

Team leadership and leadership roles

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Abstract

Although leadership theory recognises the importance of leaders in a team, research has mostly focused on various personal characteristics of leaders or leadership style, while less attention has been paid to the social relationships in which leaders are embedded. We therefore examine both internal and external social ties of leaders with the aim of identifying variations in the network patterns of team leaders. We hypothesise that leaders' relationship patterns lead to different network structures, which in turn create differences in leadership roles. By examining the social networks of team leaders from Slovenian and Finnish organisations between 2009 and 2012, we empirically identify variations in leaders' social networks. The results suggest four distinct social structures within which team leaders perform their leadership roles. We have shown that leadership roles can be distinguished from teams and team leaders based on the characteristics of social networks.

Keywords: leadership role, leader, team, social network

1. Introduction

Teams are not a new phenomenon. They seem to be gaining their importance with the dynamic changes in industrial organisation. Teams and work groups were the focus of Hawthorne studies in the 1920s and 1930s, which sought to address the human challenges of the then-new mass production systems (Mayo, 2003; Roethlisberger & Dickson, 1939). Interest in teamwork waned in the post-war period when mass production became the norm to the extent that teams were perceived as a source of inefficiency. Some scholars claimed that “independence of operator functions, not interaction between operators, is emerging as the more desirable concept in systems engineering” (Briggs & Naylor, 1965, p. 391). Another wave of interest in teams came with the loss of competitiveness as American and European companies began to feel the bite of the Asian tigers (Peters & Waterman, 1982). Interest in teams grew with attempts to reinvent industry and move from a bureaucratic form to a new, more flexible organisation based on teamwork as a key factor in the deployment of human capital.

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With organizations shifting their emphases from bureaucracy to teamwork, team leadership became increasingly important as leaders of teams play the key role in integrating team members into effective units and linking their teams to wider organization (Handy, 1976). Even though leadership is consistently recognized as one of the central issues in organizations studies it remains “least understood topic of any in the social sciences” (Bennis & Nanus, 1985, p. 20). While there have been many studies of leadership, the dimensions and definition of the concept remain unclear (Pfeffer, 1977).

There is an abundance of leadership theories (for review see Yukl, 2006). From early theories of personality traits of great leaders (Stogdill, 1974) to more contemporary theories of leader-subordinate social exchange (Fiedler, 1967) and the theory of transactional (Avolio et al., 1991; Seltzer & Bass, 1990) and transformational leadership (Bass, 1985; Bass & Avolio, 1994; Burns, 1978; Dixon, 1998) all the way to the fashionable theories of authentic (Avolio, 2010) and adaptive leadership (Heifetz et al., 2009) the key emphasis was on behaviours that constitute leadership. The problem with these theories is that they “focus specific attention on behaviours leaders exercise and the psychological states those behaviours are thought to stimulate in followers” while being “remarkably nonchalant regarding the social unit(s) and context within which leadership is exercised” as if they can be “equally applicable to individual, group or organizational influence” (Kozlowski et al., 2016, p. 22). The critics concur with Day (2012, p. 698) that “context matters, especially with leadership”. In their view, the context of teams should be fully taken into account making general leadership theories less applicable to team situations.

This criticism lay the groundwork for the development of team leadership theory that revolves around functional theory. The central idea is that the leaders must satisfy the needs of their teams in order to bring about the successful completion of their tasks (McGrath, 1962; Morgeson et al., 2010). The theory has evolved by identifying ever more team leadership functions that increasingly resemble generic management tasks rather than team leadership functions. However, the contribution of functional theory is to draw a clear distinction between leadership styles, which are a cultural phenomenon, and leadership functions that emphasize structural aspect of leadership. This distinction is important for reconceptualizing leadership. Leadership is no longer seen as a set of individual behaviours but rather as a set of functions that need to be fulfilled for successful team performance.

The major shortcoming of both general leadership theories and team leadership theories is almost complete absence of relational perspective. Most of the theories are “individualistic”, occasionally allowing for “task contingencies”, while some are “groupy” (Mathieu et al., 2017), emphasizing social climates that reflect member perceptions of norms, attitudes, and expectations. While there are some suggestions on how to introduce relational view into the discussion of leadership (Brass, 1984; Sparrowe et al., 2001), relational paradigm of leadership is largely undeveloped.

The main objective of this paper is to address this gap in the research and advance our understanding of the relational aspect of leadership. We build on the notion that leadership is present at all levels of the organization involving not only the ties within the team but also organization wide relationships (Gordon & Yukl, 2004). We therefore examine internal as well as external social ties of leaders (i.e., ties that leaders maintain within the team and outside the team) with the purpose of identifying variations in network patterns of team leaders. We propose that patterns of relationships of leaders lead to different network structures that further create differences in leadership roles. By examining social networks of team leaders, we can empirically determine variations in social networks of leaders and use this empirical basis as the foundation for the study of leadership roles.

2. Relational perspective of team leadership

The phenomenon of leadership can be conceived as a social network, characterized by influence processes connecting members of dyads and larger collectives (Carter et al., 2015). Relational perspective on leadership roles is based on the theoretical work on social capital. Social capital is a particular kind of resource available to an actor inherent in the structure of relations between and among actors (Coleman, 1988). In the early work on social capital, Bourdieu (1985, p. 249) noted that “the volume of the social capital possessed by a given agent depends on the size of the network of connections he can effectively mobilize”. Leadership development researchers are increasingly recognizing the social processes involved in leadership and consider networking as an important step in the process of building social capital (Balkundi & Kilduff, 2006). Drawing on social capital theory, team leadership has two basic functions: to structure relationships within the team so that they can be mobilized and managed within the team and to access, acquire and manage relationships outside of the team (Gargiulo & Rus, 2002).

2.1. Resource mobilization

Starting with the first function of team leadership, leadership is a process of influencing the activities of an organized group in its efforts toward goal setting and goal achievement (Stogdill, 1950). This involves creating social structure conducive to collaboration, learning and sharing, so that the team can be mobilized and managed. Mobilization of human potential does not guarantee team performance. Team leaders need to be able to set direction and make sure the goals are achieved on time and on budget. To be able to do so team leaders need to exercise power and authority.

In organizational settings it is useful to distinguish between three types of power, namely power, influence and authority (Blau, 1963). In network analysis, power is related to the concept of centrality. Centrality can be measured in different ways denoting various facets of power (Lukes, 2005). We consider in-degree centrality as the measure of power team leader can exercise over the members of the team. This is a direct form of power used to impose decisions on team members. Direct ties a leader maintains with team members present a structural opportunity to exercise direct power over team members. It does not mean that a leader will exercise this form of power, but social structural position of centrality makes it possible for a leader to do so when required. Centrality has been shown to incur various benefits, including influence, access to information, positive performance ratings and his or her job performance (Baldwin et al., 1997; Brass, 1984; Ibarra & Andrews, 1993b; Sparrowe et al., 2001). Leaders can also be disconnected with all or some of the team members resulting in lower level of in-degree centrality. Disconnection in teams often signals a division in a social system and limits team leader’s ability to integrate the expertise from the team members (Kilduff & Tsai, 2003).

Team leaders can also gain an indirect form of power by creating conditions to exert influence without resorting to power. Influence as a type of power can be conceived of as betweenness centrality. It measures the extent to which a leader brokers or intermediates the links between others (Freeman, 1977; Wasserman & Faust, 1994). Betweenness has become an important measure for predicting the occurrence of leadership qualities (e.g., Brass, 1984). Leaders with high betweenness centrality have more control over the flow of information (Kilduff & Krackhardt, 2008). The role of a leader in providing a bridge between the different parts of the network helps to coordinate activities and control the flow of information. A recent study confirms that people are also perceived as leaders when they behave as network brokers, i.e., when they coordinate information across structural

holes (Burt et al., 2021). The presence of brokers can also have a detrimental effect on the team, as their presence can lead to information bias (Balkundi et al., 2007).

The sphere of influence of a formal leader over subordinates can increase with the help of centrality in informal advice networks (Blau & Scott, 1962) or expressive or friendship ties that transmit social support (Mehra et al., 2006). Expressive ties tend to be stronger than instrumental and connect people who are similar and in more frequent interaction (Krackhardt, 1990). Furthermore, leaders' in-degree centrality in friendship network is positively associated with their effectiveness or reputation as assessed by their group members (Mehra et al., 2006). Multiplex relations are considered to have greater tie strength and show the extent to which two people are bound to each other in different social arenas, like colleagues at work, friends on the weekend and teammates in sports (Kilduff & Tsai, 2003).

A leader has authority to the extent that team members are willing to accept and submit to the leader's opinion and follow it without having to resist or persuade. We consider the leader's proximity prestige rank to be a good indicator of the leader's authority. Proximity prestige is a more refined concept than centrality and can only be used in directed graphs (Wasserman & Faust, 1994). It is calculated based on the input domain, where the influence of the input choice is divided by the mean distance from all nodes in the input domain of the observed leader. Proximity prestige attaches more importance to the choice of a close neighbour. The leader's authority is strong if he is first in his team's social network in terms of proximity prestige, because this means that he is more closely connected to the other members of the team than any other actor in the team's social network.

The prerequisite for mobilization of team to work on the completion of common goals is social cohesion. Cohesive group members are cooperative, supportive of one another, and have open communication (Griffith, 1988; Wech et al., 1998). Social capital arises from the "closure" of social group which facilitates identification with the group (Portes & Sensenbrenner, 2004). In cohesive groups self-interest is overcome by the raise of collective norms and social control that enforce group norms and expectations. Positive implications of cohesion on the group dynamics and performance of the network have been presented by several authors, also in connection with the exchange of knowledge and expertise, coordination, team performance (Reagans & McEvily, 2003) and building of trust (Burt, 2000; Granovetter, 1973; Rousseau et al., 1998). Furthermore, members of cohesive groups were more likely to have respect for their supervisor than others (Blau & Scott, 1962). The Hawthorne studies surprised with the finding that cohesiveness of work groups increased their productivity even in adverse working conditions (Mayo, 1933). Social cohesion is measured as network density (Coleman, 1990). With high network density most of the actors in the network are connected to one another.

Structural holes, on the other hand, refer to a social network structure where actors are connected among themselves in a strategic way, so that there is lack of ties between many of the actors resulting in a lower density (Burt, 1982, 1992; Granovetter, 1973). In teams with sparse networks, structural holes between two individuals or two groups in a team create opportunities to broker the flow of information between individuals (Burt, 1992). Social capital derives from bridging ties that connect otherwise disconnected actors facilitating access to diverse resources. Rus (2000) has integrated the two perspectives on social capital and argued that organizations require both forms of social capital. They need bridging boundary spanning relations to gain access and acquire external resources, but they also need closure and social cohesion of its internal teams in order to mobilize and deploy acquired resources. Gargiulo and Rus (2002) applied this argument to top management teams showing that those teams that combined cohesion with bridging ties were most

successful in recovering from economic recession.

2.2. Resource acquisition

The second function of team leadership is to provide access to resources that are critical not only for the completion of the tasks but also for the linking of team results to the wider organization. In social network terms we refer to external linkages as external network range. Leaders of teams develop linkages to other parts of the organization for different reasons. Ties that cross hierarchical levels are helpful to individuals in the completion of their work tasks (Cross & Cummings, 2004) and ties with disconnected groups provide access to a greater set of ideas and opportunities than those who are limited to single one (Burt, 1992). Boundary spanning is a form of brokerage and includes the idea of crossing organisational boundaries such as departments or organisations (Friedman & Podolny, 1992). An external leader role link people who differ in personal characteristics, their positions in the hierarchy, or in their access to important resources (Ibarra & Andrews, 1993b). External linkages are also important mechanism for getting external support (Ancona, 1990; Kolb, 1996) and for getting outside constituencies to support the team's efforts (Larson & Larson, 1989). By establishing external linkages, leaders of teams represent their groups elsewhere in the organisation (Handy, 1976).

But effective multiteam collaboration is not a given (Carter et al., 2015). Interdependent subgroups or teams may compete against one another and/or emphasize individual or subgroup objectives above shared superordinate goals (Marks et al., 2005). By avoiding or even preventing to establish extensive external contacts by team members, a leader of a team can keep control over the external processes to present the profile or information a leader or a team wants to show. Previous research identified teams that mostly neglect external activity as "isolationist" teams, which create impermeable boundaries, while internally they were found to work efficiently and cohesively (Ancona & Caldwell, 1992). Team leaders therefore need to maintain external ties to other teams and team leaders that enable them to access, acquire and manage their dependences on wider organization. Various authors have consistently highlighted the need for research on externally oriented leadership (e.g., Guzzo & Shea, 1992; Kilduff & Tsai, 2003; van den Born et al., 2023).

2.3. Leadership roles

In the relational view of leadership, the key idea is that social networks of leaders constitute different leadership roles. We have argued that team leadership depends on fulfilling two functions: resource acquisition and resource mobilisation (Rus, 2000). External relationships are crucial for resource acquisition, while a team's social network is important for resource mobilisation and successful deployment. In the discussion above, we have shown that social network characteristics can provide structural conditions for the exercise of leadership. Variation in network characteristics therefore predicts variation in leadership roles.

The concept of leadership roles has been introduced by Mintzberg (1973) and Adizes (1985) but neither of them has pursued the relational perspective. Research on leadership that recognises the importance of social structures has developed various leadership concepts, from authentic (Avolio, 2010) and adaptive leadership (Heifetz et al., 2009) to shared leadership (DeRue et al., 2015). While this literature acknowledges the importance of group interactions, it continues to focus on behavioural patterns or leadership styles that characterise a leader. It identifies the behavioural factors that contribute to the emergence of informal leadership and points out that anyone can take on a leadership role, regardless of their position in a team or organisation (Lungeanu et al., 2022).

While previous research on team leadership has built a rich body of knowledge on behaviours that constitute leadership (see Avolio, 2010, for the concepts of different leadership styles), we extend our understanding by examining different roles performed by leaders with a formal leadership position. We apply a network approach that provides a more comprehensive conceptualisation of formal leadership, as social networks capture the relationships within and outside a team. The social network approach explains leadership as a relational concept, where leadership functions are defined by the extent and structure of interaction between members, rather than by a person's personality, skills, or behaviours. Social networks are social structures that provide opportunities and impose constraints on the exercise of leadership role (Burt, 1992). Leadership arises from the relationships among members and between members and leaders thereby constituting a network of relationships that emerges over time. On this basis, we put forward the following

Proposition. There are distinct leadership roles reflected in distinct network structures of team leaders.

3. Methods

3.1. Sample

We conducted a survey of teams and team leaders from Slovenian and Finnish organisations using a network-wide method. Data on the social networks of teams and team leaders were collected between September 2009 and May 2012. We contacted human resources (HR) managers from 32 Finnish companies from the Helsinki Top 100 list of the Finnish Stock Exchange and two chief executive officers (CEOs) from public research institutions. Five managers, including two research institutions, responded positively. The final sample consisted of one private media company with nine teams and two public research institutions with two and three teams respectively. Of these three organisations, we included five teams from two organisations in the social network analysis, with a team member response rate of 80.7 %.

We also contacted HR managers from 53 Slovenian organisations with 38 teams. Of these, we included 18 teams from 8 organisations in the analysis, with a team member response rate of 89 per cent. The main condition for including teams in the study was the length of time they had been working together. Team members should have been working together for at least six months or longer. All teams had a designated leader, appointed by the CEO or a senior manager, and team members were usually from the same department. In total, we had valid responses from 23 teams and team leaders. The average size of the teams was 9.3 members.

Within each group, we have replaced all missing ties with the observed value of the opposite tie in the dyad, as suggested by Stork and Richards (1992). In cases where the dyad was completely missing, and since reconstruction does not allow the addition of ties to the dataset where none are present, we followed Huisman (2009) and used random imputation proportional to the observed density. For directed networks where the direction of connections is important ("who seeks advice from whom"), we followed Gabbay and Zuckerman (1998) who suggest the use of imputation by reconstruction for directed networks with valued connections. In the teams' advice networks, we imputed the connections that the observed respondents reported about their relationship with the non-respondent. In cases where dyads were completely absent, we used the average interaction frequency of the team.

3.2. Procedure

We collected data using a sociometric survey (Stork & Richards, 1992) in which team members were asked to describe their relationships with other team members. We used three different methods to collect data. We asked managers of HR to send the questionnaire to team members as an e-mail attachment or as a link to a web survey. In a few cases, we collected the data in person on site. The questionnaire was in English or Slovenian. The first page of the online survey replaced the cover letter and included an introduction describing the purpose of the study and ensuring confidentiality for group members, as recommended by Cummings and Cross (2003).

3.3. Indicators and measures

3.3.1. Networks. We created matrices of team members' names for each team and for two types of social networks—advice and socialising. Respondents were asked to report on advice-related and socialising-related interactions. We asked respondents two questions, “In the last three months, how often have you approached this person for a task-related advice problem?” and “In the last three months, how often have you gone out with this person for social activities outside of work, such as an informal lunch, dinner or drinks?”. The value of the relationships was measured on a Likert scale ranging from 0 (*never*) to 4 (*daily*). By examining the frequency of relationships, we sought to uncover the communication structure of team members at work and outside of work, as well as the structural position of leaders in these networks of relations.

3.3.2. Network density. Teams may contain many or few relationships through which advice, knowledge, resources and support can flow. The more members of a team are connected, the denser the structure of those connections. The measure of a team's density reflects the degree of social cohesion that is a necessary condition for coordinated action. It is one of the most commonly used measures of structure, understood as the “percentage of all possible lines present in a network” (de Nooy et al., 2005, p. 63). In our valued networks, we calculated density as the sum of the valued tie strengths in the group divided by the total possible sum of tie strengths between all members of the group (Scott, 2000). Although density depends on the size of the group and limits the comparison of networks, we compared densities because teams are organised as units of work with a limited number of members.

3.3.3. Indegree centrality. Members of a group may be involved in a varying number of ties. Ties represent possibilities and alternatives from different sources. For a leader, the number of ties he or she is involved in indicates his or her position in the team, which may or may not correspond to his formal position. The more connections a leader has compared to the other members of a team, the more sources of information are available to them and the more central their position is in the team, which may indicate their power. In-degree centrality is one of the most common measures of centrality and is calculated by counting the number of direct connections to a leader (Wasserman & Faust, 1994). We measured leader's in-degree centrality in two networks: leaders' advice and socializing networks.

3.3.4. Betweenness centrality. In contrast to degree centrality, which is based on the accessibility or distance of a leader within a team, the concept of betweenness indicates the leader's role as a link between team members. The more the leader is a mediator between two team members, the more central their position is in the team. Leaders with high betweenness centrality have the position of a broker (Balkundi et al., 2009) or gatekeeper (Kilduff & Krackhardt, 2008) and have more control over the flow of information. We have measured a

leader's betweenness centrality as the extent to which the leader lies between other pairs of actors on the shortest paths that connect them (Freeman, 1979).

3.3.5. *Proximity prestige.* In dense networks, as teams are, it is difficult to distinguish between the positions of team members. However, if we assume that a member's direct connections are more important than his indirect connections, we can see how high the structural prestige of leaders is in their teams. We measured the prestige of proximity at the leader's level "as the proportion of all vertices in his input domain divided by the mean distance from all vertices in his input domain" (de Nooy et al., 2005, p. 197). The size of the index reflects how close an actor is to the group of actors. The data on the prestige of the leader's proximity are presented in Table 1 in order of prestige position, with 1 being the 1st.

3.3.6. *External range.* Leaders also play a significant role in building important relationships outside the team. Tushman and Katz (1980) referred to this aspect of the leader's role as "boundary spanning". To measure the external role of leaders outside their team, we asked respondents to name up to ten people in their organisation outside their own work team to whom they had frequently turned for work-related advice in the last three months of work. Leaders were also asked to indicate the position of these people, so we distinguish external contacts between a leader and non-leader position. External range is presented in two variables and is measured as the number of external contacts the leader has with members of other teams and the number of contacts the leader has with leaders outside the team.

3.4. Analysis

We conducted a cluster analysis to develop a classification of the structural characteristics of teams' and leaders' networks. Clustering is a method that has been used in other studies on small groups (e.g., Zihler et al., 2006). There are other multivariate network methods, such as exponential random graph models (Agneessens et al., 2024), to analyse multiple networks, but the modelling is complicated by the number of network dimensions (Vörös & Snijders, 2017). Instead of using dimension reduction methods to obtain a manageable set of variables, we chose cluster analysis as it is an exploratory data analysis tool suitable for identification of patterns of relationships and classification. To identify homogeneous clusters of teams and leaders with the same structures, we performed a hierarchical cluster analysis based on five network dimensions. The network dimensions are at two levels—team and leader. The network dimensions at the team level are the density of advice and socializing networks. At the leader level, we included indegree centrality, betweenness centrality, proximity prestige rank in both networks, and number of connections to other teams and team leaders in advice network. Since the variables are measured on different scales, we standardised the data. The measurement is based on squared Euclidean distance and Ward's method. It has been shown that a four-cluster solution best represents the data structure.

4. Results

The exploratory analysis of the mean values of the team and leadership network dimensions reveals four main clusters of leader network profiles. Each cluster is presented in detail. Scores above or below the overall mean were interpreted as indicating that a particular dimension was relatively common or relatively rare. Table 1 and Table 2 show the mean scores of the cluster variables for each of the four clusters.

Based on the observed network structures, the leaders of the *first* cluster appear most prestigious and central in both networks, both in terms of advice and socializing. Less

Table 1. Means and standard deviations of team and leader advice network characteristics by cluster.

ID	<i>n</i>	Size	Team			Leader		
			γ	c_C	c_B	PP	ETT	ETL
1	6	8.5	0.91±0.05*	1.00±0.00*	0.03±0.02	1.00±0.00*	7.33±3.01*	3.50±2.88*
2	8	9.1	0.88±0.07*	1.00±0.00*	0.02±0.04	1.00±0.00*	8.38±2.26	3.63±2.83*
3	2	10.5	0.71±0.10	1.00±0.00	0.19±0.19*	7.50±0.71	6.00±5.66	6.00±5.66*
4	7	9.7	0.72±0.17	0.86±0.13	0.05±0.06	1.14±0.38	2.57±2.69	0.86±1.22
Tot	23	9.3	0.82±0.13	0.96±0.10	0.05±0.07	1.61±1.88	6.13±3.66	2.96±2.96

* Above- or below-average values.

Notes: ID = cluster ID, *n* = no. of teams in each cluster, Size = average no. of team members, γ = density, c_C = in-degree centrality, c_B = betweenness centrality, PP = Proximity prestige rank, ETT = no. of external ties to teams, ETL = no. of external ties to leaders, Tot = total.

Table 2. Means and standard deviations of team and leader socializing network characteristics by cluster.

ID	<i>n</i>	Size	Team		Leader	
			γ	c_C	c_B	PP
1	6	8.5	0.79±0.08*	0.84±0.06*	0.05±0.09	1.50±1.23*
2	8	9.1	0.36±0.12	0.35±0.09	0.03±0.06	4.63±2.88*
3	2	10.5	0.49±0.18	0.32±0.25	0.00±0.00*	8.00±0.00
4	7	9.7	0.44±0.24	0.32±0.18	0.12±0.10*	2.71±2.98
Tot	23	9.3	0.51±0.23	0.47±0.26	0.06±0.09	3.52±2.99

* Above- or below-average values.

Notes: ID = cluster ID, *n* = no. of teams in each cluster, Size = average no. of team members, γ = density, c_C = in-degree centrality, c_B = betweenness centrality, PP = Proximity prestige rank, Tot = total.

prominent in both networks is their position of a broker between pairs of members of their teams. At the same time, these leaders have established an above-average number of external advice ties to other teams and team leaders, suggesting that they play a role as boundary spanners between teams and leaders. The social circle of relationships surrounding the leader shows that these leaders are embedded in the densest advice and socialising networks. This cluster includes 26 % of the teams.

The *second* cluster represents leaders who hold prestigious and very central positions in advice network. In this cluster, 35 % of the teams are represented. In the socialising network, their position is less central than the position of the leaders from the first cluster and corresponds to the centrality of the leaders from the other two clusters. The proximity prestige rank is similar to the centrality position of these leaders, who seem to occupy a prestigious position in advice network and a subordinate position in the socialising network. These leaders have the lowest betweenness centrality in both networks. At the same time, these leaders have established the most external advice relationships with other teams and an above-average number of external advice relationships with other team leaders. The pattern of the teams' network structure shows that the leaders from this cluster are embedded in a very dense advice network and in a socialising network with the lowest density.

Based on the observed relations with team members, leaders from the *third* cluster appear very central in advice networks and least central in the socialising networks. It is interesting to note that these leaders also occupy the least prestigious position in both advice and socializing networks. At the same time, these leaders appear to have the highest betweenness centrality in advice network and the lowest betweenness centrality in socializing network. 9 % of the teams are represented in this cluster. The teams from the two countries we included in our study are scattered across the three clusters, while the third cluster contains only teams from Slovenia. The results from this cluster suggest that leaders from this cluster bridge the pairs of team members in advice network. In contrast to the previous two groups of leaders, these leaders have established fewer external connections with other teams, but more and the highest number of external connections with other leaders within their organisation. Leaders from this cluster are embedded in the least integrated advice network and in a relatively sparse socializing network. The pattern of team network structure shows that leaders from this cluster are embedded in the least dense advice network.

In contrast to the previous groups of leaders, the leaders of the *fourth* cluster have the lowest centrality score in the advice network. These leaders also have a relatively low centrality score in the socializing network. However, their proximity prestige rank is above average in both networks. It is also interesting to note that their position as a broker between pairs of members of their teams is more pronounced in both networks compared to other leadership profiles. These leaders seem to have a relatively high betweenness centrality in the advice network and the highest betweenness centrality in the socializing network. These leaders have established the lowest number of external advice relationships with other teams and the lowest number of external advice relationships with other team leaders. Leaders in this cluster are embedded in a relatively sparse advice and socializing networks. 30 % of the teams are represented in this cluster.

5. Theoretical implications

The results have some interesting implications for advancing our knowledge of team leadership. The four clusters indicate different leadership roles, reflecting four different social structures within which team leaders perform their leadership roles. These social structure

features are not given, but are the result of interaction between leaders, team members and external contacts. Following structuration theory (Giddens, 1979), they are both the result of past interactions and a constraint on the team leader's actions. In this sense, they can be considered leadership roles in the classic definition of the concept, i.e., stable patterns of relationships (Parsons, 1951).

The first cluster denotes the leadership role of an *integrator*. Leaders from this cluster are most important in both the advice and socializing networks. In this cluster, advice ties overlap with formally prescribed relationships, which is often the case, but is not limited to them (Ibarra & Andrews, 1993a). Leaders have also established friendly relations with group members and play a central role in the socialization network. This social structure enables them to exercise leadership roles in both formal and informal organisations. They maintain direct advice and social relations with all team members, which gives them power and authority within the team. Centrality in the formal organisation (advice network) enables them to maintain control over the team due to their information advantage as the most central persons in their team. Informal socialising ties provide leaders with a variety of resources and the opportunity to strengthen the relationships that result from a formal leadership role. Socialising ties involve the exchange of friendship and social support and are characterised by higher levels of closeness and trust than instrumental ties (Ibarra & Andrews, 1993b), and employees who are at the centre of an informal socialising network in the organisation perceive less interdepartmental conflict than less central employees. Internally, cohesion is highest in both advice and socialising networks compared to other clusters. Team leaders in this cluster can rely on an almost perfect clique-like networking of the team to achieve cooperation and learning within the team. Such a structure requires leadership by consensus, as there are few if any structural holes to allow for strategic leadership behaviour. Externally, leaders have also established above-average number of advice ties to other leaders and team members. They play a role as “boundary spanners” connecting the team with external team members as well as team leaders, which leads us to believe that density is high not only within the team but also in their external network. This is consistent with research showing that the density of boundary-spanning ties becomes valuable when team members are more densely connected within a team (Reagans & Zuckerman, 2001).

The role of team leadership as integrator is a familiar one in knowledge-based industries. Teams are cohesive and leaders use an informal approach to address team issues. The use of power is eschewed with leaders prefer to have confidential conversations with problematic team members. Due to high network density, team leaders can rely on unrestrained information exchange and collaboration without the need for direct intervention by team leaders. Such teams are often seen as self-managing because of the latency of power. Instead of power, team leaders rely on authority based on the social control of the socialisation network, rather than formal control mechanisms. Strategic behaviour, such as office politics, is rare due to the lack of structural holes. Team leaders deal with the external world in a similar way to the internal. They secure external resources by embedding external connections in a dense, redundant network of personal relationships of both leaders and members of other teams. The leadership role of the integrator seems to be fully in line with the classic depiction of cohesion, where leadership is based on social integration and embeddedness of all relevant actors rather than on the exercise of power.

The second leadership role is *professional integrator*. This role is similar to the integrator role in that leaders rely on cohesive teams. However, a crucial difference is that they rely on a formal rather than an informal organisation. The role of the professional integrator involves

a dense work-related advisory network, with the team leader enjoying power and authority. However, they do not work with an informal organisation that is fragmented and where the team leader has no authority or power. Leaders' interpersonal networks of advice relations are considered the most important social conduits through which resources, knowledge and information flow in organisations (Borgatti & Cross, 2003; Kilduff & Krackhardt, 2008). In terms of external relations, team leaders take a similar approach to integrators: they intensively establish personal relations with other team members and team leaders outside the team. We have no reason to believe that these relationships go beyond professional exchanges. The role of the professional integrator is based on cohesion within and outside the team boundaries, but social exchanges seem to be limited exclusively to work-related issues. With high cohesion in the internal and external relations and low cohesion in the informal organisation (socialisation network), the leadership role of the professional integrator is exercised through the network of professional relations. This leadership role is also known especially in virtual teams where the lack of co- location prevents the development of a socialisation network (Burt et al., 2021).

The third cluster identified the leadership role of *power broker*. It is characterised by a moderate density of internal relations that enable the team to function, but also allow for structural holes. The team leader derives power from direct contacts with team members and from bridging connections between team members but does not enjoy authority. Power and influence compensate for the lower density of social relations. The contrast between low authority and high influence suggests that team leaders behave strategically by exploiting structural holes to steer the team towards performance. Consistent with strategic behaviour is also the lack of informal organisation. While the teams' socialisation network is moderately cohesive and most likely fragmented, team leaders have neither authority nor influence in the informal organisation. This suggests that team leaders rely on the formal organisation. The role of the power broker is also evident in external relations. Team leaders seek external connections with other leaders in the organisation by working through the hierarchy rather than using organisation-wide resources provided by other team members. The power broker leadership role is prevalent in organisations where hierarchy and organisational politics play a major role (Pfeffer, 1981). It is consistent with the competitive dynamics within organisations where leaders engage in strategic behaviour for personal advancement—a context that served as the basis for the development of structural hole theory (Burt, 1982, 1992).

The fourth cluster represents the team leadership role of *manager*. The choice of this label may seem paradoxical, as the leadership role is different from the managerial role. This is exactly what we are trying to convey by choosing this label. Leadership roles are focused on relationships, while managerial roles are focused on tasks. Calling a leadership role a manager suggests the absence of leadership, but not the absence of management. Leaders who manage rather than lead can still get results. But they are embedded in an unfavourable social structure. There are few outside relationships, suggesting that leaders are unwilling to go beyond their team to seek advice. They focus on the team, which has moderate cohesion, compensated for by the team leaders' efforts to ensure team performance using limited power, influence and authority. They seem to make an effort because they also engage in a moderately cohesive socialisation network in which they have relatively strong influence by building strategic ties with some team members. The picture that emerges from the data is that of a struggling leader who compensates for a lack of leadership skills through hard management work. However, management that focuses on tasks can never replace leadership that focuses on building relationships. By providing a shared vision

and inspiration to team members, leadership can unlock the human potential of the team, something that management cannot do. Therefore, leadership can rely on steering while management has to row. This leadership role has been incorrectly described as a “laissez-faire” style of leadership (Bass & Avolio, 1994). However, it is not the lack of interest in exercising the leadership role, but the inability of the individual to establish himself or herself as a leader that leads to the absence of leadership and management’s acquiescence. This is an important distinction because the prevalence of leadership as management is striking. In our study, this cluster comprises 30 % of all teams. Recent studies have also found that “laissez-faire” leadership is surprisingly common in today’s workplace (Aasland et al., 2010), with a negative relationship demonstrated between this type of leadership and subordinates’ satisfaction with the leader, evaluations of the leader’s effectiveness and subordinates’ feelings of stress (Judge & Piccolo, 2004; Skogstad et al., 2007).

The four leadership roles identified in this study appear to be more general in nature than specific to this study. The role of integrator was mentioned by Adizes (1985) and has been implied in discussions of cohesion, the role of power broker is the central theme of the structural holes theory proposed by Burt (1992), while absent leadership or laissez-faire leadership occurs throughout the literature but is actually a misnomer as it denotes not a role but the absence of one. To avoid the seductive power of negative definitions, we build on this debate and propose to correct this by referring to the absence of leadership as management. We have shown that leadership roles can be distinguished from teams and team leaders based on the characteristics of social networks. We believe this is an important contribution to the field of leadership in general and team leadership in particular.

6. Conclusion and future research

Our work is a contribution to the recent call for leadership researchers (Anderson & Sun, 2015) to develop a new “full-range” model of leadership that encompasses and elaborates the specificities of the various new leadership styles, as many new styles have been proposed that go beyond the dominant charismatic/transformational and transactional framework. Although we did not include all factors contributing to leadership styles in teams in this analysis, we report some interesting findings. This study extends previous research on teams in four ways.

First, we shift the discussion from leadership styles to leadership roles, which we understand as stable patterns of relationships. By looking at relationships inside and outside teams, we identify two generic leadership roles that correspond to the two forms of social capital: cohesion and structural holes. The role of integrator and professional integrator is based on cohesion, while the role of power broker is based on structural holes. The role of manager represents the absence of leadership. Secondly, this study includes data from 23 teams from 2 countries. Although previous research provides good insights into teams and leadership networks from just one organisation (Balkundi et al., 2009; Schriesheim, 1980), there have been comparatively fewer accounts that include more than one organisation (Chiu et al., 2020; Sparrowe et al., 2001). Third, the analysis showed not only that leaders differ along network characteristics, but also that this tendency is not randomly distributed across teams. Guzzo and Shea (1992) have clearly expressed that researchers need to expand team research to look beyond the interactions and processes between team members to also look at the relationships between teams. Unlike most other team-based studies (Balkundi et al., 2009), this study takes a comprehensive look at leaders and their connections by including internal and external connections in explaining leaders’ network patterns. Fourth, our research contributes to the team literature by using leader networks to understand team dynamics.

Previous studies have shown how difficult it is to build external connections that extend beyond the traditional organisation (Ancona & Caldwell, 1992; Baldwin et al., 1997) because teams have so much time and conflicting information to manage. By examining both the internal and external connections of team leaders, our research provides important insights into cohesive teams in terms of the internal and external roles of their leaders.

Future research could explore how different patterns of leaders' internal and external connections contribute to team performance. Previous research has identified intra-group relationships as a critical part of team leadership, as teams with more informal social exchanges tend to perform better than others (Balkundi & Harrison, 2006). Each of the subdimensional activities, whether internal or external, also facilitates goal achievement and team effectiveness on their own (Druskat & Wheeler, 2003). Future research, however, needs to explore how team and leader network patterns may be critical to team and leader effectiveness.

Another avenue for future research would be to examine whether different types of leadership networks are appropriate for different task environments. The organisational context surrounding a team has been identified by researchers as an important aspect in the study of teams. Researchers have consistently identified the task environment as a source of differentiation between teams, although there is little consensus on classification systems in studies (Hollenbeck et al., 2012). Another line of research needs to address self-managing or autonomous teams. There is a widespread assumption in the literature that self-managing teams are leaderless. Further research should explore our assumption that self-managing teams are led by integrators whose leadership role is deeply embedded in the social structure of the team. Future research could also focus more on how team networks emerge, develop and change. Knowledge about the emergence of different network structures, the extent to which they are the result of individual leadership styles or different organisational or task-related boundaries, would contribute to a better understanding of the dynamics of team networks. In advancing group theory, it is important to consider how internal and external activities influence each other (Ancona & Caldwell, 1992).

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