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APPLYING A NETWORK-LENS TO HOSPITALITY BUSINESS RESEARCH: A NEW RESEARCH AGENDA

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ABSTRACT

Hospitality businesses are first and foremost places of social interaction. This paper argues for an inclusion of network methodology into the tool kit of hospitality researchers. This methodology focuses on the interaction of people rather than applying an actor-focused view, which currently seems dominant in hospitality research. Outside the field, a solid research basis has been formed, upon which hospitality researchers can build. The paper introduces the foundations of network theory and its applicability to the study of organizations. A brief methodological introduction is provided and potential applications and research topics relevant to the hospitality field are suggested.

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INTRODUCTION

Hospitality research commonly refers to the study of business aspects of accommodation and restaurant providers. In accord with the dominant commercial aspects of hospitality studies, Lashley (2000) proposed a three domain model in which he described the "hospitality experience" as located at the intersection between three domains: the cultural/social, the private/domestic and the commercial domain. The private domain concerns personal aspects of the guest-host relationship, which has been extensively discussed by Telfer (2000). The social domain considers the social context in which hospitality interaction takes place. When a family

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gathers in a restaurant to celebrate, the social interaction among family members becomes the defining factor of the hospitality encounter. Finally, and the most prominent, the commercial domain comprises all the economic activities such as exchange of goods for payment that are found in the hospitality industry. Research in the hospitality domain has so far been dominated by studies which rely on attribute or ideational data, whereas in fact in many cases the phenomena under study are relational in nature. All social interaction, regardless of whether they occur between individual agents (employees, guests) or collective agents (teams, department, organizations) can be viewed in network terms. Hereby, formal network analysis can assist in examining individuals within their institutional contexts or relational frame. A long history in relational sociology and graph theory as a solid mathematical basis has led to widespread acceptance of network analysis in a broad range of disciplines, including management. For hospitality business studies, social network analysis (SNA) should be added to the plurality of research methods already applied in this field, since it allows researchers to make the nature of human exchange explicit and tangible for quantitative research. In 2007, during the *Cutting Edge Tourism Research Conference* at the University of Surry, network analysis was identified as the number one research methodology issue for hospitality research (Holmes et al., 2007). However, a recent review of the leading hospitality management journals reveals only a handful of network studies (Alonso, 2010; Farber, 1994; Hsu, Liu, & Huang, 2012; Kelliher, Foley, & Frampton, 2009; Kim, Ok, & Jae Lee, 2009; Li & Netessine, 2012; Liu, Lui, & Man, 2009; Mathews, 2000; Xiao, 2010; Ye, Li, & Law, 2011), many of them combined with network studies in tourism. Similarly, a review of *Social Networks* and *Connections* returns not a single study that was conducted in a hospitality setting. This can be due to one or both of the following of two reasons: a) few hospitality (business) researchers have the motivation to study the methodology beyond the rudimentary level, whereas b) social network researchers have seemingly little motivation to study a hospitality context. It is possible that some researchers who have seen the potential offered by network analysis may have been drawn back by the technical and mathematical language often used in the discussion of the network literature.

The paper attempts to remedy that shortcoming by presenting a structural, social network approach to the studies of hospitality businesses. It sets off by outlining a network theory, followed by an introduction to social network analysis and its common application to the

study of organizations. The structural nature of hospitality businesses is emphasized and thus the suitability of social network analysis for the study of hospitality management is argued for. The paper concludes with suggestions for research themes that are inductive to the application of social network analysis.

NETWORK THEORY

The structuralist notion of relations over individual units is much older than current accounts of the networked society would suggest. Reference to the relational paradigm is evident in writings of many of the great contributors to sociology, including Marx, Durkheim, Weber, Goffmann, and Parsons (Emirbayer, 1997). For the social sciences, the adoption of network thinking and analysis of networks and graphs became popular in the mid-20th century (Moreno, 1934; Radcliffe-Brown, 1940; Simmel, 1922/1955). The dominance of the relational approach is a strong signature of Georg Simmel, whose contributions have inspired most theorists in the field of network analysis. For Simmel, social ties form focus of investigation; instead of concentrating on isolated units, trying to detect similarities and differences, researchers are better off understanding individuals as connecting points of relations and thus to derive individual characteristics from these relations. Whilst Georg Simmel formed the structuralist network approach and is thus commonly regarded as the "father of network theory" amongst network structuralists, Niklas Luhmann and, more recently, Harrison White devoted themselves to a phenomenological network approach (Fuhse, 2008). The phenomenological approach – as opposed to a pure structuralist approach – pays more attention to the interplay between network structures and the phenomenological level of structures of meaning and action (Emirbayer & Goodwin, 1994). In his theory of networks, White (1992) does not treat individual actors as social units, yet, in line with Luhmann's communication networks, transactions create structures of meaning which are supra-personal in nature. As a consequence, the attitude and actions of actors in a network is dependent on their social environment (e.g. Erickson, 1988; Martin, 2002; D. A. Scott & Carrington, 2013; J. Scott, 2000). Thus, individuals do not make isolated decisions about individual actions. Instead, individual actions are consequences of the social environment the actor finds himself in. In this tradition, social network analysis studies the pattern of relationships rather than concentrating upon on the attributes and behaviors of single or collective agents. Today, SNA can be conceived

a toolbox of methods that are widely applied for descriptive and diagnostics across applied fields such as management and organization studies (Borgatti & Foster, 2003; Brass & Burkhardt, 1992; Cross & Parker, 2004; Cross & Thomas, 2009; Gulati & Gargiulo, 1999; Kilduff & Tsai, 2003; Tichy, Tushman, & Fombrun, 1979). According to Kilduff, Tsai, & Hanke (2006:1033), four key concepts form the pillars of modern social network theory: The primacy of relations between actors, the ubiquity of actor's embeddedness in social fields, the social utility of network connections and the structural patterning of social life. The analysis of links between people has been shown to be fundamental for the understanding of resource/knowledge transfer (Cross & Cummings, 2004), social cohesion and embeddedness (Granovetter, 1983, 1985) and social capital (Burt, 2001; Lin, 2005).

Three streams of thought appeared during the historic development of network science (N. Scott, Baggio, & Cooper, 2008). The first - and most common - stream, the mathematically based social network analysis examined properties of existent networks, often with an aim to improve network characteristics. The second stream applies qualitative methods to describe relationships between individuals in a community. The third stream applies a physicist's view on complex networks as postulated by Albert and Barabasi (2002). While each of the streams has merits for the study of (tourism) organizations, this paper follows the mainstream in the social sciences and outlines potential applications of social network analysis.

THE NETWORK LENS TO STUDYING ORGANIZATIONS

SNA is a systemic way of assessing, mapping and analyzing networks of relationships between individuals, groups or entire organizations. A network is the result of reciprocal, preferential and mutually supportive actions between individuals (Burt, 1992). A social network is formally defined as a set of nodes (actors) that are connected by edges (relations) (Wasserman & Faust, 1994), thus the presence of relational information is a critical and defining feature of social networks. SNA works on the premise that observable (social) phenomena are created primarily and most importantly by relations and the pattern formed by these relations. This leads us to the assumption that the connections between individuals supersede the attributes of the individuals, which in turn means that individual action is driven by the structure in which one is embedded. As opposed to more traditional, attribute-based research approaches, SNA

views actors and their actions as interdependent rather than independent autonomous units. As a consequence, relational sociology (and thus network models) asserts that the structural environment of individuals provide opportunities for or constraints on individual action.

SNA is commonly employed for three groups of investigations:

1) to examine the interactions between agents (actors, groups or institutions)
2) to measure the resource and information flow between actors
3) to map (and study) the way actors cluster or cohere.

Currently, SNA is applied across scientific disciplines; however, in this paper the focus is limited to the study of organizational networks. Figure 1 provides an overview of the most prominent research applications in organizational network studies, organized by network level of analysis. Each level is defined by the number of actors entailed therein. The lowest level (dyad) investigates the ties between individuals; thereby the focus is on the effects of structural positions of single actors. The second level looks at bounded social groups within the organization and attempts to draw conclusions for e.g. performance issues and information flow. The top level of organizational studies is concerned with entire organizations and thus investigates e.g. the connectedness of organizations in the form of alliances.

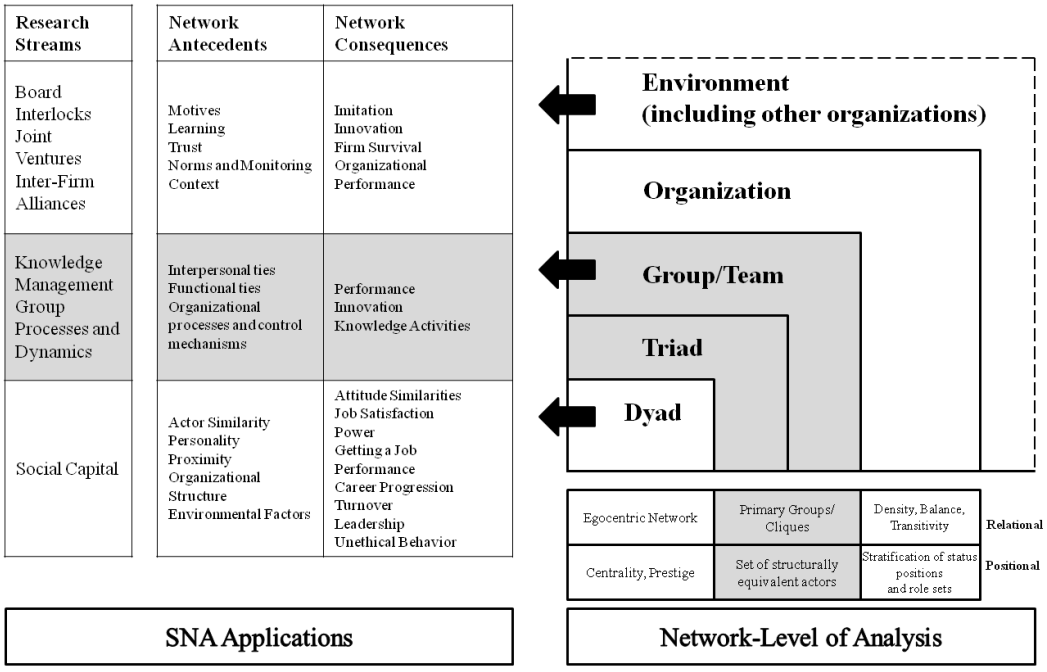

Figure 1. *Levels of organizational network studies*

Most network studies are driven by one of two questions: either they are concerned with detecting underlying variables which determine the emergence of the observed network (i.e. looking for network antecedents), or they aim at defining the effects the network structures have on a specific context (network consequences). For each level of analysis, the network antecedents and consequences differ, so each shall be discussed in turn.

The nature of ties

A network is a defined number of elements or nodes and the number of relationships or edges between them. The terminology is derived from the graphical display of networks in sociograms or graphs, where nodes represent the actors or elements in the network and the edges represent the relationship between these actors. Across the same set of nodes, different networks can be defined; among members of an organization, nodes can form friendship networks but also networks of work-related collaboration. Any network is thus defined by its purpose, as represented by the relationship between nodes. Methodologically, this is important as any analysis of networks has to start with an unambiguous demarcation of the network. This demarcation defines the method of data collection, the level of analysis and the interpretation of results.

Wassermann and Faust (1994: 18) provided the following overview of types of relational ties:

1) *Affective relationships*, evaluated by one or both nodes involved (e.g. friendship, respect, liking). Affective relationships are subjective in nature and thus have to be personally reported on, and interpreted with the context of data collection in mind.
2) *Trade relationships* in which jointly accepted goods or resources are transferred from one to another (e.g. business relationships, borrowing or lending goods and services).
3) *Association or affiliation relationships* (e.g. event attendance or club membership); where two or more nodes form a tie which may be beyond personal awareness (two members of an organization may belong to the same political party without knowing about the other's membership, yet behavioral equivalence can be a result from joint political views).
4) *Behavioral interaction*, such as communication, email conversations, meeting participation, joint lunches etc.

5) *Movement between places*; such as migration or social and physical mobility (e.g. travel streams or work-related *commuting).*

Dyadic relationships

The structure of a network can be analyzed on different levels, the smallest of which is a dyad, i.e. an edge between two nodes. Naturally, every network can be broken down to dyads, thus the existence and nature of ties between two nodes is a fundamental element in network analysis.

The main research concerning the individual in networks that has attracted a number of scholars from diverse backgrounds and has thus evolved into a multi-disciplinary concept is the one of social capital. It is argued that networks provide the necessary condition for access to and capture of embedded resources (Lin, 2001). Certain network features and variations in networks may increase or decrease the likelihood of resource quantity and quality (Sparrowe, Liden, Wayne, & Kraimer, 2001). Numerous studies have focused on intra-organizational networks (cf. Andrews & Knoke, 1999), including network dynamics (Burt, 2000), knowledge flows (Busch, Richards, & Dempney, 2001), impact of work group constellations (Cummings & Cross, 2003) and network characteristics such as the homophily theory, describing the formation of networks between equals (McPherson, Smith-Lovin, & Cook, 2001) and certainly the impact of weak ties (Granovetter, 1983) and structural holes (Burt, 1997).

On this level of analysis, the search for network antecedents is relatively popular. The main question asked in this context is: What is it that forms the observed network other than pure chance? The forms of network antecedents most commonly referred to are actor similarity (Blau, 1964; Davis & Leinhardt, 1972; Granovetter, 1983; Ibarra, 1993; Mehra, Dixon, Brass, & Robertson, 2003), personality (Klein, Lim, Saltz, & Mayer, 2004), spatial proximity (Huggins & Johnston, 2010), organizational structure and environmental factors (Jansen, Van den Bosch, & Volberda, 2006).

Alternatively, network characteristics can be treated as independent variables, predicting a range of dependent variables, i.e. network consequences. The list of possible network consequences is endless; similarly widespread are the applications of network analysis as an

explanation for observed behavior. Some of the more frequently researched network consequences are attitude similarity (Burkhardt, 1994; Erickson, 1988; Galaskiewicz & Burt, 1991), job satisfaction (Morrison, 2002), power and leadership (Krackhardt, 1990; Mehra et al., 2003), job search (Burt, 1992; Granovetter, 1983; Seidl, Polzer, & Stewart, 2000), career progression (Krackhardt & Porter, 1985; Seibert, Kraimer, & Liden, 2001) and performance (Cross & Cummings, 2004; Mehra, Kilduff, & Brass, 2001; Perry-Smith & Shalley, 2003; Sparrowe et al., 2001).

Groups and teams

The second level of analysis concerns groups in networks. The importance of teams as organizational units through which work is carried out has risen considerably in the last decades and is now often fundamental to a firm's success (Gerard, 1995). At the same time, numerous researchers have tried to identify and understand the factors contributing to, or diminishing team effectiveness (Kozlowski & Bell, 2003; Sanna & Parks, 1997). Despite this large body of studies and findings, the understanding of a potentially critical set of determinants is limited (Balkundi & Harrison, 2006). There also seems to be no consensus on what is known about social network effects in work groups or teams. Consensus exists, however that network effects hold some explanatory power for changes in team effectiveness, based on the view that connections (ties) between individuals within a team facilitates the flow of resources (Brass, 1984). On this ground, social network approaches to team research gained in popularity (Borgatti & Foster, 2003); although to date the findings produced remain inconsistent.

For a network approach to team evaluation, one basic assumption is that existing ties serve as pipelines for the flow of resources between individuals. Thus, in groups which comprise well-connected individuals, members tend to share information and trust each other (Krackhardt, 1999). Some researchers have found that higher density leads to better performance of teams (Reagans & Zuckerman, 2001) whereas others have not (Sparrowe et al., 2001). The second basic assumption relates to the position of individuals within the group (e.g. leadership) and is expressed through the number and strength of ties this individual holds with the other members of the team. Central leaders (i.e. leaders with a larger number of ties) occupy structurally advantageous positions where they can be gatekeepers and regulators of resource flow (Krackhardt, 1996) and

as a result tend to have more productive teams. However, opposing views state that, similar to above, too many close ties may be counterproductive, as the burden of maintaining too many ties may distract from working tasks (Boyd & Taylor, 1998).

Entire organizations

Treating the entire organization as the unit of analysis allows the researcher to apply a macro view and look at e.g. entire markets or industries. Within these research contexts, firms are the actors and thus form dyads and triads with other firms. Often, theories from interpersonal networks are borrowed to support such analyses, an approach which appears to be flawed, since it is questionable whether organizations form ties in the same way as individual people.

Most of the academic work at this level of analysis is concerned with organizational collaboration. Besides an interpersonal tie between two individuals working for different organizations (boundary spanners), an organizational collaboration can have one of two forms: An individual tie to an entire organization (e.g. board interlocks) or a collaboration between two entire organizations (Joint Ventures or Alliances).

A board interlock is a directed tie between two firms that is formed by (at least) one director sitting on the board of another company (Mizruchi, 2006). Companies with interlocking directorates show similarities in decision processes (Westphal, Seidel, & Stewart, 2001), acquisitions (Haunschild, 1993) or diversification (Chen, Dyball, & Wright, 2009). In most cases, since the board of directors has an advisory role, they are often seen as knowledge resources external to the company.

Firms increasingly form strategic alliances to strengthen their own market position or expand into new markets. The reasons for engaging into an inter-firm alliance are manifold, ranging from reducing a firm's market uncertainty and risks (e.g. Starkey, Barnatt, & Tempest, 2000), to increasing market power and status (e.g. Stuart, 2000), to gaining market information and resource access (e.g. Rosenkopf & Nerkar, 2001).

To date, the hospitality industry has not often been the explicit context of social network studies, with few exceptions. Kilduff and Krackhardt (2008) studied turnover behavior in fast food restaurants, thus analyzing dyadic ties over time. They reached the conclusion that a)

employees leave the organization in clusters which resemble strong interpersonal ties and b) those that stay tend to show higher levels of job satisfaction. Aubke (2014) applied a network perspective to the study of career trajectories of highly successful chefs and showed that individual creative productivity can, to a degree, be explained by the social ties a chef maintains. Hu, Horng, and Sun (2009) showed that knowledge sharing among hotel employees support service innovation performance, yet the authors did not analyze networks per se. In contrast, Aubke, Wöber, Scott, and Baggio (2014) contribute to the team performance literature by showing a link between group cohesion and team performance of information-dependent hotel revenue management teams. So far the most attention has been given to networks of organizations. Many studies on networks of tourism providers in a destination naturally include hotels, but these studies shall not be mentioned here. Of more relevance is the study of von Friedrichs Grängsjö and Gummesson (2006) in which the authors claim that social capital (of organizations) has advantageous effects on growth potential in a destination. Similarly, Ingram and Roberts (2000) showed that friendship among hoteliers can lead to an increase in economic performance. Li and Netessine (2012) as well as Mathews (2000) investigate competitive environments using a network approach and thus providing a new perspective on relational aspects of competitor definition and benchmarking.

What distinguishes these papers from the myriad of other articles published in the hotel management domain is the underlying systemic worldview of the authors. The authors perceive the research context as an interdependent and thus complex system in which one cannot isolate single actors or phenomena. Such a context of interconnected elements leaves the researcher with one of two options: either, to ignore the interconnectedness, or, to apply methods suitable for relational data. The following section will outline the structural characteristics of the hospitality industry and thus argues for applying a network lens to studies of hospitality businesses, before briefly outlining methodological issues and potential pitfalls for researchers wanting to undertake social network studies in (hospitality) organizations.

THE STRUCTURAL NATURE OF HOSPITALITY BUSINESSES

Hospitality businesses can be viewed as collective agents in complex networks of economic relations. Every business can be perceived as a bounded social community, comprising individuals and social groups, in which membership is defined through employment. As such, the business facilitates networks of social and professional interaction, communication, cooperation and exchange of resources, both for its permanent members (employees) and temporary actors (guests). Therefore, it appears appropriate to conceptualize hospitality businesses through the application of a network lens and attach relational characteristics to hospitality businesses. These relational characteristics shall now be described in more detail.

A subsystem of the hospitality industry

Each business is part of the hospitality industry, and is perceived as such by its stakeholders. Positive or negative sentiments about the industry as a whole are reflected immediately onto individual businesses, only corrective actions can alter the picture. Defining the hospitality industry as a system with transformational characters, individual businesses can be understood as subsystems, interacting with the suprasystem and, eventually defining it. It is therefore of interest, to what extent the dual interaction between suprasystem and subsystems define each system's activities.

Elements of service provider networks

The tourism industry is commonly described as a system that is driven by a demand and a supply side (see e.g. Gunn & Var, 2002). The supply side can be dissected into numerous layers, from destinations to lobbies and associations to individual service providers. There is a clear interaction and a mutual interdependence between the service providers. Understanding the nature of such providers' networks and the dependencies therein can help to plan for contingencies and rectify service interruptions.

Actors in a competition network

Each market comprises a large number of businesses competing for guests. Although one could perceive all hospitality providers to be direct competitors, the diversification of products and spatial dispersion of suppliers creates clusters of varying degrees of competitiveness. Understanding competitive positions can have profound effects on business strategy and communication as Ingram and Roberts (2000) found in their studies of friendship networks of general managers in Sydney.

Actors in a cooperative network

In many cases, tourism providers join forces in order to offer the consumer a range of products as one packaged experience. As such, a hotel may choose to cooperate with a tour operator and a local theater to offer a travel package for the cultural tourist. In consequence, the accommodation becomes only a part of an organized experience and mutual relationships are created. If dissatisfaction arises with one element of the package, other elements may be affected, too.

Places of social interaction and exchange of individuals with sometimes conflicting interests

Social interaction between employees and guests are not only seen as the cornerstone of good hospitality service, but are in fact a necessary condition for service to occur. Advances in hotel design stress the requirements of adapting the hardware to the needs of the people. For example, Jones and Lockwood (2000) suggest designing the reception space in such a way that employees can interact with customers at the same height and are not required turning their heads away from the customer when using equipment. The design and layout of hotels should not only foster staff-guest interaction but also guest-guest interaction. From a process management perspective, the seamless integration of front-office and back-office processes is crucial for complete service delivery. Therefore, one has to consider all dimensions of social interactions that occur within a business, including those that may involve conflict.

As it has been argued before, the act of hospitality and resulting business is quintessentially defined by the interaction of single actors (guests and hosts) and collective agents (organizations). The relations humans entertain are indicative of conscious and subconscious choices and these relations directly and indirectly affect actors' behavior. In other words, knowing more about the relations and the principles of tie formation can help us understand human actions better.

Despite the potential of network analysis for hospitality studies, methodological issues pertain, which shall be raised in the next section, before some specific areas of application are suggested to the reader.

METHODOLOGICAL ISSUES AND PITFALLS

The potential uses and explanatory power of SNA is determined by the availability and quality of relational data. This section therefore focuses on issues relating to data collection and analysis. It is not intended to replicate existing methodological guides, but to draw the reader's attention to methodological challenges and potential pitfalls.

Descriptive analysis of social networks consists of examining the relative structural position of individual actors (centrality, embeddedness, core actor analysis) as well as examining social relations in their entirety by looking at coherence of social structure (Wasserman & Faust, 1994). More sophisticated analysis considers parallel relations between actors (multilevel) or relations between actors and events (bipartite). By use of simulations, either through Monte Carlo Markov Chains (MCMC) or Exponential Random Graph Models (ERGM) researchers have tools available for the study of causal effects. A recent overview of methodological developments and statistical innovations is provided by Lusher, Koskinen, and Robins (2013).

Relational data is traditionally collected from archival sources, in the field or in experimental tests. Archival records may include affiliation or membership records and any other form of recorded human interaction. More recently, email records, social media posts and internet content have provided researchers with a wealth of relational data.

More complex hypotheses require the researcher to collect data in the field, which typically fall into one of the following categories: 1) egocentric, where one actor names the alters and the relationship between these alters; 2) census, where information about relationships are collected

from all actors of a pre-defined population; 3) group elicited, through participant observation; 4) informant or expert, where relations are elicited from the perspective of a knowledgeable observer and 5) (quasi) experimental, where transactions are measured under controlled conditions. The interested reader shall be directed to some recent texts which aid with the choice of data collection and related analytical procedures (Borgatti, Everett, & Johnson, 2013; Hennig, Brandes, Pfeffer, & Mergel, 2013; McCulloh, Armstrong, & Johnson, 2013).

It is important to offer a caution to those seeking to collect their own data. Issues of respondent burden and recall errors when reporting on past relations are consistent concerns as is the cognitive capacity of respondents and possible distortions when reporting on the nature of relationships between alters. These issues can be partly overcome by the observance of survey and interview techniques, namely the use of free recall, rosters or a combination of the two. Free recall is most appropriate when the size and boundaries of the network cannot be established with confidence or in cases where a list of possible alters is simply not available a priori. Rosters, i.e. the use of a predefined list of alters is most common when the network size the deemed manageable and boundaries can be ascertained. The use of scales to determine tie strength adds complexity to the data collection but in turn provided the researcher with an additional depth of the data.

More recently, network researchers turn to multiple data sources to yield complimentary data. In particular, a mix of qualitative and quantitative data collection is used to verify data, but also to add richness to the data beyond mere structural features of the network (N. Scott et al., 2008).

As one would expect, the same caution and diligence need to be applied to the collection of network data as is the case with non-relational data. Some risks however, are particularly evident in network research and thus valid some attention. First, there is the issue of network boundary setting. Second, missing or inaccurate data largely impact the validity and correctness of network interpretations. Third and final, the collection of relational data is particularly sensitive to privacy and ethical concerns. Each of the three issues shall be briefly discussed in turn.

Oftentimes, network membership and thus network boundaries are indisputable as is the case for association memberships, employees or stakeholders in a destination. In these instances, researchers are likely to be interested in all relations within these boundaries and will attempt to

capture a relational census. In reality, however, closed systems are very rare and boundary spanning relationships exist and matter. In many cases, researchers need to define boundaries a priori and too tight an approach comes at the expense of boundary spanning relations remaining hidden. Therefore, researchers are advised to think very carefully about the potential influence of relations external to the network gathered. One needs to accept that boundaries are often set artificially or are dictated externally. In consequence, conclusions drawn from the network analysis must always be scrutinized for potential effects that untapped parts of the network can have on the observed structure.

Whereas incorrect and missing data is a general concern for researchers, network studies are said to be particularly sensitive to this (Huisman, 2009), whereas the omission of links is deemed more critical than the omission of actors (Borgatti & Molina, 2003). Typically, network data quality suffers from non-response of actors, questionnaire design bias and informant bias (Kossinets, 2006). As an example, researchers often opt for eliciting affective relations (e.g. friendship) based on the assumption that such relations foster the flow of information, leveraged by effects of trust. However, friendship is a fuzzy concept and respondent tend to over- or underestimate friendship ties, resulting in incongruent affective relations in a network. A second issue is recall bias. When asking alters for relations to other alters, respondents may omit links due to an inability to recall ties, distortions through self-presentation effects or misinterpretation of the relationship itself. Researchers are thus well advised to carefully draft research questions and run pre-tests to verify their interpretation. Second, to reduce respondent burden, researchers should ask for recent, rather than historic ties and for longstanding, recurring interactions. Finally, experience has shown that first-order relationships are more reliable than second- or higher-order relationships.

The final methodological issue to which attention should be drawn relates to privacy and ethical concerns. As opposed to "traditional" data collection, respondent anonymity is - by the very nature of the data collected - difficult to observe, at least in the data collection phase. In many cases, respondents are not accustomed to the network methodology and thus may be hesitant to report on ties they perceive as private. Furthermore, respondents are commonly unaware of all weaknesses of their structural environment and therefore the potential use of such information (Hill & Dunbar, 2003). Participants of a study may also be unaware of the consequences a network study can have for them personally, resulting in missing or incorrect reporting on ties. Informed

consent is one solution to this issue, but researchers need to acknowledge that informed consent can only be procured from the provider of the data, and not their alters. The ethical concern is elevated if researchers, eager to complete the network data, attempt to fill missing links using information provided by others.

APPLICATIONS TO HOSPITALITY STUDIES

So far, this paper has argued that the structural nature of hospitality businesses appears predestined to applying a network lens in research. This position is based on the perception of hospitality being a place of social interaction, thus many of the phenomena which can be observed in a hospitality setting may be seen under a new light when an advanced network methodology is applied. The brief review of prominent research streams provides some starting points for a network-based research agenda in hospitality management.

Table 1 shows a list of business aspects which are potentially influenced by network effects. The list is by no means conclusive and should be understood as suggested areas of research:

Table 1. *Research themes for positive network effects*

Research Area	Topics	Potential Research Questions
Marketing	Competitive environment, redefining competitive sets	Can online search behavior provide insights to who the real competitors in the eyes of the consumer is?
	Guest loyalty, loyalty programs	Can consumption patterns of loyalty program members be detected and used for more targeted loyalty program management?
	Social Media Marketing	Who should we target with online marketing to reach maximum viral effects?
Management and Organizational Behavior	Inner-departmental communication	Does the inner-departmental communication mirror the intended communication flows?
	Organizational change, support and resistance	Who are the exceptional actors in the organization who can initiate (or prevent) organizational change?
	Performance (individual, groups, teams, organization)	How do social relations impact on performance (on all organizational levels)
	Facility planning and management to influence network formation	Which arrangement of office space is conducive for information flows?
	Owner-operator relationships	How does the operator-owner relationship compare across regions?
	Supplier networks, intermediation and outsourcing	Can synergies be utilized through comparison of supplier networks across businesses
	Effects of social exchange on service quality perceptions	Determining the effect on social interactions (guest-host and guest-guest) on service quality perceptions.
Human Resources	Staff recruitment, turnover, turnover intentions	Can social relations be used as a predictor for staff turnover?
	Job satisfaction, job pressure	Does the relational position of an employee in the social network explain job satisfaction?
	Motivation, inspiration	Does the relational position of an employee in the social network explain employee motivation?
	Individual social capital in organizations	Does social capital assist in career progression?
	Departmental social capital in organizations	Does social capital of collective agents explain power distance?

The suggestions in Table 1 all refer to advantageous effects of networks, but it should not be forgotten that networks can have negative effects across all levels, too. Such negative effects worth studying which can be included are presented in Table 2.

Table 2. *Research themes for negative network effects*

Research Area	Topics	Potential Research Questions
Negative networks	Mobbing	Can the existence of mobbing, gossiping etc. be explained by: The relational position of actors, power differences in the network, information asymmetry, network density, etc.?
	Gossiping	
	Perceived stress and Burn-Out	
	Sabotage	
	Theft, pilferage	

Many of the phenomena discussed before have been studied previously, albeit with a predominantly atomistic perspective. Reviewing these issues from a network perspective may therefore provide researchers with different levels of understanding and, in consequence may lead to very distinct sets of tools that allow management to intervene and manage the networks in the organizations. After all, a network approach not only allows one to understand the problem management is facing, but also to understand the system that causes the problem. Network researchers, on the other hand, can profit from the widespread application of current analytical tools and the data generated from this research will help advance their methodology.

CONCLUSION

The objective of this paper was to demonstrate how a network perspective could provide an alternative research approach for hospitality business studies and thus contribute to greater understanding of social relations in (hospitality) organizations. The paper summarized key concepts of organizational network research on three levels: individual, group and entire organizations. SNA can be employed along other methodology tools in the study of (hospitality) businesses and actors. It easily complements more traditional qualitative and quantitative techniques and is conducive to triangulation methods. It is hoped that the ideas presented will trigger the interest of some researchers to apply an alternative view to

the study of hospitality phenomena and thus generate relevant research on structural opportunities and constraints of social networks in organizations.

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