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# Development and transformation of collaborative networks in events

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## ABSTRACT

This study examines the mechanisms by which and the reasons that leaders of non-profit organizations transform interorganizational collaborative networks through event attendance. Drawing from a two-wave survey, this study examines the interorganizational networks of 30 individuals who participated in both waves, along with the reported activities of 121 individuals who participated in the second wave of the survey. This mixed methods study found that events transformed participants' weak ties into strong ties and promoted development of collaborative networks. Further, the study found that participants' motivations for attending the event and following up with contacts afterward focused on sharing resources and deepening connections. Implications for understanding how events promote formation and transformation of collaborative networks are discussed.

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Collaboration; event; interorganizational networks; non-profit networks; strength of ties

## Introduction

Non-profit organizations often collaborate with other organizations to generate a broader level of impact beyond organizational boundaries (Guo & Acar, 2005; Wood & Gray, 1991). One way to create networks among organizations and build capacity is through events. Convening non-profit leaders through events, such as conferences, workshops, forums, and contests, can benefit non-profits by providing an opportunity to strengthen old relationships and generate new networks to achieve collaborative goals (Holley, 2011; Kearns, 2004).

For these networks to achieve collaborative goals, however, relationships formed through the events must continue to develop after the events conclude. Without follow-up, ties formed or strengthened during events might disappear or weaken, thereby failing to evolve into meaningful relationships and collaborations (Guo & Acar, 2005; Wood & Gray, 1991). Previous event studies have discussed interorganizational networks and explained structural dynamics of organizations in events (Kimbu & Ngoasong, 2013; Mackellar, 2007; Timur & Getz, 2008). However, the

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motivations and means by which individuals develop, maintain, and leverage these interorganizational networks after events have been inadequately studied.

This study addresses this knowledge gap. The investigation makes three contributions to event and convention studies. First, it directs attention to the mechanisms by which organizations sustain and leverage their investments in event attendance over time. Second, the study innovatively applies network analysis to understand the structural changes of interorganizational networks that can result from events. Finally, the study investigates events as a potential venue for promoting collaborative goals by examining the concept of events from the perspective of the non-profit sector.

The article first introduces the collaborative nature of events, explaining how and why non-profits might generate and transform collaborative networks through events. It then describes the benefits of using network analysis in event studies, hypothesizing mechanisms of potential network changes that may occur through events. Based on a two-wave survey of participants in a non-profit event, the current article investigates the motivations and mechanisms of interorganizational collaborative network changes after events. Implications and suggestions for both event participants and organizers follow.

### **Realizing non-profit collaboration after events**

Although some research points to the competitive dynamics of events—such as power struggles to maintain the status quo of individuals or to construct a new system through dialectic process (Glynn, 2008; Oliver & Montgomery, 2008)—many events generate collaborative outcomes (Andersson & Lundberg, 2013; Arcodia & Whitford, 2007; Jamieson, 2014; Mackellar, 2006). For example, Jamieson (2014) explained that sports tourism events built social capital and encouraged its development in rural communities. The events provided opportunities to share concerns and construct community capacity by bridging seven communities in difficult situations (e.g., poor seasons, loss of services, general low morale, and high out-migration). Mackellar (2006) also described that two coordinated events (i.e., an agricultural convention and a community festival) generated cooperation among the participating organizations and led to regional development based on the collaborative relationships. Innovation and resource exchange also followed as a result of the cooperative events.

Non-profit organizations also benefit from the collaborative nature of events and many share collaborative goals (Khagram, Riker, & Sikkink, 2002). When they “cannot accomplish their goals alone, they create or join networks with other like-minded nonprofits” (Pilny & Shumate, 2012, p. 261) through various forms of cooperative action. Collaboration is one of the most important strategies for non-profits to accomplish their goals and solve social problems that cannot be accomplished by a single party (Guo & Acar, 2005; Wood & Gray, 1991). In the non-profit sector, events enable diverse organizations in one geographic location to come together for a limited time. Such events provide opportunities for unstructured interactions

(Lampel & Meyer, 2008) where non-profits can form new networks or strengthen weak networks for collaboration. Events also serve as a venue where non-profits can share information (Dearing, 2004), engage in collective sense-making (Kania & Kramer, 2011; O'Leary & Vij, 2012), and generate social resources (Gilchrist, 2009).

However, for these network ties to evolve into actual collaboration, non-profits must follow up with other network members. Therefore, non-profits do not reach out randomly, but have specific motivations for maintaining network ties after events. Previous studies suggest that non-profits may develop collaborative networks for a variety of reasons. Resource dependence theories suggest that non-profits collaborate with other non-profits to exchange critical resources, reduce competition for resources, share costs, and generate interorganizational benefits (Grønbjerg, 1993; Pfeffer & Salancik, 1978). Institutional theories posit that non-profits collaborate due to isomorphic behaviors induced by institutional pressures (DiMaggio & Powell, 1983; Oliver, 1990). Institutional forces (e.g., government agencies, legislation, industry, regulators, or donors) may incentivize collaboration or set legal or regulatory requirements that mandate collaboration (Galaskiewicz & Bielefeld, 1998; Guo & Acar, 2005; Sowa, 2009). Other studies have found that collaboration can arise when people serve as board members at multiple organizations (Austin, 2000; Burt, 1980).

The reasons for developing collaborative networks through events might differ from motivations for general non-profit collaboration. This is because events provide an uncommon setting for the participants: unstructured interaction among a diverse group of organizations in one geographic location for a limited time (Lampel & Meyer, 2008). In such situations, resource exchange might be easier (Lampel & Meyer, 2008). On the other hand, participants might have to follow collaborative norms more strictly to meet sector expectations. After events, non-profits choose with whom to follow up for potential collaboration. Not every attendee follows up with other non-profits. However, following up with other non-profits is the first step to develop collaborative networks after events. To examine the reasons for non-profits' contact efforts after events, we ask:

RQ1: Why do participants follow up with new contacts after events?

Further, non-profits might use different communication methods to follow up with other non-profits. Communication media represent an important mechanism in generating non-profit collaboration (Lewis, 2006). Participants at events often differ in their preferences for types of communication media (Fenich, Scott-Halsell, Ogbeide, & Hashimoto, 2014). Therefore, we also ask:

RQ2: What modes of communication do participants use to follow up with contacts after events?

### **Acquaintance and collaborative networks in events**

Two types of networks are pertinent to the mechanism of non-profit collaboration during and after events: acquaintance networks and collaborative networks. That

is, non-profits can either generate new acquaintance and collaborative networks, or they can develop acquaintance networks into collaborative networks. Acquaintance networks describe cognitive, affective relationships between two people (Krackhardt & Hanson, 1993). These networks are generally informal. Acquaintance networks among non-profits may not generate collective impact, as they do not necessarily include common objectives. In contrast, collaborative networks describe working on a joint project or formally sharing resources as part of one's role within the non-profit organization (Kagan, 1991). Collaborative networks among non-profit organizations generate social capital (Brown & Ashman, 1996; Schneider, 2009), build organizational capacities, and solve complex societal problems (Gulati & Gargiulo, 1999; Milward & Provan, 2006).

Many studies assume that events provide opportunities for networking. Therefore, these studies tend to address collaborative outcomes from events (Andersson & Lundberg, 2013; Arcodia & Whitford, 2007; Jamieson, 2014; Mackellar, 2006). However, few studies have accounted for how those networks change and develop after events. To capture the change and development of networks post-event, this study analyzes collaborative and acquaintance networks among non-profit organizations using network measures.

Structural features of network measures have offered new perspectives in event and tourism studies. For example, Kimbu and Ngoasong (2013) examined stakeholder group networks in Cameroon tourism and introduced a tourism development model based on the structural features of the networks (i.e., centralization and centrality). Instead of focusing on each stakeholder's characteristics, the study took advantage of network measures to devise a model that is centrally coordinated but decentralized to reach all representative stakeholders. Timur and Getz (2008) also investigated interorganizational networks of industry, government, and community in urban tourism and each sector's perception of central organizations in the network. Their network analysis revealed that each organization perceives different organizations as central in the network. Their analysis also detected a problem, the lack of network ties among the three sectors. Such ties are essential for sustainable urban tourism.

Because these studies focus on interorganizational networks at a certain point of time, they cannot describe how networks change and transform over time. As non-profits carefully choose other non-profits with which to collaborate, comparing both networks (i.e., acquaintance and collaborative networks) before and after events can discern mechanisms by which non-profits choose and develop collaborations via events. The current study, therefore, investigates how acquaintance and collaborative networks of non-profit organizations change before and after events. It applies network measures (i.e., strength of ties, reciprocity, transitivity, and homophily) to explain mechanisms of the network transformation.

### ***Weak ties and strong ties***

Events provide opportunities for interactions among actors from diverse professional, organizational, and geographical backgrounds (Lampel & Meyer, 2008),

leading to the creation of new acquaintance or collaborative relationships. Another potential benefit of events is to transform weak ties, or weak relationships, into strong ties (strong relationships). Non-profit leaders may be aware of each other, especially within a geographic area, but may not have a strong tie. In the current article, we argue that weak ties may, over time, be seeds to develop strong ties through events among non-profit organizations.

The strength of a tie is a “combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie” (Granovetter, 1973, p. 1361). Weak ties can speed up the search time for useful knowledge across organizational units (Hansen, 1999), and can provide access to non-redundant information (Granovetter, 1983; Levin & Cross, 2004) and reliable technical support and advice (Constant, Sproull, & Kiesler, 1996) “beyond those available in their own social circles” (Granovetter, 1982, p. 113). Strong ties, on the other hand, “have a greater motivation to be of assistance and are typically more easily available” (Granovetter, 1982, p. 113). In short, both weak and strong ties have informational benefits and instrumental benefits, respectively (Krackhardt, 1992).

Weak ties, although frequently studied, have been operationally defined in diverse ways with “intuitive notions” (Granovetter, 1973, p. 1361). The current article summarizes the previous operationalizations of the strength of a tie into three dimensions. The first dimension, reciprocity, is regarded as an important detector for the strength of a tie. Originally included in Granovetter’s definition, a reciprocated tie has been defined as strong; a non-reciprocated tie is considered weak (Friedkin, 1980). That is, if *both parties* recognize their mutual relationship, the ties are reciprocated, and thus, strong. If *only one of the parties* acknowledge or recognize their mutual relationship, it is a non-reciprocated (weak) tie.

The second dimension is closeness. Distance from the counterpart distinguishes strong and weak ties. Close distance represents strong ties. Examples of different types of closeness include the tie to a friend being stronger than the tie to a friend of a friend (Granovetter, 1983), or ties to family and friends being stronger than ties to acquaintances (Gil de Zúñiga & Valenzuela, 2010).

The third dimension is frequency. Frequency has been operationalized as “a combination of the amount of time” and “the intensity” of communication (Granovetter, 1973, p. 1361). More frequent interaction, communication, or contact signifies strong ties, while weak ties display less frequent interaction, communication, or contact.

This study examines whether organizations transform weak ties into strong ties through events using the previously mentioned three dimensions. Drawing on the first dimension, strong ties are those that are reciprocal, or bidirectionally reported. Weak ties are unidirectional, or reported only by one respondent. Previous research suggests that the reciprocity of trust and obligation is a guiding principle underlying alliances among corporations (Bovasso, 1992; Podolny & Page, 1998; Powell, 1990), as well as collaboration among non-profits (O’Leary & Vij, 2012). As such, examining the reciprocity in non-profit networks may uncover the tendency of non-profit collaboration for common objectives. Therefore, we ask whether

participation in events may transform unidirectional, weak ties into reciprocated, strong ties:

RQ3-1: Following an event, are non-profit participants more likely to form new ties with other participants who reported to have relationships with them before events?

To examine the second dimension of weak ties (closeness), the current study applies the concept of transitivity. “Three actors (A, B, C) are transitive if whenever A is linked to B and B is linked to C, then C is linked to A” (Monge & Contractor, 2003, p. 33). When the three actors are transitive, they form a closed triad because the three actors (triad) are all linked to each other without an opening for more ties (closed). Unclosed triads, on the other hand, have an opening to close/link the connections among the three actors. Transitivity can measure whether a person is more likely to form a relationship with a friend of a friend, thus transforming weak ties into strong ties. The current study asks whether events can transform unclosed triads (weak ties) into closed triads (strong ties):

RQ3-2: Following an event, are non-profit participants more likely to form new ties with other participants who knew the same non-profit participant before events?

This study applies the third dimension to distinguish between acquaintance ties and collaborative ties. Whereas an acquaintance relationship signifies merely “knowing” a person, a collaboration relationship signifies “working with the person related to non-profit issues,” which can only be realized based on an acquaintance relationship and will produce more frequent interactions. Thus, the current study examines whether events can transform acquaintance relationships (weak ties) into collaboration relationships (strong ties):

RQ3-3: Are non-profit participants more likely to transform acquaintance ties that existed before events into collaborative ties after events?

### **Organizational type**

One of the features of events is that they bring together diverse organizational actors. For non-profits, this includes addressing different social issues (i.e., across National Taxonomy of Exempt Entities [NTEE] categories). Events create opportunities for leaders from different types of non-profits to encounter each other and potentially form ties. However, homophily is a powerful predictor of collaborative relationships among non-profit organizations. Non-profits are more likely to form collaborative networks with other non-profits focused on the same issue (Atouba & Shumate, 2015; Pilny & Shumate, 2012). Therefore, it is unknown whether the unique opportunities facilitated by events will be enough to overcome the tendency for similar non-profits to form ties. Therefore, the current research asks the following:

RQ4: Following an event, are non-profit participants more likely to form new ties with other participants in organizations in the same type of non-profit (NTEE code) as they are with participants in organizations of different types of non-profits?

## Method

### *Research setting*

This research used an event on the West Coast of the United States. The 2-day event was established in 2005 to assist in meeting the identified needs of the non-profit community. Due to space limitations, enrollment is limited to 250 participants per day. The event has enrolled at capacity each of the last few years. Event attendees receive reference materials, faculty biographies, and a roster of participants so people can stay in touch post-event if they wish. A continental breakfast, offered 30 minutes before the event, typically attracts about 35% of the attendees.

### *Participants*

The sample for this study was obtained from the event in January of 2013, during the first session on the first day of the event. Out of the 428 people that registered for the event, 89 individuals participated in the first wave of the study, and 121 individuals participated in the second wave of the study 3 months after the event. Thirty participants from 24 organizations participated in both waves. The individuals had diverse statuses in non-profits, including board members, executive directors, presidents, CEOs, and staff members.

### *Procedures*

Network roster surveys with the names of all the event participants and their affiliations were used in the two-wave study. The survey required approximately 30 minutes of participants' time to complete. The first survey was in paper form, and the participants had to check by hand the box that applied to them. It was distributed and collected during the first session on the first day of the event. Participation was voluntary. The survey was not conducted on the second day of the event, as there were participants who attended the conference both days and they could have become acquainted with other people during the first day of the event. To boost the response rate to the survey, the event coordinator made an announcement during the session asking participants to complete the survey. The survey provided information that the survey participants would be contacted again 3 months after the event. Three months after the event, all the registered individuals for the event were contacted by e-mail to take the second survey. The e-mail had a link to an online survey in which the participants had to click on the box that applied to them.

### *Measures*

#### *Network ties*

In both waves, participants were given a roster of the other participants. *Acquaintance ties* were indicated when participants checked yes corresponding to the following statement: "I know this person." In the first wave survey, 79 participants from

**Table 1.** Descriptive statistics of two waves.

	First wave		Second wave	
	Acquaintance	Collaborative	Acquaintance	Collaborative
Number of participants (number of people who took the survey)	79	52	106	61
Number of organizations (number of orgs the survey participants are from)	58	38	79	49
Number of ties (number of relationships the survey participants indicated)	1,079	361	1,417	554
Number of nodes (number of people the survey participants indicated)	250	174	336	235
In-degree centrality (average number of ties coming into nodes)	4.32	2.07	4.22	2.36
Out-degree centrality (average number of ties going from the survey participants)	13.66	6.94	13.37	9.08
Density (actual ties/all possible ties if all nodes were connected to each other)	0.05	0.04	0.04	0.04

Note. The descriptives are based on the participants who actually took the survey in each wave.

58 organizations indicated 1,079 ties of acquaintance to 250 nodes (participants). In the second wave survey, 106 participants from 79 organizations indicated 1,417 ties of acquaintance to 336 nodes. *Collaborative ties* were operationalized by participants indicating that they “work(ed) with this person on tasks related to (their) non-profit work.” In the first wave, 52 participants from 38 organizations indicated 361 ties of collaboration to 174 nodes. In the second wave, 61 participants from 49 organizations indicated 554 ties of collaboration to 235 nodes. Based on financial information public on Guidestar (2013), the survey participants’ organizations had an average revenue of \$12,088,493 (standard deviation [SD] = 20,839,004;  $n = 50$ ) and an average asset of \$19,347,572 (SD = 40,059,512;  $n = 49$ ). The descriptive information about the survey participants in each wave is summarized in Table 1.

### Organizational type

The current study classifies non-profit types into 10 categories based on NTEE classification: (1) animal welfare; (2) civil rights and advocacy organizations; (3) education; (4) foundations; (5) health; (6) poverty and human services; (7) religious; (8) women, youth, and children; (9) for-profit; and (10) other.

### Follow-up methods and reasons

In the second wave of the survey, participants were prompted with a question as to whether they had “followed up with any new contacts (they) made at the symposium” or if they had “followed up with any renewed contacts (they) saw at the symposium.” If they responded yes to either question, they were prompted to “describe the ways (they) followed up with the contact.” These open-ended responses included information about both the methods of contact and the reasons for that follow-up.

### Analysis

For the current article, we conducted a mixed methods analysis using social network analysis and thematic analysis of qualitative data. We adopted a complementary

**Table 2.** Changes of relationships from the first wave to the second wave.

	0→0	0→1	1→0	1→1
Acquaintance	806	17	19	28
Collaborative	831	23	3	13

*Note.* This table illustrates the number of acquaintance relationship and collaborative relationship of individuals who participated in both waves of the study. The table explains how the two relationships changed from the first wave to the second wave. The “0” indicates no relationship and “1” indicates an existence of a relationship. For example, “19” in the first row, fourth column, indicates that 19 acquaintance relationships were reported among the survey participants in the first wave and disappeared in the second wave. The “23” in the second row, third column, indicates that survey participants indicated 23 relationships as having no collaboration in the first wave, which changed to collaborative relationships in the second wave.

strengths stance (Greene, 2007), utilizing network analysis to analyze patterns of relationships and relationship changes not accessible through qualitative data, and utilizing qualitative data to answer research questions not answerable through network analysis. As such, we use an extension design (Greene, 2007), where each method is targeted to illuminate different aspects of the phenomenon under investigation.

Thematic analysis (Saldaña, 2012) was used to answer the first two research questions posed in this study. Owen (1984) suggests that themes are indicated by (1) recurrences of meaning; (2) repetition of keywords or phrases; and (3) forcefulness. In this analysis, we examined the open-ended responses to questions completed in the second wave survey.

Network ties in two different times are not independent of each other because the network structure in the first wave can influence the formation of relationships in the second wave. As such, network changes over time are usually examined by using different approaches (e.g., bootstrap-permutation approach [Snijders & Borgatti, 1999] and computer simulation [Ripley & Snijders, 2010]).<sup>1</sup> Before examining research questions 3 and 4, we compared the networks reported by the 30 participants from Time 1 to Time 2, conducting a paired sample *t*-test in order to test whether the number of ties increased from Time 1 to Time 2. We used a bootstrap and permutation approach to examine whether the number of ties between the two waves is significantly different than the distribution of randomly sampled networks across 5,000 trials.

To test research questions 3 and 4, we conducted a Simulation Investigation for Empirical Network Analysis (SIENA; see Ripley & Snijders, 2010) within the R-project package. Using computer simulation, this program examines the likely sequence of network changes that occurred between Time 1 and Time 2. Further, the method allows for the simultaneous estimation of the influence of existing network structure (i.e., reciprocity, transitivity) and attributes (i.e., NTEE classification). As such, it is both an appropriate and a robust method for such analyses. Estimates were based on the network structure and changes across time periods (see Table 2 for a summary of the changes that occurred over time).

<sup>1</sup> Because the *t*-test used in the current article is based on a bootstrap and permutation approach accounting for the structures of the relationships, power analysis is not available (Snijders & Borgatti, 1999).

## Results of qualitative analysis

Research questions 1 and 2 were answered by examining the qualitative data derived from the second-wave survey. The data indicate that for a number of people the event experience was followed by subsequent contact with other participants. Among the 66 second-wave respondents who answered the open-ended questions (55% of participants), 131 follow-up connections were reported.

### *Reason for contact beyond the event*

Research question 1 asked why participants decided to follow up with contacts after the event. Of the 66 open-ended respondents, 43 reported making follow-up contact. Initiative for making contact after the symposium fell into three categories: the survey respondent reaching out to another participant ( $n = 10$ ), the survey respondent being contacted by another participant ( $n = 2$ ), and a survey respondent reaching out to two or more participants ( $n = 10$ ). One participant stated of their post-symposium contacts that “too many (were) renewed to mention.” An additional 20 respondents noted making contact, but did not specify who initiated the contact.

Thirteen respondents identified how long it had been since they had spoken with a person they had once known and subsequently reconnected with after the symposium. The length of time since they had seen them previously varied between 1 month to 11 years. The most frequent span of lapsed time mentioned was “1 year” ( $n = 4$ ) and “a few months” ( $n = 3$ ). Other intervals included *1 month, at least 6 months, 2 years, several years, and 10 years.*

Four themes emerged from the data analysis: resource acquisition, resource provision, resource exchange, and the deepening of connections. Each of these is discussed in turn.

*Resource acquisition* was the most frequently reported reason for contacting after events. *Resource acquisition* included knowledge acquisition. Participants indicated, in particular, that they were interested in learning how to recruit board members and about particular tools and resources for clients ( $n = 6$ ), how to further their networking by obtaining contact information for a third party ( $n = 6$ ), how to re-engage consultants ( $n = 1$ ), and new ideas (e.g., for potential field trips for clients,  $n = 1$ ). Examples of responses included, “we got together to discuss mutual interests,” and “I attempted to persuade her to work on a project with us.”

In addition to seeking resources, respondents indicated that they also *provided resources*. Examples included expertise, management services, and educational materials. Responses (each  $n = 1$ ) included, “I provided some technical support to an attendee,” “I sent presentation materials from an event to new contacts,” “(I) coordinated my company’s participation in a presentation,” and “(I) scheduled a meeting regarding possible grant support.”

The respondents also mentioned that they sought to engage in some sort of trade or to explore collaboration, which we term *resource exchange*. These responses (each  $n = 1$ ) included, “I e-mailed and renewed collaborative conversations,” “(I) met a woman I sat with and we later exchanged ideas about a month later.”

The respondents also mentioned their desire to engage more deeply with other participants after the event, which we describe as *deepening connections*. These responses (each  $n = 1$ ) included, “I made contact with them and invited them to visit our institution,” “I started noticing them at other events in our community afterward,” and “(I) established a social (beyond work) relationship.”

### Types of contact

Research question 2 asked about the method of communication that most participants used to follow up with their new or renewed contacts after the event. Seventy-five percent of the respondents mentioned the communication media they used when they followed up. The primary identified methods of contact were e-mail (31%,  $n = 21$ ) and in-person meetings (27%,  $n = 18$ ). Participants also followed up via telephone (10%,  $n = 7$ ), LinkedIn (4%,  $n = 3$ ), attendance at events (2%,  $n = 2$ ), and following blogs (1%,  $n = 1$ ). Because this was an open-ended question, the remaining 25% of participants ( $n = 17$ ) generally stated that they followed up or contacted the person instead of identifying the exact mode of communication.

### Results from network analysis

The network analysis portion of this study examined the change of interorganizational networks among non-profits in events. Before investigating research questions 3 and 4, we conducted a  $t$ -test to examine whether the acquaintance and collaborative ties in the second wave have a significant increase from the ties in the first wave. The results from the  $t$ -test (see Table 3 in the “number of ties” row) suggest that the difference in the number of ties between the two waves for acquaintance relationships was not significant ( $t[29] = 0.19, p > .05$ ); in fact, the number of ties for acquaintance relationships decreased slightly, from 47 to 45. However, the number of ties for collaborative relationships increased after the event

**Table 3.** Changes in networks.

		Observation time (wave)	
		1	2
Acquaintance	Density	0.054	0.052
	Average degree	1.57	1.50
	Number of ties	47	45
Collaborative	Density	0.02	0.04
	Average degree	0.53	1.20
	Number of ties	16*	36*

*Note.* This table describes the structural changes of the acquaintance and collaborative network between the first and the second wave among individuals who participated in both waves of the study. Density refers to the number of actual relationships divided by all possible relationships if all participants were connected to each other. Average degree refers to the average number of the participants’ relationships divided by the number of participants. Number of ties refers to the total number of relationships reported by the survey participants. The change in the number of ties (in bold) is tested by the  $t$ -test. The  $t$ -test results suggest that the number of acquaintance ties was not statistically different in the first and second wave, while the number of collaborative ties was statistically different in both waves at the level of .05.

\* $p < .05$ .

from 16 to 36 ( $t[29] = 2.18, p < .05$ ). The difference between the collaborative relationships in the first and second waves was significant (see [Table 2](#) and [Table 3](#) for a summary of these changes).

Research question 3–1 asked whether participants would demonstrate a tendency to reciprocate ties after events. Because we conducted a SIENA on research questions 3 and 4, the significance of the results are determined by  $t$ -value, which is a value of *estimates* (estimated effect of each network measure: reciprocity, transitivity, strengthening of ties, homophily) divided by *standard error* of the function generated through the computer simulation (Ripley & Snijders, 2010). If “these ( $t$ -values) are larger than 2 in absolute value, all are significant at the 0.05 significance level” (Ripley & Snijders, 2010, p. 31). The reciprocal tendency for acquaintance relationships (*estimates* = 1.49, *SE* = 1.03,  $t = 1.45$ ) was not significant. However, the results for collaborative relationships were significant (*estimates* = 3.39, *SE* = 1.22,  $t = 2.78$ ).

Research question 3–2 asked whether organizations would develop more relationships resulting in transitive closure after events. To test research question 3–2, we examined four parameters. The first two parameters corresponded to closing transitive ties among the 30 participants who completed both surveys for acquaintance and collaborative relationships, respectively. The second two parameters focused on commonly reported relationships of the remaining 428 participants on the roster who did not complete both surveys. These networks of co-reported acquaintances and collaborators were valued, indicating the number of common individuals with whom the participants indicated they had a relationship. Results for acquaintance relationships were partially supported as the result of transitive ties measure was significant (*estimates* = 2.04, *SE* = 0.71,  $t = 2.87$ ), but was not supported for the analysis of common ties with other people on the roster who did not participate in the survey (*estimates* =  $-.37$ , *SE* = .65,  $t = -.57$ ). The result for collaborative relationships was also partially supported. The transitive ties measure was supported (*estimates* = 2.77, *SE* = 1.15,  $t = 2.41$ ), but not for the common ties with non-participating individuals on the roster (*estimates* = .02, *SE* = .24,  $t = .08$ ).

Research question 3–3 asked whether participants who were acquainted with other individuals before the event would be more likely to form collaborative relationships with other individuals. The result was significant (*estimates* = 3.58, *SE* = .74,  $t = 4.84$ ).

Research question 4 asked if non-profits in the same NTEE category would develop more relationships after events. The analysis confirms that ties within NTEE categories were more likely to be created and retained for both acquaintance relationships (*estimates* = 1.18, *SE* = .59,  $t = 2.01$ ) and collaborative relationships (*estimates* = 1.75, *SE* = .53,  $t = 3.30$ ).

## Discussion

The present study examined how and why organizations in the non-profit sector leverage event attendance to transform and benefit from interorganizational

collaborative networks over time. Results of the network analysis suggest that participants formed new collaborative relationships through this event. The total number of ties increased from 16 to 36, with 20 new collaborative ties created and 3 old ones disappearing. Although acquaintance ties decreased only slightly in total (from 47 to 45), 17 new acquaintance ties were created and 19 old acquaintance ties disappeared, indicating overall reconfiguration of ties after the event. The creation of a significant number of new collaborative ties and the reconfiguration of acquaintance ties corresponds with the previous literature that events provide opportunities for intense and concentrated interaction in a limited time and space (Lampel & Meyer, 2008). The increase of collaborative ties 3 months after the event specifically suggests that events can benefit the non-profit sector *over time* by providing opportunities for collaboration, important non-profit strategies to accomplish their goals and solve social problems that cannot be accomplished by a single party (Guo & Acar, 2005; Wood & Gray, 1991).

Network measures offer a more detailed explanation for the mechanism of network changes. For instance, the results suggest that participants are more likely to reciprocate collaboration ties after the event (research question 3-1). Reciprocated ties represent strong ties; non-reciprocated ties can be thought of as weak ties (Friedkin, 1980; Granovetter, 1973). This suggests that events can transform non-reciprocated, weak ties into reciprocated, strong ties. While only one side of a collaborative relationship reported that a party collaborated with a counterpart before the event, both sides of the relationship reported the collaborative relationship 3 months after the event. This result indicates that before the event, the collaborative relationship was not strong enough to be perceived mutually by both parties. During and after the event, however, both parties may have initiated or renewed their joint projects, which led both to perceive the relationship as collaborative.

Results on research question 3-2 suggest that transitivity explains the transformation mechanism for both relationships. The transitivity measure showed more ties after the event for both acquaintance and collaborative relationships. When examining common ties to others on the roster who did not participate in the survey, the effect was null or negative. One possible explanation is that the participant network had more information about potential ties than the common ties to others in the roster, since non-participants did not indicate ties.

The results also suggest that events can transform acquaintance relationships into collaborative relationships (research question 3-3). This supports the strengthening of weak ties through events, as the degree of closeness increased from acquaintance ties to collaborative ties (Baer, 2010; Granovetter, 1973, 1983).

Analysis also indicates that participants are more likely to form relationships among the same organizational types (research question 4). This result corresponds with those from previous studies, in that different types of non-profits demonstrate different characteristics in performing activities (Suarez & Hwang, 2008). Further, non-profits are more likely to form online relationships based on similar types of common social aims or goals (Pilny & Shumate, 2012). This result suggests that formation of ties in events is based on the principle of homophily in regards to the

organizational type. Homophily posits there is a higher rate of contact among similar people than among dissimilar people (McPherson, Smith-Lovin, & Cook, 2001). This study suggests that homophily influences both the formation of new weak ties (acquaintance ties) and the creation of strong ties (collaborative ties) among organizations in the same NTEE category, even in the presence of diverse event participants across the non-profit sector.

To recapitulate, the results from the network analysis correspond with previous studies that found events provide opportunities for intense and concentrated interaction in a limited time and space (Lampel & Meyer, 2008). The results also explain the structural mechanism of how the interactions are developed into collaboration over time (i.e., increase of collaborative ties, completion of collaborative ties through reciprocation, transitivity, and homophily, or strengthening of acquaintance ties into collaborative ties). Specifically, results from research questions 3–1 and 3–2 were not significant in regard to acquaintance ties, but were significant in every result related to collaborative ties. By classifying two types of networks pertinent to events, the current article suggests that events do not merely provide opportunities for acquaintance with others for the duration of the events, but they actually play a part in developing and strengthening collaboration after events conclude.

The results from the qualitative analysis reinforce many of the findings from the network analysis. Participants followed up to exchange resources. Often, this exchange occurred to deepen connections with people with whom they already had connections. These actions suggest a desire to turn weak ties into strong ties. To achieve this goal, attendees invested time and energy to pursue post-event connections with fellow participants. The degree of this investment (e.g., in-person meetings versus connecting on LinkedIn) suggests that deepening connections provides benefits to the participants.

Resources (their acquisition, provision, and exchange) appear to motivate follow-up contact. The participants mainly reported resource-related reasons for following up with the networks, supporting resource dependence theory (Grønbjerg, 1993; Pfeffer & Salancik, 1978). Participants seemed to focus on contacting organizations for resources, rather than for other reasons (Austin, 2000; Burt, 1980; DiMaggio & Powell, 1983; Oliver, 1990). This supports Lampel and Meyer's assertion that events provide a venue for information and resource exchange.

Resources that participants ultimately secured ranged from gaining information, to accessing to new contacts, to working collaboratively on new projects not previously imagined. Although event participants followed up with contacts for resource-related reasons, their actions did not just depend only on available resources (Grønbjerg, 1993; Pfeffer & Salancik, 1978). Instead, they actively created opportunities to generate new resources. This generative capacity has theoretical implications for resources dependence theory.

Whereas many previous studies suggest collaborative outcomes are naturally generated from events (e.g., social capital or closer relationships among participants, Andersson & Lundberg, 2013; Arcodia & Whitford, 2007; Jamieson, 2014; Mackellar, 2006), this study found more concrete collaborative outcomes were

intentionally sought out, such as strategically working on joint projects and sharing resources. Thus, events can be seen as fields of potential that, through their intentional design of structures and boundaries (e.g., time, space, and logistics), increase the likelihood of connecting and coming into contact with others in meaningful ways that promote collective action.

In summary, the results from this study clarify how and why organizations transform and take advantage of interorganizational networks through events over time. Results point to the mechanisms of how events contribute to new collaborations and meaningful interorganizational networks (i.e., increasing collaborative ties; completing collaborative ties through reciprocation, transitivity, and homophily; or strengthening acquaintance ties into collaborative ties). As non-profits contact their counterparts after participating in an event, those strengthened ties can foster collaboration around resources and perhaps lead to the subsequent production of community development (Jamieson, 2014; Mackellar, 2006).

### Limitations and implications

Like all studies, the current investigation had some limitations. First, the response rate was modest, although the response rate is not low for a non-compensated e-mail survey. The individual response rate was 21.81% for the first wave, 26.43% for the second wave, and 6.55% for participation in both waves. The organizational response rate was 23.77% for the first wave and 32.38% for the second wave. Additionally, results on research question 3–2 were partially significant with mixed results, which might have been due to the low response rate. Several attempts were made to complement the response rate and confirm that the response rate was still meaningful. For example, we examined whether the participants for both waves were similar to participants in one of either of the waves. In terms of the number of ties, there was no significant difference between the 30 individuals who participated in both waves and the rest of the participants in the first wave (acquaintance:  $t(74) = .80, p > .05$ ; collaborative:  $t(75) = 1.08, p > .05$ ) and the second wave (acquaintance:  $t(75) = .37, p > .05$ ; collaborative:  $t(74) = 1.28, p > .05$ ), excluding outliers in the rest of the participants who were not within the range of three SDs. The status of the participants in both waves was also similar to that of the rest of the individuals in the roster, giving us added confidence in the result. When classifying the participants' status into three categories (board member, staff, and others), there was no significant difference between the co-participants and the rest ( $\chi^2 = 7.13 [3, N = 458], p > .05$ ).

Based on a two-wave longitudinal survey, the study inevitably could capture only the differences between the two waves and could not show new relationships that might have degraded over time. There also could be recall errors if the participants did not follow up frequently throughout the 3-month period. Specifically, because a continental breakfast was offered before the event, participants could have reported those who they just met at the breakfast as acquaintance ties in the first

wave and then have forgotten them over time. This could have decreased the number of acquaintance ties in the second wave.

Future studies should acquire information about gradual changes between the two waves by conducting more surveys in shorter terms or conducting in-depth interviews with the participants over time. In addition, this investigation studied only one event. These studies should focus on other events to assess how event dynamics differ across the field. Future studies can also examine how participants realize and take advantage of resources acquired and exchanged from events over time. Conceptually, such research can provide new insights about events in relation to resource dependence theory. Practically, it can generate evidence-based suggestions to maximize event benefits over time. Future research should also investigate and classify different levels of event outcomes. Previous research suggests various levels of outcomes are generated from events, such as at the individual, organizational, and community levels (Jamieson, 2014; Kimbu & Ngoasong, 2013; Mackellar, 2006; Oliver & Montgomery, 2008; Timur & Getz, 2008). Distinguishing different levels of event outcomes will offer additional analytic perspectives on event studies.

For practitioners who seek to design events that weave networks (e.g., Holley, 2011; Kearns, 2004), the results of the current study suggest some key design principles. First, events should provide structured autonomy (Lampel & Meyer, 2008), particularly times and locations within the event where participants can purposefully explore and pursue shared personal and organizational interests. These connection opportunities within the event's logistical boundaries will promote the formation of acquaintance ties and the strengthening of weak ties.

Second, because collaborative ties are more likely to be created among organizations with similar goals (i.e., NTEE category), events should explicitly offer information about the various types of organizations in attendance and their respective goals. Alternatively, the event could allot a specific time and space where organizations with shared interests can connect during lunches or break times. For example, seating at lunch could offer group tables for organizations who want to meet other non-profits that share their goals.

A third recommendation is to use strategic communication and social media outreach before and after the event. Sending e-mail notifications and posting social media suggestions prior to the event would prime participants to approach the event strategically. With such advanced notice, organizations could be thinking in advance about what connections they want to make, and what collaborative project ideas they could bring to share with other organizational leaders in attendance. Post-event, organizers should send out follow-up e-mails or social media posts to encourage people to follow up with people they met to stay connected and deepen relationships.

Finally, when considering whom to invite to an event, organizers should think in terms of networks. How can the event be designed to strengthen existing weak ties? Events that bring together people who have existing weak ties tend to generate more collaborative relationships among non-profits than events that bring together strangers. Making a roster of attendees available to all participants, along with

contact information and potential collaboration opportunities, may spur connections that extend well beyond the event itself. Highlighting opportunities for resource acquisition and exchange would be particularly beneficial.

## Conclusion

The present study examined how and why organizations in the non-profit sector transform and take advantage of interorganizational networks through events over time. Results suggest that events are active venues for creating new ties, renewing old ties, and strengthening weak ties. Results also indicate that participants strategically follow up with the networks for resource-related reasons.

This study makes three contributions to convention and event studies. First, beyond outcomes, it directs attention to the mechanisms by which events change interorganizational networks. Previous studies have focused on outcomes of events, such as building social capital (Arcodia & Whitford, 2007), binding community (Jamieson, 2014), enhancing cooperation (Mackellar, 2006), and generating economic impact (Lee & Back, 2005). In contrast, this study provides new perspectives on event studies by paying attention to the mechanism of how such outcomes occur. Specifically, the study found that resource-related reasons explain why the networks are changed after events. Communication modes for participant follow-up suggest strategic and intentional development of networks after events.

Second, the study innovatively applies network analysis to understand interorganizational network-level changes resulting from events. Network measures have been used in a few event studies to depict relative status of entities in the whole network at a certain point in time (e.g., Glynn, 2008; Kimbu & Ngoasong, 2013; Mackellar, 2007; Oliver & Montgomery, 2008; Timur & Getz, 2008). In this study, network concepts (e.g., strength of ties, reciprocity, transitivity, and homophily) uniquely capture the formation and transformation of interorganizational relationships before and after events.

Finally, by looking at events through the lens of the non-profit sector, this study illuminates events as potential venues for pursuing collaborative goals. The study does not simply examine whether networks are generated through events. Rather, this investigation examines whether those networks sustain and develop over time (i.e., even after 3 months). Previous scholars have focused on both competitive features (Glynn, 2008; Oliver & Montgomery, 2008) and collaborative features (Arcodia & Whitford, 2007; Jamieson, 2014; Mackellar, 2006) of events. This research highlights a different aspect, suggesting that collaborative networks formed or strengthened through events cultivate conditions that may subsequently yield the fruit of collective action.

Results from this study suggest that over time, events can build capacity of organizations to form and strengthen interorganizational networks. By detecting network changes over time, event attendance was shown to be a catalyst for developing this increased capacity. Non-profit organization leaders experienced new and deeper relationships with other leaders who attended, transforming relationships

from acquaintance into collaborative. The study also found that events of limited duration provide meaningful opportunities for resource acquisition and exchange to support collaborative goals.

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## References

- Andersson, T. D., & Lundberg, E. (2013). Commensurability and sustainability: Triple impact assessments of a tourism event. *Tourism Management, 37*, 99–109.
- Arcodia, C., & Whitford, M. (2007). Festival attendance and the development of social capital. *Journal of Convention & Event Tourism, 8*(2), 1–18.
- Atouba, Y. C., & Shumate, M. (2015). International nonprofit collaboration: Examining the role of homophily. *Nonprofit and Voluntary Sector Quarterly, 44*(3), 587–608.
- Austin, J. E. (2000). *The collaboration challenge: How nonprofits and businesses succeed through strategic alliances*. San Francisco, CA: Jossey-Bass Publishers
- Baer, M. (2010). The strength-of-weak-ties perspective on creativity: A comprehensive examination and extension. *Journal of Applied Psychology, 95*(3), 592.
- Bovasso, G. (1992). A structural analysis of the formation of a network organization. *Group & Organization Management, 17*(1), 86–106.
- Brown, L. D., & Ashman, D. (1996). Participation, social capital, and intersectoral problem solving: African and Asian cases. *World Development, 24*(9), 1467–1479.
- Burt, R. S. (1980). Cooptive corporate actor networks: A reconsideration of interlocking directorates involving American manufacturing. *Administrative Science Quarterly, 25*(4), 557–582.
- Constant, D., Sproull, L., & Kiesler, S. (1996). The kindness of strangers: The usefulness of electronic weak ties for technical advice. *Organization Science, 7*(2), 119–35.
- Dearing, J. W. (2004). Improving the state of health programming by using diffusion theory. *Journal of Health Communication, 9*(1), 21–36.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160.
- Fenich, G. G., Scott-Halsell, S., Ogbeide, G. C., & Hashimoto, K. (2014). What the Millennial generation from around the world prefers in their meetings, conventions, and events. *Journal of Convention & Event Tourism, 15*(3), 236–241
- Friedkin, N. (1980). A test of structural features of Granovetter's strength of weak ties theory. *Social Networks, 2*(4), 411–422.
- Galaskiewicz, J., & Bielefeld, W. (1998). *Nonprofit organizations in an age of uncertainty: A study of organizational change*. New York, NY: Aldine de Gruyter.
- Gil de Zúñiga, H., & Valenzuela, S. (2011). The mediating path to a stronger citizenship: Online and offline networks, weak ties, and civic engagement. *Communication Research, 38*(3), 397–421.
- Gilchrist, A. (2009). *The well-connected community: A networking approach to community development* (2nd ed.). Bristol, UK: The Policy Press.

- Glynn, M. A. (2008). Configuring the field of play: How hosting the Olympic Games impacts civic community. *Journal of Management Studies*, 45(6), 1117–1146.
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380.
- Granovetter, M. S. (1982). The strength of weak ties: A network theory revisited. In P. V. Marsden, & N. Lin (Eds.), *Social structure and network analysis* (pp. 105–130). Beverly Hills, CA: Sage.
- Granovetter, M. S. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory*, 1(1), 201–233.
- Greene, J. C. (2007). *Mixed methods in social inquiry* (Vol. 9). San Francisco, CA: John Wiley & Sons.
- Grønberg, K. A. (1993). *Understanding nonprofit funding*. San Francisco, CA: Jossey-Bass.
- Guidestar. (2013, January). GuideStar Search. Retrieved from <https://www.guidestar.org/search>
- Gulati, R., & Gargiulo, M. (1999). Where do interorganizational networks come from? *American Journal of Sociology*, 104(5), 1439–1493.
- Guo, C., & Acar, M. (2005). Understanding collaboration among nonprofit organizations: Combining resource dependency, institutional, and network perspectives. *Nonprofit and Voluntary Sector Quarterly*, 34(3), 340–361. <http://dx.doi.org/10.1177/0899764005275411>
- Hansen, B. E. (1999). Threshold effects in non-dynamic panels: Estimation, testing, and inference. *Journal of Econometrics*, 93(2), 345–368.
- Holley, J. (2011). *Network weaver handbook*. Athens, OH: Network Weaver Publishing.
- Jamieson, N. (2014). Sport tourism events as community builders—how social capital helps the “locals” cope. *Journal of Convention & Event Tourism*, 15(1), 57–68.
- Kagan, S. L. (1991). *United we stand: Collaboration for child care and early education services*. New York, NY: Teachers College Press.
- Kania, J., & Kramer, M. (2011). Collective impact. *Stanford Social Innovation Review*, Winter, 36–41.
- Kearns, K. P. (2004). Management-capacity building in the Pittsburgh region. *Nonprofit Management & Leadership*, 14, 437–452.
- Khagram, S., Riker, J. V., & Sikkink, K. (2002). From Santiago to Seattle: Transnational advocacy groups restructuring world politics. *Restructuring World Politics: Transnational Social Movements, Networks, and Norms*, 1, 3–23.
- Kimbu, A. N., & Ngoasong, M. Z. (2013). Centralised decentralisation of tourism development: A network perspective. *Annals of Tourism Research*, 40, 235–259.
- Krackhardt, D. (1992). The strength of strong ties: The importance of philos in organizations. In N. Nohria, & R. G. Eccles (Eds.), *Networks and organizations: Structure, form, and action* (pp. 216–239). Boston, MA: Harvard Business School Press.
- Krackhardt, D., & Hanson, J. (1993). Informal networks: The company behind the chart. *Harvard Business Review*, July–August, 71(4), 104–111.
- Lampel, J., & Meyer, A. D. (2008). Guest editors introduction: Field-configuring events as structuring mechanisms: How conferences, ceremonies, and trade shows constitute new technologies, industries, and markets. *Journal of Management Studies*, 45(6), 1025–1035.
- Lee, M. J., & Back, K. J. (2005). A review of convention and meeting management research 1990–2003: Identification of statistical methods and subject areas. *Journal of Convention & Event Tourism*, 7(2), 1–20.
- Levin, D. Z., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management Science*, 50(11), 1477–1490.
- Lewis, L. K. (2006). Collaborative interaction: Review of communication scholarship and a research agenda. In C. S. Beck (Ed.), *Communication sourcebook 30* (pp. 197–247). Mahwah, NJ: Lawrence Erlbaum Associates.
- Mackellar, J. (2006). An integrated view of innovation emerging from a regional festival. *International Journal of Event Management Research*, 2(1), 37–48

- Mackellar, J. (2007). Conventions, festivals, and tourism: Exploring the network that binds. *Journal of Convention & Event Tourism*, 8(2), 45–56.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27, 415–444.
- Milward, H. B., & Provan, K. G. (2006). *A manager's guide to choosing and using collaborative networks (Vol. 8)*. Washington, DC: IBM Center for the Business of Government.
- Monge, P. R., & Contractor, N. S. (2003). *Theories of communication networks*. New York, NY: Oxford University Press.
- O'Leary, R., & Vaj, N. (2012). Collaborative public management: Where have we been and where are we going? *The American Review of Public Administration*, 42(5), 507–522.
- Oliver, C. (1990). Determinants of interorganizational relationships: Integration and future directions. *Academy of Management Review*, 15(2), 241–265.
- Oliver, A. L., & Montgomery, K. (2008). Using field-configuring events for sense-making: A cognitive network approach. *Journal of Management Studies*, 45(6), 1147–1167.
- Owen, W. F. (1984). Interpretive themes in relational communication. *Quarterly Journal of Speech*, 70(3), 274–287. <http://dx.doi.org/10.1080/00335638409383697>
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York, NY: HarperCollins.
- Pilny, A., & Shumate, M. (2012). Hyperlinks as extensions of offline instrumental collective action. *Information, Communication & Society*, 15(2), 260–286.
- Podolny, J. M., & Page, K. L. (1998). Network forms of organization. *Annual Review of Sociology*, 24, 57–76.
- Powell, W. W. (1990). Neither market nor hierarchy: Network forms of organization. In B. Staw, & L. L. Cummings (Eds.), *Research in organizational behavior* (pp. 295–336). Greenwich, CT: JAI Press.
- Ripley, R. M., & Snijders, T. A. B. (2010). *Manual for siena version 4.0*. Retrieved from [http://www.stats.ox.ac.uk/~snijders/siena/s\\_man400.pdf](http://www.stats.ox.ac.uk/~snijders/siena/s_man400.pdf)
- Saldaña, J. (2012). *The coding manual for qualitative researchers*. London, UK: Sage.
- Schneider, J. A. (2009). Organizational social capital and nonprofits. *Nonprofit and Voluntary Sector Quarterly*, 38(4), 643–662.
- Snijders, T. A., & Borgatti, S. P. (1999). Non-parametric standard errors and tests for network statistics. *Connections*, 22(2), 161–170.
- Sowa, J. E. (2009). The collaboration decision in nonprofit organizations: Views from the front line. *Nonprofit and Voluntary Sector Quarterly*, 38(6), 1003–1025.
- Suarez, D. F., & Hwang, H. (2008). Civic engagement and nonprofit lobbying in California, 1998–2003. *Nonprofit and Voluntary Sector Quarterly*, 37, 93–112.
- Timur, S., & Getz, D. (2008). A network perspective on managing stakeholders for sustainable urban tourism. *International Journal of Contemporary Hospitality Management*, 20(4), 445–461.
- Wood, D. J., & Gray, B. (1991). Toward a comprehensive theory of collaboration. *The Journal of Applied Behavioral Science*, 27(2), 139–162. doi: <https://doi.org/10.1177/0021886391272001>