Work-team bonding and bridging social networks, team identity and performance effectiveness

Kaisa Henttonen
School of Business/TBRC, Lappeenranta University of Technology, Lappeenranta, Finland

Jan-Erik Johanson
School of Management, University of Tampere, Tampere, Finland, and

Minna Janhonen
Work and Society Team, Finnish Institute of Occupational Health, Helsinki, Finland

Abstract

Purpose – The focus in this paper is on the extent to which bonding and bridging social relationships predict the performance effectiveness and attitudinal (identity) outcomes.

Design/methodology/approach – The research was survey-based, involving 76 work teams and a total of 499 employees in 48 organisations.

Findings – The analysis reveals a positive relationship between both bonding and bridging relationships and performance effectiveness and attitudinal outcomes. Team identity mediates the relationship between the team’s social-network structure and its performance effectiveness.

Research limitations/implications – The research investigates the performance effectiveness and attitudinal outcomes of social networks simultaneously, which is rare, but for study-design reasons fails to investigate behavioural outcomes. More extensive data would reveal more about the possible interaction between bridging and bonding.

Practical implications – In order to improve performance effectiveness managerial attention should focus on building a team and social networks.

Originality/value – The research shows that team identity fully mediates the influence of bonding and bridging social relationships. This finding sheds light on the processes that mediate performance effectiveness, which in turn facilitate understanding of how team dynamics lead to differing performance levels. The results also reveal how the type of social network affects the creation of a team identity: individuals identify with the team through the social networks to which they belong both within it and outside. Thus, team identity matters given the evidence suggesting that those who identify more with their work teams perform more effectively.

Keywords Performance, Identity, Networks, Quantitative, Group social capital, Work-team

Paper type Research paper

1. Introduction

Researchers attempting to enhance understanding of teams could start from the premise that they permeate organisations, determine their effectiveness to some extent and affect the lives of the people involved (see Goodman et al., 1987). Given their higher levels of autonomy within organisational structures, there is a need for the more active management of their boundaries (Alderfer, 2011; Alderfer, 1977, 1980, 1987) through
co-operation and coordination with other teams, other employees and management, for example. Previous research has highlighted the need for teams to manage bridging social networks with external members in their organisations in order to amass important informational and political resources that will improve their effectiveness (Ancona and Caldwell, 1992; Gladstein, 1984). Regardless of the fact that bridging social networks may be performance-enhancing, recent research findings suggest that maintaining a variety of social networks outside a team may be detrimental to its internal bonding social networks (Keller, 2001), which in turn may have a negative effect on its effectiveness (e.g. Beal et al., 2003). The increasingly complex and uncertain business environment has strengthened the need to understand how teams manage this delicate balance of bonding and bridging social networks.

These types of tensions have rarely directly attracted research attention, however (see Oh et al., 2004; Reagans and Zuckerman, 2001, for exceptions); the focus has generally been on the effect of either bonding (e.g. Jehn and Shaw, 1997; Salas et al., 1999) or bridging relations on team effectiveness (e.g. Ancona and Caldwell, 1992). There is agreement in the two previously-mentioned exceptions that it is not necessarily optimal to foster one type of social network, bridging or bonding, but otherwise the results are slightly contradictory. According to Reagans et al. (2004), high numbers of both bonding and bridging social networks are most beneficial in terms of team effectiveness. On the other hand, Oh et al. (2004) found that a moderate number of bonding ties and a high number of bridging social networks was the optimal configuration.

Thus, the first purpose of this study is to extend the results of recent team-level research (Reagans et al., 2004; Oh et al., 2004) on the debate concerning the two types of social networks, that is, bonding and bridging.

Secondly, studies focusing on the debate tend to concentrate purely on the performance effectiveness of social networks, but to our knowledge, research on social networks in teams has not concentrated on the impact of other dimensions of team effectiveness (Henttonen, 2010). Progress on understanding the factors that influence work-team effectiveness will only be made if researchers complement their use of survey measures with variables that allow a broader approach, such as performance effectiveness and member attitudes. Three dimensions of team effectiveness have been identified: performance effectiveness, member attitudes and behavioural outcomes (Cohen and Bailey, 1997). Performance effectiveness includes efficiency and productivity, for example; member attitudes reflect team identity. Thus, in this study we contribute to the literature in addressing two of these dimensions of team effectiveness simultaneously, namely performance effectiveness and member attitudes. Of the elements of performance effectiveness we focus on efficiency and productivity, and of member attitudes we focus on team identity. Team identity is a group-level construct representing the collective level of identification among all members: a high level of identification produces a strong identity (Lembke and Wilson, 1998). As an attitudinal outcome it is an under-evaluated resource, being one potent indicator of the team’s functioning, and signalling in particular the extent to which its members have internalised the identity of the cooperative group. Thirdly, we elaborate on the role of team identity in linking social structure and performance effectiveness, which relates to the growing body of research on social identity in teams (see, e.g. Bezrukova et al., 2009; Somech et al., 2008).
Fourthly, given the considerable amount of research in R&D settings, a further contribution is to focus on work-team settings involving more standard types of duties (see Henttonen, 2010, for a review). Work teams are defined here as groups of individuals in an organisation with a clearly defined membership who are responsible for achieving shared goals (Hackman, 1987). The teams investigated in this study were responsible for producing goods or services (Cohen and Bailey, 1997). Even if the tasks are not very complex in comparison to innovation teams, for example, they provide an impetus for interaction. Moreover, they are assigned without prescribed paths to goal achievement. Thus, the work teams had to interact in order to complete their tasks.

Figure 1 depicts the anticipated relationships between team social structure and both attitudinal outcomes and performance effectiveness. More specifically, the study addresses the question of whether or not bonding and bridging social relationships predict performance effectiveness and attitudinal outcomes (team identity) in work teams. The data testing the model comprises 76 work teams (including 499 employees) from 48 Finnish organisations.

Section 2 reviews the research on bonding and bridging social capital, team identity and team effectiveness. Section 3 describes the study setting and methodology, and the concluding sections present the findings and assess them in the theoretical context of team identity and social capital.

2. Background and hypotheses
This study focuses on the team level, and more specifically on one of the relatively unexplored aspects of social capital – the question of whether team social capital (also termed group social capital; Oh et al., 2006) determines team effectiveness. Social capital is defined here following Oh et al. (2006), and concerns the question of how the
configuration of the collective’s (here work-team) social networks affects its effectiveness. Previous research identifies two main types of social networks through which social capital flows: 1) bonding social networks and 2) bridging social networks, both of which are at issue in this study.

2.1 The impact of bonding social networks on the performance effectiveness
Bonding social networks refer to relationships among individuals within the focal group (see Sandefur and Lauman, 1998), here the work team. These are the relationships that bring a team together. Specifically, when the members interact with larger numbers of other members the team should benefit from a lower tendency to engage in social loafing – meaning that people expend less effort when they perform collective tasks than when they work on the same task individually (Kravitz and Martin, 1986) – or opportunism, and a closer adjustment to agreed-on norms: in other words the team will perform better. Thus, bonding social networks decrease the probability of opportunism, lessen the need for costly monitoring, bring down transaction costs, and are beneficial to all team members (Uzzi, 1996). Moreover, interaction among a relatively larger number of team members indicates greater mutual interdependence. This, in turn, enhances co-operation, which again enhances team effectiveness (Molm, 1994). Dense bonding social networks also benefit teams through the sharing of information. Furthermore, the amount of information sharing has been found to have a positive impact on the quality of team decision-making (Larson et al., 1996). Thus, we expect bonding social networks to be beneficial (see also, e.g. Baldwin et al., 1997; Janhonen and Johanson, 2010; Lucius and Kuhnert, 1997). Our first hypothesis is thus:

H1. Bonding social networks relate positively to the effectiveness of team performance.

2.2 The impact of bridging social networks on the performance effectiveness
Bridging networks are relationships that cross team boundaries. Given that teams exist in the broader social structure of organisations, there is a need to consider their boundary-spanning activities, which are critical determinants of their social-capital resources and, ultimately, of their effectiveness (Ancona, 1990; Oh et al., 2006). Teams communicating more frequently with a variety of people have greater access to resources other than themselves (Hansen, 1999; Tsai, 2001). Via bridging social networks comprising various external team members they can obtain diverse information and accumulate a wide range of knowledge that will enhance effectiveness. For example, teams whose members socialise with diverse other people will quickly learn about organisational developments, and if they experience a setback they are more likely to be able to access a broad base of emotional and political support through their ties with other teams in the organisation. Previous studies report a positive connection between bridging social networks and the team’s social-capital resources (Wong, 2008), and ultimately its effectiveness (Oh et al., 2004; Wong, 2008). We thus assume that the team with bridging social networks will perform better:

H2. Bridging social networks relate positively to the effectiveness of team performance.
2.3 The mediating role of team identity between bonding and bridging social networks and the performance effectiveness

One way of establishing team identity is via the bonding social networks between the members (Ellemers et al., 2004): the interaction within the team leads to multiple types of social networks, which further influences member behaviour. Festinger’s work on social comparison indicating that dense social interaction affects both the perceptions and attitudes of group members has inspired a large body of literature in the area of social psychology (see, e.g. Festinger et al., 1950; Festinger, 1954). People, here team members, who intensively interact with each other are likely to have similar perceptions and attitudes as those who do not (Alderfer, 2011). Moreover, it seems that dense bonding social networks within the team also foster identification with the group (Portes and Sensenbrenner, 1993). Presumably, therefore, work-team members need bonding social networks in order to identify with their own team.

**H3.** Bonding social networks relate positively to team identity.

Tajfel (1972) adopted the term social identity in his theory of how people conceptualise themselves in an intergroup context, and how a system of social categorisation “creates and defines an individual’s own place in society” (p. 293). He defines social identity as “the individual’s knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership” (Tajfel, 1972, p. 292; Tajfel, 2000). Similarly to individuals who identify with a social group and adopt its norms and values according to the group’s prototypes, group members also develop cognitive prototypes of out-groups (Turner, 1985; Turner et al., 1987, see Hogg and Terry, 2000). As groups exist in relation to other groups, they thereby gain their descriptive and evaluative properties, and thus their social meaning. Moreover, as social identity is self-evaluative and accrues its value from the evaluative properties of the in-group, social comparisons between groups focus on establishing one’s own group. Intergroup relations involve the process of competing for a positive identity (Turner, 1975). In other words, teams and their members strive to protect or enhance their distinctiveness and social identity. How the process evolves depends on the team member’s subjective understanding of the team boundaries and the respective stability and legitimacy status (Tajfel and Turner, 1979). The fourth hypothesis therefore rests on the notion that team identity does not form in isolation, but is rather subject to the influences of other organisational members with who team members interact.

**H4.** Bridging social networks relate positively to team identity.

According to Lembke and Wilson (1998), a strong team identity is crucial for optimal team effectiveness in terms of fostering teamwork and success through the unification of the members in a socially identifiable whole. It also prevents members from becoming distracted by individual goals they might prioritise over the interests of the team (Ellemers et al., 2004). van Dick et al. (2008) also report a direct relationship between team identification and performance. Therefore, we propose:

**H5.** Team identity relates positively to performance effectiveness.

Resources flowing through social networks may be work-related, such as advice and strategic information, but such networks also transmit social identity (Podolny and Baron, 1997). Dense and cohesive social networks are conducive to the formulation of a
clear social identity (Podolny and Baron, 1997), which in this context is more easily discernible. Furthermore, individuals who do not conform to it are “corrected” and encouraged to adapt to the groups’ shared attitudes (Bienenstock et al., 1990). Thus, research suggests that individuals, here team members, are more likely to take on and reflect the attitudes of those around them when they have interconnected relations (Krackhardt and Porter, 1985). Mullen and Copper (1994) also found in their meta-analytical study that dense social networks enhanced productivity. Thus, identity may mediate the relationship between bonding social networks and team effectiveness in that embeddedness reinforces the opinions, perceptions and attitudes of team members through commonly held relationships:

H6. Team identity mediates the relationship between bonding social networks and performance effectiveness.

Focusing increasingly on open system models (Katz and Kahn, 1978), researchers have started to pay more attention to the context in which groups operate. Early research results (Ancona and Caldwell, 1987; Burgelman, 1983) identified the importance of interaction between teams and other groups within the organisation. The amount of interaction between a team and other groups external to it has also been found to relate positively to team performance (Ebadi and Utterbach, 1984). Furthermore, awareness of out-groups strengthens awareness of one’s in-group (Allen et al., 1983, Turner, 1981). More specifically, according to social identity theory, given the relational (interactions through social network relationships) and comparative nature of social identification, social identities are maintained primarily through intergroup comparisons. Thus, groups (here teams) needing to strengthen their self-esteem try to find positive differences between themselves and reference groups (Tajfel, 1978, 1981). We therefore propose:

H7. Team identity mediates the relationship between bridging social networks and performance effectiveness.

3. Methods
Data for this study was obtained from a mail survey among Finnish work organisations with at least two members, and a random sample of teams in these organisations. The Maintenance Work Ability (MWA) barometer survey carried out by the Finnish Institute of Occupational Health provided the relevant information guiding the choice of survey recipients. The 900 questionnaires yielded 595 individual responses. In order to facilitate team-level analysis the respondents to the MWA survey were asked to give information about the teams in their workplace – what they were like, how they functioned and why they were set up. The choice of organisations for further study was based on two criteria: the existence of teams and a willingness to take part in the survey (Taittonen et al., 2008). Ninety-nine organisations expressed their willingness to take part, the implication being that of the 900 organisations at least 10 per cent had teams of some kind.

The first step was to send an invitation to the designated contact persons, mainly HR or operations managers who had taken part in the MWA survey and who had agreed to be contacted again. The researchers then followed this up by telephone. Although 77 of the contact persons had agreed to take part in the team survey, 22 refused at this point, mostly because they were too busy but also in some cases because
of a reluctance to ask subordinates to complete the survey outside working hours. In the end, respondent names were received from 56 organisations. (Taittonen et al., 2008)

The contact persons were asked to identify two teams for further investigation, one high-performing team and the other performing notably less well (Taittonen et al., 2008). These stipulations were used to prevent the naming of two teams showing excellent performance and thus to ensure some variation. The contact persons delivered the questionnaires to the eventual respondents. The final survey response rate was 75 per cent, and 101 teams were included.

Network analysis requires a high response rate (Wasserman and Faust, 1994), and we therefore excluded teams with less than 80-per-cent participation. We also excluded teams with fewer than three members, as well as project teams of which were too few to allow meaningful analysis. The teams’ members and their leaders all filled in the survey. The present study covers 499 employees in 76 teams representing 48 different organisations. The average team size was seven, the average tenure was four years, and the average age of the respondents was 42 years. The average organisational tenure was 10.2 years and, finally, 55 per cent of the teams represented the public sector and 45 per cent the private sector. The sectoral distribution was as follows: social services and health care (40 teams with 228 members); the public sector (27 teams with 142 members); the private sector (13 teams with 86 members); public administration (14 teams with 113 members); education (six teams with 48 members). The remaining teams represented a variety of fields, including retail trade (three teams with 16 members) and finance (four teams with 40 members).

3.1 Measurements

The question: “To who do you often turn for advice in work-related matters?” which is intended to assess advice-related communication networks (Burt, 1992; Ibarra and Andrews, 1993) elicited responses about advice-related interaction with other members of the team. The network survey listed the names of each individual in the respondent’s work team, and the interviewer asked each respondent to identify the relevant members.

**Bonding networks.** Network density, meaning the number of actual contacts in relation to the theoretical maximum, measures the extent of bonding relationships. Thus, if all the team’s members had connections with each other the density was one and if there were no connections it was zero. This construct reflects the intensity of the relationships within a group, connoting the extent of interlocking and the reciprocity (Wong, 2008).

**Bridging networks.** Bridging relationships were measured in terms of external range, defined as interactions that extend beyond the team’s boundary and relate to its performance (Ancona and Caldwell, 1992). The interviewer asked the respondents (including middle management, other teams and other employees) to rate how often they communicated with people occupying each of a set of organisational positions on the following scale: every day, weekly, monthly, a few times a year, and never (alpha = 0.69). Communication frequency indicates relational strength (see Uzzi, 1996, 1999) on two levels: frequency and emotional closeness. However, no data on emotional closeness was available for this study, thus future research could consider this aspect (Burt, 1992). External range comprises the sum total of connections and their strength (in terms of interaction frequency) on the individual level, aggregated to the team level.
The question concerning contact with other teams also constituted one of the measures of team-external contact, the aim being to assess the potential value of non-hierarchical interactions. The external network range in this study comprised vertical and horizontal networks. Vertical networks are ambassadorial in nature and thus involve, among other things, gaining recognition, lobbying for resources, obtaining support and receiving rewards from those on higher levels (Ancona, 1990; Ancona and Caldwell, 1992). Horizontal networking, on the other hand, occurs among experts and other work-team members on similar hierarchical levels, the aims including coordination and the sharing of information and knowledge (Ancona and Caldwell, 1992).

**Performance effectiveness.** Team members and leaders were asked to evaluate team-level performance effectiveness on three items: “The team works effectively”, “The team works fluently”, and “The group works better than other teams” (alpha = 0.82). This type of self-report measure is open to criticism, generally on the grounds that some people cannot report their performance accurately for reasons of poor introspection (e.g. Locke et al., 1988 cf. Kratzer et al., 2008). In order to weaken the potential impact of poor introspection the interviewers asked the group members and leaders alike to evaluate the team's performance rather than their own. Indeed, Cooper (1981) in his well-known study on success factors in engineering-design groups gained accuracy levels of over 80 per cent when he asked the members and leaders to evaluate their projects after their completion. Moreover, managers who are not very familiar with the team’s internal dynamics tend to give high ratings according to team-internal factors such as the amount of communication with external agents (Cohen and Bailey, 1997).

There is also evidence that self-rating correlates highly with more objective measures if anonymity is guaranteed. Heneman (1974); see Kratzer et al., 2008), for example, found that self-report measures were less restricted in range and leniency than supervisory ratings, which tend to be considered more objective. In his view, this reflected the fact that the intended use of such measures is explicitly for research purposes, as in this study, and not for assessing teams or for other organisational purposes. Furthermore, given that the focus in this study was on several organisations it would otherwise have been challenging to find meaningful and consistent metrics. It is also worth noting that public-sector organisations, in which some of the teams operated, do not necessarily use performance measures. Thus, the measure would appear to mimic, to some extent, methods of performance assessment in some real-life settings, and presumably paints a reliable picture of team performance.

**Attitudinal outcomes.** Attitudinal outcomes, including identification with the team (alpha = 0.74), comprise one potential indicator of how well the group is functioning. The following items were used (see Mael and Asford (1992): “When someone criticises our work team it seems like a personal insult”; “I am very interested in what others think about our work team”; “When I talk about our work team I usually say ‘we’ rather than ‘they’”; “The work team’s success is my success”; “When someone praises our work team, it feels like a personal compliment”; and “My membership of this work team reflects what I am personally”. The statements were assessed on a seven-point semantic-differential measurement scale.

**Control variables.** Numerous other characteristics appear to influence group dynamics and performance. However, because it would have been impossible to
include them all, group size, group tenure, group task and organisational tenure constituted the dummy variables.

Previous research has found that size influences team dynamics and performance (Brewer and Kramer, 1989; see also Moreland and Levine, 1992 for a review). For example, large teams may well be less dense, but because they have more members they may have better access to team-external relationships. Furthermore, because team performance as the dependent variable was a function of the volume of work the team members produced, a significant relation to size was expected. The teams investigated in this study varied in size, from one with three members to one with 15, thus size was measured in terms of the number of participants.

In addition to performance effectiveness and member attitudes, as studied here, Cohen and Bailey (1997) include behavioural outcomes as part of team effectiveness. However, it proved difficult to include the behavioural outcomes of social structure and identity in the analysis due to the wide variation in work tasks across the organisations. The teams carried out various types of task in areas ranging from education, administration, social services and health care to retail trade. The classification delineated tasks as fairly complex as opposed to highly complex, new-product-development tasks that require even more innovativeness in the effective coordination and integration of ideas, and more information processing. In order to remedy this we included a control variable (more expert tasks and others), reflecting the possibility that some teams may be more dependent on information sharing, and others on diverse information. However, it would seem that, in the light of the full range of possible work tasks, all of the types included in this study involve roughly similar issues.

There is evidence of deterioration in team performance over time (Leenders et al., 2003). On the assumption that it is not the age of the team per se, but the time the current members have been in it, that matters we used tenure to represent the average number of years of membership. Team members who have been in the organisation longer may naturally have more relationships within it than relative newcomers (see, e.g. Rollag, 2004). Organisational tenure refers to individual team members. Therefore, individual differences in tenure should somehow emerge to create team-level constructs that relate to collective outcomes on the team level (Stewart, 2006). Table I summarises and describes all the variables used in the study.

### 3.4 Data analysis

The focus in the present study is on the relationship between bonding and bridging social networks in work teams, and on attitudinal and performance effectiveness outcomes. Hence, we assumed in the analysis that individuals engaging in teamwork act homogeneously within their teams (Drazin et al., 1999), and therefore did not include individual-level aggregates. The reason for conducting a one-way analysis of variance was to justify this aggregation statistically, and to find out if there was greater variation in the performance-effectiveness and team-identity ratings between than within the teams. The analysis confirmed the appropriateness of the aggregation (for performance effectiveness $F = 4.98$, $p < 0.000$ and for team identity $F = 2.13$, $p < 0.000$). Before aggregating the team members’ evaluations the researchers calculated the inter-rater agreement (IRA) on performance effectiveness and identity by averaging the IRA score, as James et al. (1984) suggest: scores of 0.92 for performance
effectiveness and 0.78 for team identity justified the use of the arithmetic mean as the team score. We used Harmon’s one-factor test to check for common method variance (see Podsakoff and Organ, 1986), including all the independent variables and the dependent variable in an exploratory factor analysis. The data would have had a common method bias problem if a single factor had emerged that accounted for a large percentage of the variance in the resulting factors: no single factor emerged.

The hypotheses were tested by means of multiple regression analysis. Tests of mediation followed the guidelines of both Baron and Kenny (1986), whose test is widely applicable in management research, and Pierce et al. (2004), who formed three regression models in order to test for mediation and linkages. The analysis did not include Sobel’s test, which only works well in large samples (Kristopher et al., 2001).

4. Findings
Table II gives the means and standard deviations for the main study variables, together with the inter-correlations between all the variables included.

Table III presents the results of the hierarchical regression analyses testing the hypothesised relationships between group social capital, more specifically bridging and bonding relationships, and team outcomes, both performance effectiveness and team identity. Table III also indicates the mediation effects.

Do bonding and bridging social networks matter in relation to the effectiveness of team performance? H1 concerns bonding social networks (measured in terms of density). The results reported in models 2 and 5 in Table III support the hypothesis: bonding social networks related positively to performance effectiveness. Additionally, tests of the influence of the bridging relationships (measured by external range) identified a positive relationship, thereby supporting H2. H3 and H4 predict a positive
## Table II.
Descriptive statistics and correlations ($n = 70$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Size dummy (small)</td>
<td>0.3</td>
<td>0.47</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Size dummy (medium-sized)</td>
<td>0.4</td>
<td>0.50</td>
<td>-0.56*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Size dummy (large)</td>
<td>0.3</td>
<td>0.45</td>
<td>-0.42*</td>
<td>-0.51*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Team tenure dummy (short-term, less than three years)</td>
<td>0.4</td>
<td>0.50</td>
<td>0.28*</td>
<td>-0.08</td>
<td>-0.20*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Team tenure dummy (medium-term, between three and six years)</td>
<td>0.4</td>
<td>0.48</td>
<td>-0.21</td>
<td>0.11</td>
<td>0.10</td>
<td>-0.65*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Team tenure dummy (long-term, more than six years)</td>
<td>0.2</td>
<td>0.41</td>
<td>-0.21</td>
<td>-0.04</td>
<td>0.26**</td>
<td>-0.45*</td>
<td>-0.38*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Organisational tenure dummy (short-term, less than six years)</td>
<td>0.3</td>
<td>0.47</td>
<td>0.31*</td>
<td>-0.07</td>
<td>-0.25**</td>
<td>0.46*</td>
<td>-0.17</td>
<td>-0.36*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Organisational tenure dummy (medium-term, six to 12 years)</td>
<td>0.3</td>
<td>0.44</td>
<td>-0.12</td>
<td>0.05</td>
<td>0.07</td>
<td>-0.32a</td>
<td>0.26**</td>
<td>0.08</td>
<td>-0.60*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Organisational tenure dummy (long-term, more than 12 years)</td>
<td>0.4</td>
<td>0.50</td>
<td>-0.20</td>
<td>0.02</td>
<td>0.19</td>
<td>-0.14</td>
<td>-0.11</td>
<td>0.30*</td>
<td>-0.40*</td>
<td>-0.49*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Task type dummy (experts/others)</td>
<td>1.6</td>
<td>0.49</td>
<td>0.18</td>
<td>-0.18</td>
<td>0.00</td>
<td>0.20</td>
<td>-0.20</td>
<td>-0.13</td>
<td>0.03</td>
<td>0.01</td>
<td>-0.05</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Team density (advice network)</td>
<td>0.5</td>
<td>2.70</td>
<td>0.53*</td>
<td>-0.21</td>
<td>-0.32**</td>
<td>0.21</td>
<td>0.02</td>
<td>-0.27**</td>
<td>0.22</td>
<td>-0.12</td>
<td>-0.10</td>
<td>0.17</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Team external range (communication network)</td>
<td>2.9</td>
<td>0.53</td>
<td>0.50*</td>
<td>-0.22</td>
<td>-0.27**</td>
<td>0.33*</td>
<td>-0.24**</td>
<td>-0.12</td>
<td>0.30**</td>
<td>-0.17</td>
<td>-0.14</td>
<td>0.17</td>
<td>0.43*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Team performance</td>
<td>5.3</td>
<td>0.81</td>
<td>0.13</td>
<td>-0.23b</td>
<td>0.12</td>
<td>-0.00</td>
<td>0.05</td>
<td>-0.06</td>
<td>-0.04</td>
<td>0.05</td>
<td>-0.01</td>
<td>0.27**</td>
<td>0.33*</td>
<td>0.26b</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>14. Team identity</td>
<td>3.6</td>
<td>0.38</td>
<td>0.23b</td>
<td>-0.20</td>
<td>-0.02</td>
<td>0.22</td>
<td>-0.12</td>
<td>-0.13</td>
<td>0.22</td>
<td>-0.13</td>
<td>-0.10</td>
<td>0.38*</td>
<td>0.53*</td>
<td>0.42*</td>
<td>0.46*</td>
<td>1</td>
</tr>
</tbody>
</table>

**Notes:** *Correlation is significant at the 0.01 level (two-tailed); **Correlation is significant at the 0.05 level (two-tailed)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Team identity</th>
<th>Team performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small (three to four members)</td>
<td>0.04</td>
<td>0.26**</td>
</tr>
<tr>
<td>Medium-sized (five to nine members)</td>
<td>-0.10</td>
<td>-0.73</td>
</tr>
<tr>
<td><strong>Task type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Experts vs others)</td>
<td>0.34</td>
<td>3.04*</td>
</tr>
<tr>
<td><strong>Organisational tenure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term (less than six years)</td>
<td>0.16</td>
<td>1.06</td>
</tr>
<tr>
<td>Medium-term (six to 12 years)</td>
<td>-0.01</td>
<td>-0.06</td>
</tr>
<tr>
<td><strong>Team tenure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term (less than three years)</td>
<td>0.05</td>
<td>0.30</td>
</tr>
<tr>
<td>Medium-term (between three and six years)</td>
<td>-0.01</td>
<td>-0.04</td>
</tr>
<tr>
<td>Bonding relationship (advice network density)</td>
<td>0.51</td>
<td>4.45*</td>
</tr>
<tr>
<td>Bridging relationship (external range)</td>
<td>0.24</td>
<td>2.20**</td>
</tr>
<tr>
<td>Team identity</td>
<td>2.54**</td>
<td>6.27*</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.13</td>
<td>0.39</td>
</tr>
</tbody>
</table>

**Notes:** *Correlation is significant at the 0.01 level (two-tailed); **Correlation is significant at the 0.05 level (two-tailed)
relationship between team identity and both bridging and bonding social networks: the impact was indeed significant and positive. Taken together, bonding and bridging relationships explained all of the variance in the performance effectiveness (model 3 vs model 5 in Table III), and an additional 29 per cent of the variance in team identity (model 1 vs model 2 in Table III) in the equations controlling for team size, team tenure and organisational tenure. Finally, \( H5, H6 \) and \( H7 \) concern the mediating effects of team identity between bridging and bonding social networks and performance effectiveness. Does team identity mediate the impact? There is support for both hypotheses: team identity related positively to performance effectiveness and mediated fully its relationship with both bridging and bonding social networks.

Subsequent post hoc testing checked for possible interaction effects between the bonding and bridging social networks. Significant interaction would suggest the need for a proper balance within the two types in order to achieve optimal group social capital. The testing for possible linear interactions involved centring the predictor variables (Cohen et al., 2003), and then including the product of the bridging and bonding variables. The results failed to uncover any interaction effects in relation to the effectiveness of team performance. Bridging and bonding social networks did have an interaction effect on team identity, however, although it only approached significance \( (\beta = -1.88, p = 0.65) \). Visual investigation of the interaction suggested that the social networks were complementary: team identity is strong as long as there are either bonding or bridging social networks.

5. Discussion, implications and further research

The objective of this study was to find out whether bonding and bridging relationships predicted the performance effectiveness and attitudinal (team identity) outcomes. The focus was on one somewhat neglected team type in the literature on group social capital, namely work teams. The findings enhance understanding of performance effectiveness along several dimensions. First, bonding social networks promoted effectiveness, thus supporting previous studies reporting a simple positive linear relationship between bonding relationships and team effectiveness (Lucius and Kuhnert, 1997; Luo, 2005; Reagans and Zuckerman, 2001; Sparrowe et al., 2001). Similarly, bridging relationships appeared to have an impact on performance effectiveness, which supports the work of Wong (2008), for example, who identifies a positive relationship between the number of bridging social networks and team effectiveness. The findings thus suggest that work teams need both types of social networks simultaneously in order to enhance performance effectiveness. Generally, bonding and bridging social networks appear to have conflicting effects from the social-capital perspective. According to one school of thought the absence of dense bonding social networks within a team is problematic (e.g. Oh et al., 2004), whereas another concentrates on the advantages (e.g. Burt, 2001). The optimal-configuration perspective offers an alternative view on group social capital as overall balance, rather than the maximum number of relationships (Oh et al., 2006; see also Alderfer, 2011). In this respect this study contributes to the research (see also Reagans and McEvily, 2003; Reagans and Zuckerman, 2001; Sumelius, 2009) showing that the optimal configuration of a team’s social-network relationships may combine seemingly conflicting but in fact complementary elements such as bonding and bridging. It thus joins the growing body of literature emphasising the need to pay attention to and
manage tensions and paradoxes (see, e.g. Gibson and Birkinshaw, 2004). The implication is that both types of social networks capture important factors reflecting what a work team needs to be successful in attaining its goals.

Second, both bonding and bridging social networks were related to team identity, indicating that individuals identify with the team through the social networks they have within and outside of it. Both bonding and bridging social networks matter, but neither suffices to preserve team identity. In this our results are in line with Festinger's work on social comparison and Tajfel's social identity theory. According to the present data, social networks within the organisation help to sustain the sense of togetherness within the group regardless of whether they are within the team (bonding) or the organisation (bridging). The real threat to identity lies in the lack of work-related contacts in that social isolates cannot grasp the cues for a common frame of reference. The need to combine bonding and bridging social networks for reasons of performance effectiveness underlines the significance of mixing internal and external resources for the fruitful accomplishment of team duties. Third, the study adds to the information on team processes that mediate the effect of the social networks on team effectiveness: investigating social networks that contribute to superior work-team performance effectiveness gives a more comprehensive understanding of the effect of social networks. On a more general level, awareness of the processes that mediate team effectiveness is essential in order to understand how team dynamics and interaction patterns lead to differing performance levels. Knowledge of the processes that facilitate superior performance provides managers with the tools they need to train and manage more efficient work teams.

Similarly, a team that fails to establish a team identity will not be one of the best performers: acknowledgement among members that they share a common identity minimises the chances of sub-group categorisation and bias in relation to identity and association (Hogg and Terry, 2000), and increases the motivation to reach agreement and coordinate their behaviour in exchanging information, for example (see, e.g. Haslam and Ellemers, 2005).

It would appear from the results of this study that managerial attention should focus on building a team identity and social networks. One way of building such an identity would be to communicate to the team members the fact that they constitute a critical social unit (Lembke and Wilson, 1998), telling them, for example, why their teamwork is critical in relation to the organisational goals in general. Clarifying the team’s boundaries (in terms of who belongs to it and who does not) and the roles and contributions of each member could also help. Moreover, achieving a shared meaning requires not just formal but also informal communication. Team members may not come to the same conclusions individually even if they are given the same information, and meetings should be held. Furthermore, it has been found that engagement in team decision-making facilitates involvement, commitment and a sense of belonging, which in turn lead to higher levels of team identity (Tyler and Blader, 2003). If they are to become emotionally attached to the team the members need to feel that they, to some extent, can choose – at best even desire – to be part of it. Performance-management and reward systems could also be used to align the behaviour of team members. In order to promote teamwork such systems should focus on team rather than individual outcomes (Lembke and Wilson, 1998; Ramamoorthy and Carrol, 1998), which could mean rewarding and encouraging team-oriented behaviours such as social networking.
Thus the members would be encouraged to develop bridging relationships, for example. The findings suggest that managers wishing to optimise team-based organisation should ensure that both bonding and bridging social networking are on the agenda. Traditional team-building efforts could focus on building dense bonding social networks within the team, and thereby also team identity. These could include arranging common spare-time and social activities. Social gatherings, frequent intergroup meetings and the use of cross-functional teams might combat silo working and promote bridging social networks across team boundaries, and various computer-based social-networking systems (e.g. Facebook, LinkedIn) could also enhance their development.

This study has several potential limitations. Although some scholars recommend the use of both subjective and objective measures of performance whenever possible (Wall et al., 2004), the researchers did not have access to objective measures with regard to the teams in question. However, Wall et al.’s (2004) comparison between subjective and objective measures reveals a positive association (convergent validity), and a rough equivalence with a range of independent variables (construct validity). The focus on the social context may also have biased the subjective evaluation of performance. Previous studies have relied mainly on the evaluation of the team leader, who is also involved in the daily activities of the team. Hence, we raise the question of whether one team leader who is thus involved could give a better and less subjective evaluation of performance in comparison to the mean value of the evaluations given by himself/herself and the team members (varying between three and 15 individuals in this study).

Further research could focus on the impact of social networks on other dimensions of team effectiveness. As Cohen and Bailey (1997) suggest, team effectiveness comprises performance effectiveness, member attitudes and behavioural outcomes. All three dimensions deserve attention. Future studies could focus more on behavioural and attitudinal outcomes rather than task-related performance. One could question whether these different aspects of team effectiveness have similar or different predictors: both social and task-related outcomes have been highlighted as significant (see, e.g. Kozlowski and Bell, 2003 for a review). Thus, this area of research provides many fruitful opportunities for further study.

References


Further reading


About the authors
Dr Kaisa Henttonen is a Post-doc Researcher, Lecturer and Project Manager at the School of Business and Technology Business Research Centre (TBRC), Lappeenranta University of Technology, Finland. Her research and teaching interests span the fields of innovation (social) networks, and virtual collaboration. Kaisa Henttonen is the corresponding author and can be contacted at: kaisa.henttonen@lut.fi

Jan-Erik Johanson is a temporary Professor of Financial Management at University of Tampere, Finland, and tenured University Lecturer at the University of Helsinki, Finland. Recently, he has studied strategic management, power relations of pension funds and determinants of efficiency in team-based organisations. His research interests include public organisations, organisation theory, strategic management, and social network analysis.

Dr Minna Janhonen is a Specialized Researcher at the Finnish Institute of Occupational Health, Helsinki, Finland. Her main research interests include teamwork, inter and intra-organisational social networks, and the well-being/performance relationship in the organisational context.

To purchase reprints of this article please e-mail: reprints@emeraldinsight.com
Or visit our web site for further details: www.emeraldinsight.com/reprints
This article has been cited by:
