant of potential participants, their role within the network and the mechanisms to obtain data is also

central in the early stages of deploying SNA to guarantee data reliability in interpreting and discussing network elements. Careful consideration, selection and design of a research tool can enhance handling of the network data and consolidate the network structure, whereas delineated contextual information may reduce potential oversights associated with SNA during data collection. Third, context of inquiry is an important attribute to provide additional information and detail on the network, actors and ties while minimizing potential alternative explanations that may discredit the findings. While multiple data sources serve as a fundamental resource in understanding and contextualizing network data, it is also important that sufficient information is attributed to the study's economic, social, political and temporal context. Fourth, data interpretation can be greatly facilitated by network visualizations and mapping tools, but equally computational analysis such as centrality and density can also offer a more robust and significant insight.

The above four key activities both summarise the practical complexities associated with utilizing SNA and act as a guiding framework for network analysts to assist with the implementation of this methodological approach. This study offers two key contributions. First, the focus on structuring, collecting, handling and interpreting SNA data within the perspective of organizational and management studies counters the current dichotomy between theoretical reviews of SNA and scientific, statistical applications of the technique. Engaging specifically with four practical concerns associated with SNA – network boundary specification, data reliability, context of inquiry and network visualization – this paper provides a synthesis of information that managers, consultants or researchers can reference prior to engaging with SNA. Moreover, it contributes to SNA theory by offering a contemporary and contextualized illustration of some key issues within the field. Second, the framework postulates four key questions to guide and direct researchers, managers and practitioners in first engaging with SNA within their research or commercial practice. Building upon significant methodological and theoretical reviews on collecting network data (Carpenter et al., 2012; Conway, 2014; Marsden, 2005; Wasserman & Faust, 1994), our paper offers management researchers and practitioners a more delineated discussion on some of the key practical dimensions for handling and analysing network data.

A full copy of the paper can be obtained at:

Mapping Networks: Exploring the utility of social network analysis in Management research and practice, Journal of Business Research, 76: 136 – 144 Doi: <https://doi.org/10.1016/j.jbusres.2017.03.020>

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