CORVINUS UNIVERSITY of BUDAPEST

Doctoral School of Business and Management

THESIS SUMMARY

Máté Baksa

Two Heads Are Better Than One: Knowledge Sharing in Organizational Social Networks

Ph.D. dissertation

Supervisors:

Imre Branyiczki, C.Sc.
associate professor

Miklós Dobák, C.Sc.
professor emeritus

Budapest

2023

CORVINUS UNIVERSITY OF BUDAPEST

Doctoral School of Business and Management

Institute of Strategy and Management
Department of Organizational Behavior

THESIS SUMMARY

Máté Baksa

Two Heads Are Better Than One: Knowledge Sharing in Organizational Social Networks

Supervisors:
Imre Branyiczki, C.Sc.
Miklós Dobák, C.Sc.

© Máté Baksa

Information on funding and financial support

The present publication is the outcome of the project „From Talent to Young Researcher project aimed at activities supporting the research career model in higher education", identifier EFOP-3.6.3-VEKOP-16-2017-00007 co-supported by the European Union, Hungary and the European Social Fund.

Supported by the UNKP-2016-2 New National Excellence Program of the Ministry of Human Capacities from the source of the National Research, Development and Innovation Fund.

Supported by the UNKP-2017-3 New National Excellence Program of the Ministry of Human Capacities from the source of the National Research, Development and Innovation Fund.

Supported by the UNKP-2018-3 New National Excellence Program of the Ministry of Technology and Innovation from the source of the National Research, Development and Innovation Fund.

Supported by the UNKP-2019-3 New National Excellence Program of the Ministry of Technology and Innovation from the source of the National Research, Development and Innovation Fund.

Supported by the UNKP-2020-3 New National Excellence Program of the Ministry of Technology and Innovation from the source of the National Research, Development and Innovation Fund.

Supported by the UNKP-2021-4 New National Excellence Program of the Ministry of Technology and Innovation from the source of the National Research, Development and Innovation Fund.

Table of contents

I. Research framework and relevance 3
II. Research gaps and research questions 5
II.1 Enterprise social media 5
II.2 Negative relationships in organizational social networks 6
II.3 Knowledge networks in organizations 7
III. Methods 9
III.1 A paper on enterprise social media 9
III.2 A paper on negative ties in organizational social networks 10
III.3 A paper on the relational conditions of advice-seeking 11
III.4 A paper on multiplex approach to advice-seeking 12
IV. Research results and contributions 13
IV.1 A paper on enterprise social media 14
IV.2 A paper on negative relationships in organizational social networks 15
IV.3 A paper on the relational conditions of advice seeking 16
IV.4 A paper on multiplex approach to advice-seeking 17
V. Summary 19
VI. Author's publications in the field 21
VII. Selected references 23

List of figures

FIGURE 1 INTERCONNECTIONS BETWEEN RESEARCH QUESTIONS 8
FIGURE 2 METHODS AND STRUCTURE OF THE DISSERTATION 9
FIGURE 3 INTERCONNECTIONS BETWEEN CONTRIBUTIONS AND FINDINGS 14

I. Research framework and relevance

For organizations of knowledge-intensive industries, knowledge owned by their employees is one of their most important resources. Their competitiveness depends on the efficient exploitation of acquired knowledge as well as the creation of new knowledge and innovation. In my doctoral dissertation, I explore organizational knowledge networks, with special regard to the relational conditions of advice-seeking and knowledge sharing, negative relationships affecting knowledge networks, and enterprise social media as a virtual space for knowledge transfer. In my thesis summary, I introduce my research approach and research questions before presenting the findings of my research papers.

I compiled my doctoral dissertation using four of my previously published papers. Details of the articles are the following:

- **Baksa, M.** & Drótos, Gy. (2018). Vállalati közösségi média – A személyközi hálózatok motorja. *Vezetéstudomány / Budapest Management Review*, *49*(4), 2–11. https://doi.org/10.14267/veztud.2018.04.01
- **Baksa, M.** (2019). Negatív kapcsolatok a szervezeti hálózatokban – meghatározások, módszerek és mércék. *Vezetéstudomány / Budapest Management Review*, *50*(9), 14–25. https://doi.org/10.14267/veztud.2019.09.03
- **Baksa, M.** & Báder, N. (2020). A tudáskérés és tudásmegosztás feltételei – egy szervezeti tudáshálózat elemzése. *Vezetéstudomány / Budapest Management Review*, *51*(1), 32–45. https://doi.org/10.14267/veztud.2020.01.03
- **Baksa, M.** & Branyiczki I. (2023). The invisible foundations of collaboration in the workplace: A multiplex network approach to advice-seeking and knowledge sharing. *Central European Business Review.* In press. https://doi.org/10.18267/j.cebr.322

The first article explores the unique characteristics and patterns of enterprise social media and its role in organizational social networks and knowledge sharing. In the second article, I draw attention to the individual, social, and organizational effects of negative relationships that are often left out of the scope of organizational network analysis and remain in the blind spot for managers and consultants. In the third article, I analyze the internal knowledge sharing practices of a knowledge-intensive organization by mapping its organizational knowledge network as well as a supplementary interview research. Finally, in the fourth article, I intend

to convincingly investigate the research questions raised in the pilot research featured in the previous paper. The fourth article follows the line of thought and builds on the theoretical constructs introduced in the first three papers and tests research propositions on large organizational samples.

The relevance of my research topic stems from today's socio-economic and technological trends. (1) Over the past five years, there has been an explosion of interest in the fourth industrial revolution across the fields of technology management, strategic management, and organization studies. As an increasing share of low value-added, routine tasks are automated or robotized, knowledge creation and innovation fuel the competitiveness of numerous companies. (2) People and organizations in the globalized economy are now more closely connected than ever before. Blurring organizational boundaries and coopetition between actors draw attention to interorganizational learning and knowledge sharing and the dynamics of knowledge networks. (3) New generations entering the labor market are familiar with social media from an early age, use it naturally and often expect new communication systems to be implemented in the workplace. This need meets the aspiration of companies in knowledge-intensive industries to create physical, virtual, and social spaces that support value-creating innovation and knowledge sharing.

The research questions investigated in the empirical chapters of this doctoral dissertation are examined in knowledge-intensive organizations as (a) knowledge and knowledge sharing possess a higher strategic importance in these companies; (b) almost all employees have some knowledge that in itself or by combined with other knowledge elements can create value for the company; and thus (c) phenomena related to interpersonal knowledge sharing is more prevalent and easier to observe.

II. Research gaps and research questions

II.1 Enterprise social media

In the second half of the 2010s, after the overwhelming success of social media sites Facebook and Twitter, attempts aiming at implementing similar solutions in the workplace rapidly gained traction (Kane et al., 2014a). The features and internal mechanisms of enterprise social media tools are well documented and published by prominent authors of technology management (Kane et al., 2014b; Kane, 2015; Leonardi, 2015; Ellison & Boyd 2013) in leading journals of organizational IT. Management and IT consultants also argued extensively for the implementation and use of enterprise social media, presenting significant profit gains for knowledge-intensive companies (Bughin 2015, simplysucceed, 2015). These profit gains result from a more efficient system of interpersonal knowledge sharing as employees can more quickly find necessary information which also expedites task-based collaboration and knowledge creation.

Even though previous research (Kane et al., 2014; Fulk & Yuan, 2013) established the effects of certain enterprise social media features on knowledge sharing and knowledge production, its interplay with real-life organizational social networks was still unclear. Moreover, while large-sample consultancy studies (Bughin, 2015) demonstrated an increase in profit margins due to the use of enterprise social media in knowledge-intensive organizations, its specific operation (such as common themes discussed, usage patterns, or co-workers' reactions to others' posts and comments) had yet to be documented. Thus, I formulated and investigated the following research questions:

RQ1 How does the use of enterprise social media affect the real-life organizational social network in a Hungarian knowledge-intensive company?

a) In what ways does it substitute for real-life interactions?
b) In what ways does it complement or generate real-life relationships?

RQ2 What are the specific advantages and disadvantages of enterprise social media use based on the sample case study?

RQ3 How does enterprise social media influence knowledge sharing, advice-seeking and social learning in organizational settings?

II.2 Negative relationships in organizational social networks

Conflict, strife, and discord are all very human. Wherever people interact, co-workers bond and friendships blossom, negative relationships appear, too. Workplaces are no exception, even if corporate culture makes open hostility taboo (Baksa, 2019). Negative relationships affect almost every feature of organizational life, from internal communication and knowledge sharing to employee retention, from decision-making to change management. Negative relationships often stay in the blind spot of managers and network researchers who analyze but positive dyadic phenomena (Halgin et al., 2020; Labianca, 2014). In the past few years, the inquiry on negative ties in organizational social networks developed into an individual stream that is lately called as "signed graph research" (Harrigan et al., 2020). Signed graphs refer to networks in which relationships have a valance that could pe positive, neutral, or negative.

My dissertation addresses a research objective that stemmed from a theoretical and a practical knowledge gap, namely, to give an up-to-date overview of an unfolding new research stream that also has direct implications for management practitioners. Though the theoretical foundations of negative tie research had already been established (Labianca & Brass, 2006; Labianca, 2014), as of fall 2018, the submission date of my paper, there were no published literature reviews that would summarize empirical research findings in the field. My paper sought to give an overview on extant research results, arrange them in a theoretical framework of different levels of organizational social networks, and propose directions for future research. The timeliness of this endeavor is corroborated by the fact that similar works (cf. Yang et al., 2019; Harrigan et al., 2020) were only published years later. In my dissertation, I investigated the following research question:

> ***RQ4*** What are the individual, dyadic, group-level, and whole-network-level consequences of negative relationships based on extant empirical research?

II.3 Knowledge networks in organizations

In the past decades, the revolutionary advancement of technology brought the attention of scholars and management practitioners to the challenge of improving the innovative capabilities of organizations (Csedő et al., 2019a). Companies in knowledge-intensive industries increasingly focus on their ability of self-renewal and adaptation (Csedő & Zavarkó, 2019). Other knowledge-based organizations, such as higher education institutions, try to ameliorate their knowledge-producing capabilities. Concurrently, learning-related organizational processes that support the amassment, management, sharing, and deployment of knowledge have grown in importance (Bencsik et al., 2020; Bencsik & Juhász, 2020).

The network perspective in the investigation of organizational knowledge sharing is beneficial because it offers a framework that combines the acquisition and creation of knowledge, along with the individual's role as both a source and recipient of knowledge. A knowledge network is generally understood as "a set of nodes— individuals or higher-level collectives that serve as heterogeneously distributed repositories of knowledge and agents that search for, transmit, and create knowledge—interconnected by social relationships that enable and constrain nodes' efforts to acquire, transfer, and create knowledge" (Phelps et al., 2012 p. 1117).

Previous research in the field of knowledge networks has primarily focused on the impact of organizational factors on network dynamics (Mendoza-Silva, 2021) or applied established social network theories (such as social status theory and social capital theory) (Agneessens & Wittek, 2012), but the underlying relationships that drive advice-seeking and knowledge sharing behavior have not been extensively studied. Hortoványi and Szabó (2006) as well as Mattar et al. (2022) have found that for effective knowledge transfer to happen, there must be a combination of structural, cognitive, and social factors. These factors include the opportunity, ability, and willingness to share knowledge. However, compared to structural and cognitive factors, the interpersonal relationships that are required for knowledge transfer are less visible to managers and are often misunderstood (Marineau et al., 2018; Marineau & Labianca, 2021), and as a result, are less frequently considered when planning actions. Thus, I proposed and examined the research questions as follows:

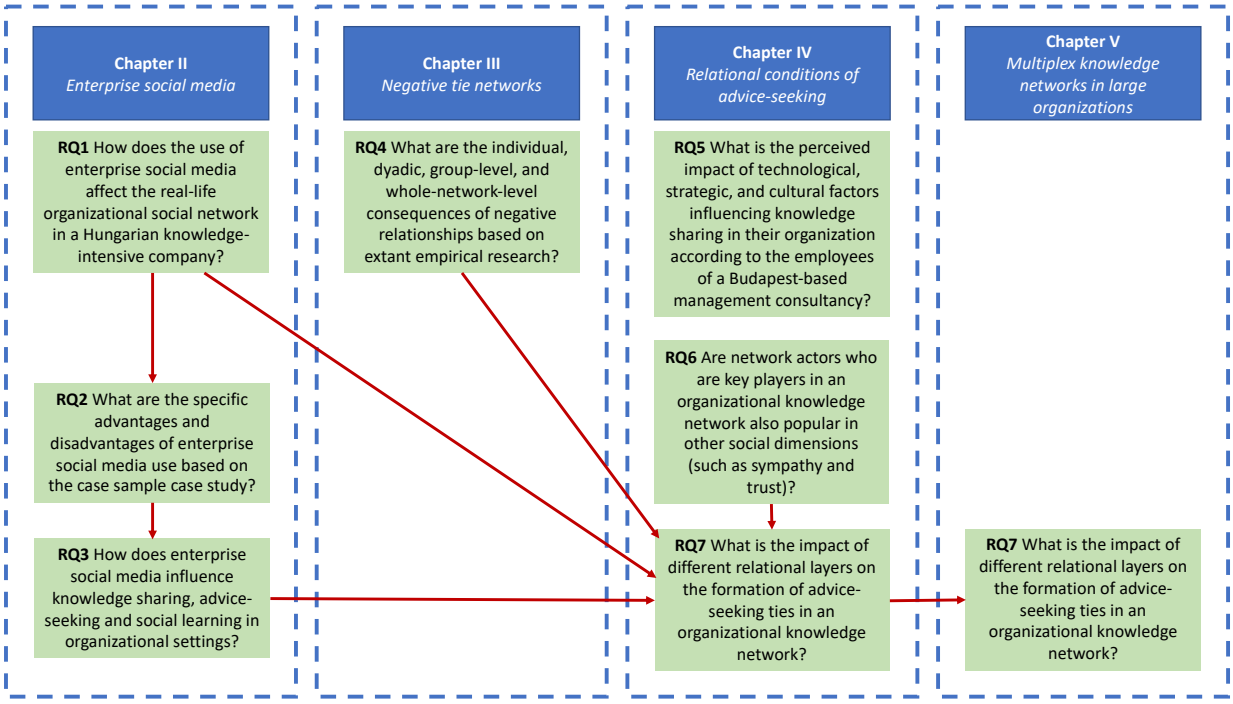
> ***RQ5*** What is the perceived impact of technological, strategic, and cultural factors influencing knowledge sharing in their organization according to the employees of a Budapest-based management consultancy?

RQ6 Are network actors who are key players in an organizational knowledge network also popular in other social dimensions (such as sympathy and trust)?

RQ7 What is the impact of different relational layers on the formation of advice-seeking ties in an organizational knowledge network?

Figure 1 illustrates the interconnections between the research questions formulated in the four papers incorporated in my dissertation.

Figure 1 Interconnections between research questions

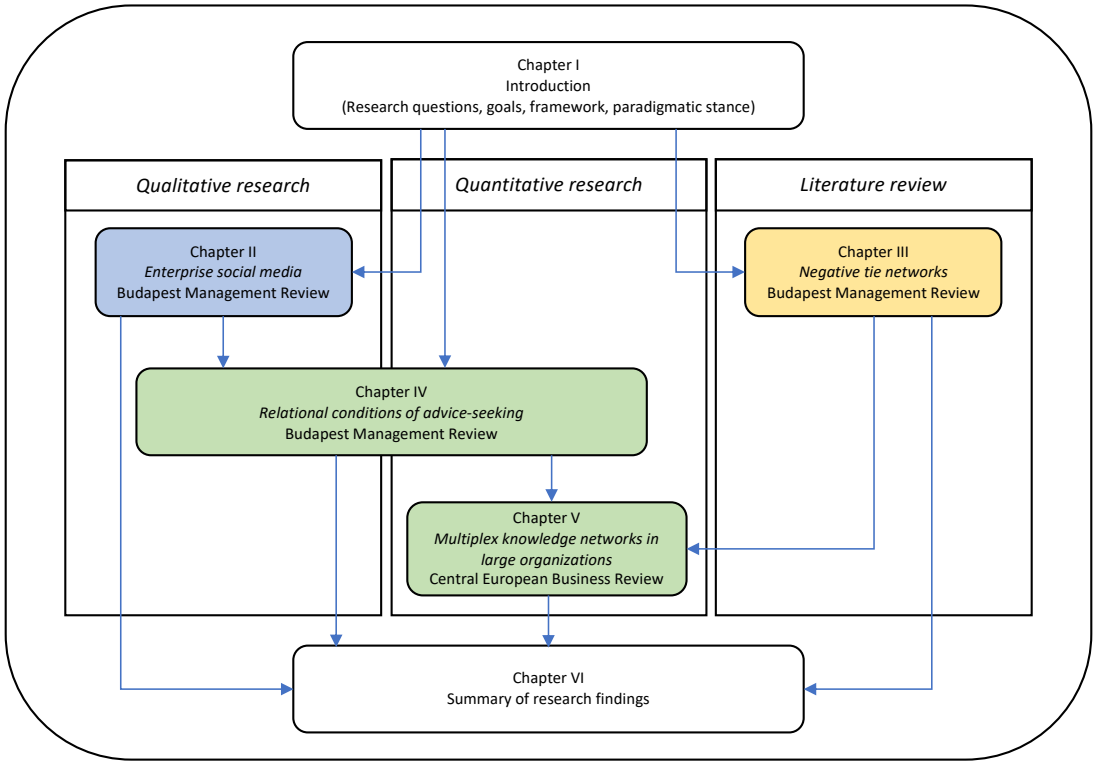


Source: author

III. Methods

To answer the research questions formulated above, I applied a mixed method approach and—besides conducting literature reviews—used qualitative and quantitative methods in the papers incorporated in my dissertation. *Figure 2* demonstrates the methodological approach of each paper (as Chapters II-V of the dissertation) and their conceptual connections. In this section, I summarize the research methods used in each research chapter of my dissertation.

Figure 2 Methods and structure of the dissertation



Source: author

III.1 A paper on enterprise social media

This empirical research aimed to get an exemplary overview of enterprise social media use at a knowledge-intensive Hungarian organization and its organizational effects after the collection and processing of relevant international literature. As individual opinions and experience were important in understanding the communication on the enterprise social media platform, a qualitative research method was chosen for the investigation. To learn about a virtual social space, the study was performed by using the netnography method (Dörnyei &

Mitev, 2010). Netnographic observations were supplemented with additional interviews to increase validity.

This research primarily sought to learn how the use of a virtual social network affected real social relationships in the case of a Budapest-based company. To assess this, the communication in the groups of its enterprise social media platform, Yammer, was analyzed. The level of participation was that of the observer, as the researchers examined a community unknown to them, and did not participate in their social interactions. Available conversations were examined with the approval of the responsible managers and accessed through the account of an employee in the IT department. As the recorded conversations contained business critical and sensitive information, these are not cited, and the participants are not named in the dissertation: the emerging patterns are interpreted at a higher level of abstraction without individual data.

Prior to the interviews, the user groups “active”, “reactive” and “passive” were identified among the approximately 100 users based on the content analysis of their communication in ESM groups. As the basis of classification, their activity, and attitudes towards the use of Yammer were considered. The circle of interviewees was defined in a way that allowed us to learn the characteristic opinions, habits, and experiences of each user group. Semi-structured interviews were conducted with eight members of the organization. Employees of several organizational units and representatives of as many hierarchical levels as possible were purposefully included: in addition to juniors who joined within two years, senior staff and managers of various business lines and competence centers were interviewed.

III.2 A paper on negative ties in organizational social networks

This paper is based on an *exploratory* literature research (Adams et al., 2007). At the time of its submission, the topic was relatively new and understudied in international literature, and thus the number of available research papers would not have permitted a systematic review. In the collection and processing of literature, a mixed method (Grant & Booth, 2009) was used: first, a keyword-based search, then in the second round, a targeted search based on select reference lists and the snowball method. In the keyword-based search, the literature was filtered for peer-reviewed journal articles in the EBSCO and Science Direct databases that were published after 2010 and that contained the words ‘negative tie’ or ‘negative relationship’ in their titles or abstracts. From the results, studies published in other scientific fields were

excluded, and further selections based on professional and content-based criteria were made. Articles that concerned different levels of analysis (individuals, dyads, triads, and whole networks) and multiple types of relationships were prioritized. As it became apparent that key authors in the field are professors at the University of Kentucky LINKS Center for Social Network Analysis, their works were reviewed with particular attention.

III.3 A paper on the relational conditions of advice-seeking

Empirical data collection in the sample organization (the Budapest office of a multinational management consultancy) consisted of two parts. First, with the help of a questionnaire, data related to the organization's knowledge-sharing practices was collected, and the employees were surveyed on their opinion and satisfaction in this regard. Later, additional interviews were conducted with key actors of the emerging knowledge networks in order to get a more complex explanation and insight into network dynamics and the knowledge management processes of the company.

The questionnaire was completed by 21 of the 23 people working in the consultancy, indicating a 91 percent turnout. The survey included questions on the respondent's relationships with other employees, as well as six-point Likert-scale questions evaluating relationships and organizational knowledge management practices. Employee relationships were measured by (1) sympathy, (2) trust, (3) perceived expertise, and (4) self-reported actual advice-seeking. Respondents could nominate up to four people for each question in order to limit their choices to the most significant relationships.

In connection with the question on advice-seeking, they were asked in which subjects they seek out a given actor and how satisfied they were with the information's quality. The Likert scales were set to six points to avoid centering and because the diagnostic tools used by the consultancy also included such scales – making this a familiar solution for respondents. Respondents were also asked to whom they would turn more often for knowledge if they had the opportunity. Here again, the subject of the needed knowledge and the reason why the desired advice-seeking interaction had not realized were scrutinized.

Data collected by the questionnaire were studied using the network analysis software called UCINET (Borgatti et al., 2002). With this program, centrality measures for the whole network and individual actors were calculated and various dimensions of the social network were

visualized. The correlations between the variables and different centrality measures were analyzed with the SPSS 25 statistical program.

Based on the results of the questionnaire, semi-structured interviews were conducted with three key players of the network. These interviews served to provide insight into the knowledge management practices of the focal organization. In this process, the effects of technological, strategic, and cultural factors were examined. The interviews were intended to explore the strategic and technological factors that support or hinder effective knowledge sharing among employees. The interviewees were selected so that their individual points of view would help understand these issues. Two of the three interviewees were managing senior consultants whose selection was also justified by their central role in the knowledge network. The third interviewee had been working as a junior consultant for a shorter time in the organization: their insights were primarily used to complement the managerial perspective.

III.4 A paper on multiplex approach to advice-seeking

Network data of three knowledge-intensive organizations were analyzed to test the research propositions. Sample organizations included a business services center (390 employees), a higher education institution (583 employees), and an ICT company (1970 employees). The first two sample organizations are located in Hungary, while the ICT company operates in the United States. Data was collected by Maven Seven Network Research, Inc., a Budapest-based management consultancy specializing in organizational network analysis. Respondents filled in a self-administered survey questionnaire through a purposefully designed online platform entitled OrgMapper®, developed by Maven Seven. The questionnaire included 18 relational questions of which 8 items were used for this study. The use of public or private datasets issue from previous corporate data collections is in line with the general practice of organizational researchers in the network paradigm as pointed out by Borgatti and Halgin (2011) and Robins (2015).

Datasets from the sample organizations included demographic data of the network actors (i.e., hierarchy level, departmental affiliation) and relational data reflecting the existence of ties between actors in different layers of interpersonal relationships. In line with Labianca's (2014) tripartite model of social relations, some questions measured relationships as behavioral intents, while others focused on judgments, or affections. Survey questions analyzed in the

study were selected from all 18 questionnaire items based on previous research findings as presented in the theoretical framework.

For the purpose of this study, dyads were chosen as units of the analysis. All possible (*n*(n-1)*) directed dyads were investigated in the 9 selected dimensions. In this approach, an observation was an *ij* directed dyad, and variables indicated whether actor *i* chose actor *j* in a specific relational layer (dimension). As suggested by Robins (2015), respondents were limited to four answers per question to avoid the collection of potentially weak, less significant ties. Binary logistic regression was used to investigate the individual explanatory power of each relational dimension (i.e., layers measured by the independent variables) on the presence of advice-seeking behavior in these relationships.

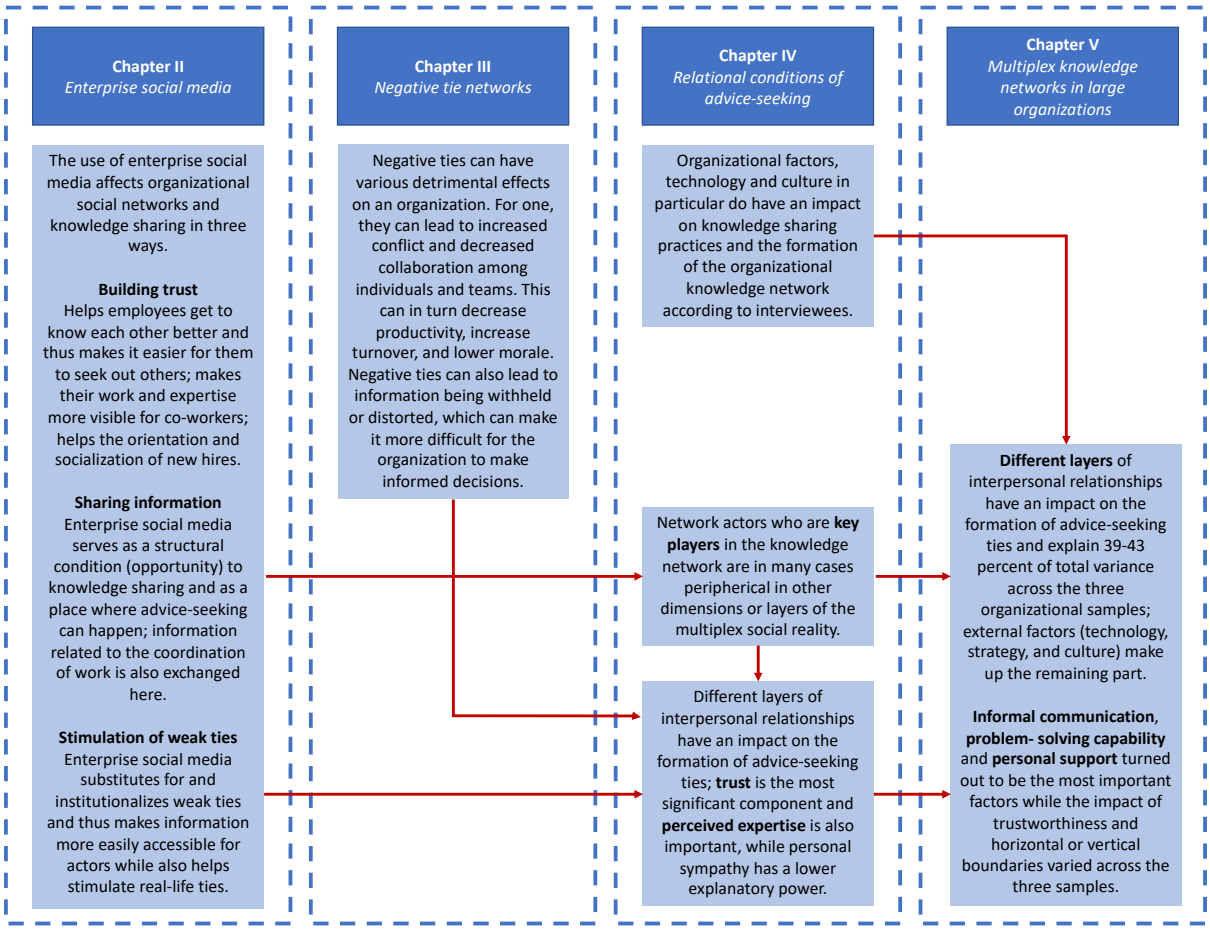
IV. Research results and contributions

In my doctoral dissertation, I presented four papers in three research areas of organizational network theory that are popular in the scientific discourse and relate to the analysis of organizational knowledge networks.

- ⇒ I introduced the theoretical background of enterprise social media based on an extensive literature review. Then, by examining the actual use of enterprise social media in a case study, I presented the ways in which virtual social networks complement and substitute for real-life interpersonal relationships in an organization.
- ⇒ With my literature review on negative ties in social networks, I draw attention to a phenomenon that had previously remained in the blind spot of scholars and managers. I placed negative ties in extant models of social relationships and dyadic phenomena and proposed directions for future research.
- ⇒ Finally, I explored the dynamics of advice-seeking in knowledge networks and their relational preconditions. I demonstrated what layers and characteristics of interpersonal relationships increase the chance of seeking out help and knowledge from co-workers.

In the following sections, I list and summarize the contributions of each paper included in my dissertation. *Figure 3* illustrates the interconnections between different papers based on their findings and contributions to extant literature.

Figure 3 Interconnections between contributions and findings



Source: author

IV.1 A paper on enterprise social media

The use of enterprise social media looks back on a history of just a few years, and its organizational effects had been relatively unexplored. In my paper entitled "*Enterprise* social *media: The engine of organizational social networks,"* I presented the unique characteristics of enterprise social media through a comparison of the mechanisms of social networks in an online and an offline context.

1.1 The study found that enterprise social media helped to build trust relationships in the examined organization through three interrelated features: it helped (1) getting to know each other both professionally and personally, (2) making work visible; (3) and allowed orientation of new members of the organization. These findings align with the literature on trust building in social networks, which has shown that trust is particularly important and a relational condition to knowledge sharing (Hsu et al., 2007; Swift et al., 2013).

1.2 Online behavior in enterprise social media is culturally and generationally embedded. Making one's work and achievements more visible might induce negative feelings and even negative relationships (e.g., envy and gossip) from others as they may regard it as "self-promotion."

1.3 The study also found that enterprise social media helped with knowledge sharing in the organization. The platform's archiving function and searchability made it possible to extract information over time and to find familiar or new content using the system's internal search mechanisms. Interviews and netnographic observations confirmed that employees felt information gathering faster and more efficient using enterprise social media. This is in line with previous research that has found that enterprise social media can support knowledge sharing by providing access to information and by facilitating the discovery of new and unusual content (Fulk & Yuan, 2013; Gibbs et al., 2013).

1.4 In addition, the study also found that enterprise social media supports the development of meta-knowledge, which is the knowledge of who knows what and who knows whom (Leonardi, 2015). This reifies previous research on enterprise social media and knowledge sharing, which has shown that the platform can support the development of meta-knowledge (Kane, 2015; Leonardi et al., 2013).

1.5 Metaknowledge and higher visibility boost the formation of weak ties in the organizational social network as enterprise social media works as a "social lubricant". This finding is in line with Leonardi et al.'s (2013) study. Enterprise social media also partially substitute for weak ties of the social networks as it institutionalizes their function in information gathering.

IV.2 A paper on negative relationships in organizational social networks

Negative relationships affect almost every element of organizational life, from internal communication and knowledge sharing to employee retention, from decision-making to change management. Despite this, negative relationships often stay in the blind spot of managers and network researchers who generally analyze but positive interpersonal phenomena. In my paper entitled "*Negative relationships in organizational social networks: Models, methods, and measures,"* I presented the findings of previous empirical research based on an extensive literature review.

2.1 The first aspect of the literature review is a presentation and comparison of the definitions of negative ties that are commonly used in the literature. This includes an examination of the different types of negative ties and how they are defined by prominent authors in the field. This is an important step in understanding the scope of the literature and the different ways that negative ties are conceptualized. The paper complements Borgatti et al.'s (2009) model on dyadic phenomena with negative ties (as in proximities, relationships, interactions, and flows).

2.2 The second aspect of the literature review is a discussion of the consequences of negative ties as drawn from previous research findings. This includes an examination of the effects of negative ties at different levels of analysis (individual, dyadic, triadic, and whole network). This can help to understand the ways in which negative ties can impact organizational outcomes and how they can be mitigated.

2.3 The third aspect of the literature review is a discussion of the challenges in data collection and analysis in negative tie research. This includes an examination of the difficulties in measuring negative ties and the limitations of current data collection and analysis techniques. This can help to identify areas where future research could improve the understanding of negative ties in organizational networks.

2.4 The fourth aspect of the literature review is a discussion of potential directions for future research. This includes an examination of the dynamic mechanisms that may be examined through longitudinal studies of negative ties, and enduring roles and personal tactics that appear along with negative ties.

IV.3 A paper on the relational conditions of advice seeking

Advice-seeking, that is, the request for professional knowledge and help from a colleague is the antecedent of knowledge sharing, and ultimately, innovation. In my doctoral dissertation, I explored the relational conditions of advice-seeking and knowledge sharing through personal interactions. I present the results of my paper *"Prerequisites of advice-seeking and knowledge sharing: Analysis of an organizational knowledge network"* as follows.

3.1 The analysis of the knowledge network revealed that most of actors had at least one incoming connection, indicating that knowledge sharing was prevalent within the organization. However, the network structure also exhibited a clear separation between the core and periphery, with managers and senior consultants being more popular as knowledge

sources. Key players in the flow of knowledge were identified with centrality measures such as Beta-centrality and betweenness centrality.

3.2 The results indicate that interpersonal trust was the most important explanatory factor in the formation of advice-seeking relationships. Previously existing trust relationships made it more than 25 times more likely that an actor would seek out another whom they deemed trustworthy. This corroborates previous research that emphasized the significance of trust in knowledge sharing (Swift & Hwang, 2013; Agneessens & Wittek, 2012).

3.3 The study also highlighted the importance of perceived competence as a factor in employees' decision-making when seeking out advice. This finding is consistent with previous research that has emphasized the role of perceived expertise in knowledge sharing (Hsu et al., 2007; Wang, 2016).

3.4 Interestingly, personal sympathy among employees, as measured by a willingness to meet beyond working hours, reduced the likelihood of developing advice-seeking relationships in the examined organization. This may be because employees who are a pleasant company are not necessarily those who are regarded as competent and reliable sources of knowledge – and vice versa. Advice-seeking ties in the examined organization are largely directed at managers and senior consultants, who in turn are less popular in the sympathy network: perhaps they are less selected by junior employees because of differences in position and age.

3.5 Additionally, the study found that the organizational culture in the consulting firm was supportive of knowledge sharing. This is in line with previous research that has identified a supportive culture as a key factor in encouraging knowledge sharing behavior (Park & Kim, 2018).

IV.4 A paper on multiplex approach to advice-seeking

This paper proposes that there is merit in conceptualizing advice-seeking behavior as a dyadic phenomenon embedded in an inherently complex social world that could only be comprehensively captured through a multiplex (multi-layered) approach. Multiplex analysis of organizational social networks is likely to shed light on the relational foundations of advice-seeking and knowledge sharing, that is, the type of relationships that make these behaviors more likely to occur. In my paper entitled *"The Invisible Foundations of Collaboration in the Workplace: A Multiplex Network Approach to Advice-Seeking and Knowledge Sharing"* I made the following contributions.

4.1 This study aimed to better understand the factors that influence advice-seeking behavior in relationships. Building on previous research by Borgatti et al. (2014) and Labianca (2014), the study focused on the combination of feelings, judgments, and behavioral intents that make up relationships. A comprehensive model of relational dimensions most frequently associated with advice-seeking was created and found to explain a significant amount of the variance in the formation of advice-seeking ties.

4.2 The analysis of three sample knowledge networks revealed that even though the odds ratios of specific variables (relational dimensions) may vary across datasets, there is a consistent pattern in their significance and relative explanatory power. Informal communication and perceived problem-solving ability were most substantial in all three samples. Differences in the odds ratios might be due to external organizational factors, such as culture, leadership style, or operational profile.

4.3 Following Hortoványi and Szabó's (2006) study, this paper also found that for knowledge transfer to occur, structural, cognitive, and relational conditions must be met. Regular formal and informal communication between actors were proven essential in all three sample datasets.

4.4 Results of this study corroborate earlier findings such as Swift and Hwang (2013) and Cross et al. (2001) about the significance of interpersonal trust in workplace collaboration and learning. These results also provide support for Agneessens and Wittek's (2012) and Mattar et al.'s (2022) theory that actors with a higher formal or informal status are more likely to be sought out for help or advice.

4.5 Contrary to what has been reported by Cross et al. (2001), the perceived helpfulness of an actor was not a significant precursor of another's willingness to seek them out.

4.6 In addition to theoretical contributions, research findings in this paper also suggest for managers that by enhancing organizational communication, building interpersonal trust, and helping their employees to make their expertise more visible, they can effectively foster advice-seeking behaviour. Team building or merely creating opportunities for employees to bond over lunch or after work may strengthen their sense of trust. The use of enterprise social media or other tools that support metaknowledge or ambient awareness (a knowledge of who knows what and who knows whom) may also help employees to make their expertise more visible to others. Rotation programs and cross-functional project assignments, on the other hand, can help advice-seeking ties cross horizontal and vertical organizational boundaries.

V. Summary

In my doctoral dissertation, I explored three research areas of organizational network theory that relate to the analysis of organizational knowledge networks. I applied a mixed method approach, including literature reviews and qualitative and quantitative methods, to answer my research questions. This paper-based dissertation includes four papers in total.

The first paper, entitled "*Enterprise social media: The engine of organizational social networks,"* presents the unique characteristics of enterprise social media through a comparison of the mechanisms of social networks in an online and offline context. The study found that enterprise social media helped to build trust relationships in the organization through three interrelated features: getting to know each other both professionally and personally, making work visible, and allowing orientation of new members of the organization. The study also found that enterprise social media helped with knowledge sharing in the organization, as the platform's archiving function and searchability made it possible to extract information over time and to find familiar or new content. In addition, the study found that enterprise social media supports the development of meta-knowledge, which is the knowledge of who knows what and who knows whom.

The second paper, a literature review on negative ties in social networks, draws attention to a phenomenon that had previously remained in the blind spot of scholars and managers. The author places negative ties in extant models of social relationships and dyadic phenomena and proposes directions for future research.

The third paper, entitled *"Prerequisites of advice-seeking and knowledge sharing: Analysis of an organizational knowledge network,"* explores the dynamics of advice-seeking in knowledge networks and their relational preconditions. Through a case study based on a survey and interviews at a Budapest-based management consultancy, it is found that interpersonal trust and perceived competence were the most important factors in the formation of advice-seeking relationships. The study also found that personal sympathy (as measured by a willingness to meet informally after work) reduced the likelihood of developing advice-seeking relationships and that the organizational culture of the consultancy was supportive of knowledge sharing.

The fourth paper, entitled *"The Invisible Foundations of Collaboration in the Workplace: A Multiplex Network Approach to Advice-Seeking and Knowledge Sharing,"* aimed to understand the relational factors that influence advice-seeking behavior in relationships through a multiplex approach. The paper proposed that a comprehensive model of relational dimensions, including feelings, judgments, and behavioral intents, can explain a significant amount of the variance in the formation of advice-seeking ties. Through the analysis of three sample knowledge networks, the paper found that despite relative explanatory power of variables vary to some extent across samples, relational prerequisites are significant in the formation of advice-seeking relationships in all examined organizations.

Overall, this doctoral dissertation contributes to organizational network theory by providing a deeper understanding of the unique characteristics of enterprise social media, the significance of negative ties in social networks, and the relational preconditions of advice-seeking and knowledge sharing. The multiplex approach to advice-seeking and knowledge sharing proposed in the fourth paper also offers a new perspective on the study of organizational networks.

VI. Author's publications in the field

Journal articles

1. **Baksa, M**.; Branyiczki, I. (2023). The Invisible Foundations of Collaboration in the Workplace: A Multiplex Network Approach to Advice-Seeking and Knowledge Sharing. *Central European Business Review, 12*(2), (in press). https://doi.org/10.18267/j.cebr.322
2. **Baksa, M**. (2021). A kapcsolatok kémiájáról: Az egyéni viselkedés hálózatformáló hatásai. *Vezetéstudomány, 52*(11), pp. 71-73. https://doi.org/10.14267/VEZTUD.2021.11.06
3. **Baksa, M**.; Drótos, Gy. (2021). A szervezetek hálózatelmélete: Gondolati lépések egy új paradigma felé. *Magyar Tudomány, 182*(1), pp. 69-80. https://doi.org/10.1556/2065.182.2021.1.11
4. **Baksa, M**. (2020). A pletyka tudományos rehabilitációja. *Magyar Tudomány, 181*(11), pp. 1568-1570. https://doi.org/10.1556/2065.181.2020.11.15
5. **Baksa, M**.; Báder, N. (2020). A tudáskérés és tudásmegosztás feltételei: Egy szervezeti tudáshálózat elemzése. *Vezetéstudomány, 51*(1), pp. 32-45. https://doi.org/10.14267/VEZTUD.2020.01.03
6. **Baksa, M**. (2019). Negatív kapcsolatok a szervezeti hálózatokban: Meghatározások, módszerek és mércék. *Vezetéstudomány, 50*(9), pp. 14-25. https://doi.org/10.14267/VEZTUD.2019.09.03
7. **Baksa, M**. (2019). A siker megszelídítése. *Magyar Tudomány, 179*(12), pp. 1917-1919. https://doi.org/10.1556/2065.179.2018.12.8
8. **Baksa, M**.; Drótos Gy. (2018). Vállalati közösségi média: A személyközi hálózatok motorja. *Vezetéstudomány, 49*(4), pp. 2-11. https://doi.org/10.14267/VEZTUD.2018.04.01
9. **Baksa, M**. (2018). A vállalati közösségi média mint belső nyilvánosság: Értelmezések és metaforák. *Médiakutató: Médiaelméleti folyóirat, 19*(1), pp. 37-49.

Conference papers and other publications

10. **Baksa, M**.; Gaál, G. (2022). Magyarországi expatrióták kapcsolatháló-építési mintázatai. In. Benke, M.; Schmuck, R.; Riedelmayer, B. (szerk.) *III. Farkas Ferenc Nemzetközi Tudományos Konferencia: „Menedzsment forradalmak": Konferenciakötet.* Pécsi Tudományegyetem Közgazdaságtudományi Kar. Pécs. pp. 158-167.
11. **Baksa, M**.; Gaál, G. (2022). Culture and Organizational Social Networks: Intersections in the Case of Expatriates in Hungary. In. Horváth, B.; Földi, P. (szerk.) *VIII. International Winter Conference of Economics PhD Students and Researchers*. Association of Hungarian PhD and DLA Students. Budapest. pp. 18-26.
12. **Baksa, M**. (2021). A Relational Foundation of Knowledge Production: Advice-Seeking in Knowledge-Based Organizations. In. Baksa, M.; Fazekas, N.; Harmat, V. (szerk.) (2021). New Horizons in Business and Management Studies: Conference Proceedings. Budapesti Corvinus Egyetem. Budapest. pp. 65-74. https://doi.org/10.14267/978-963-503-867-1_07

13. Tóth, R.; **Baksa, M**. (2021). Thin Ice: Teasing Play as a Network-Forming Force in Organizations. In. EGOS (szerk.) *Organizing for an Inclusive Society: Meanings, Motivations, and Mechanisms.* European Group for Organizational Studies. Amsterdam. Paper: ST-35-16.
14. **Baksa, M**. (2021). A szervezeti tudásmegosztás kapcsolati feltételei. In. Koncz, I.; Szova, I. (szerk.) *XXI. PEME–PhD (Online) Konferencia tanulmánykötete*. Professzorok az Európai Magyarországért Egyesület. Budapest. pp. 14-20.
15. **Baksa, M**. (2020). Szétkapcsolt hálózatok: A tartós otthoni munkavégzés lehetséges hatásai a munkahelyi kapcsolatokra. In. Koncz, I.; Szova, I. (szerk.) *A 17 éves PEME XX. (E/1) PhD – Online Konferenciájának előadásai.* Professzorok az Európai Magyarországért Egyesület. Budapest. pp. 16-25.
16. **Baksa, M**. (2020). Többszintű hálózatok: Az integrált elemzés elméleti és módszertani alapjai. In. Bihari, E.; Molnár, D.; Szikszai-Németh, K. (szerk.) *Tavaszi Szél 2019 Konferencia: Konferenciakötet II.* Doktoranduszok Országos Szövetsége. Budapest. pp. 170-180.
17. **Baksa, M**. (2020). Organizational social networks in times of a pandemic: Modeling and mitigating human risks. In. Horváth, B.; Földi, P.; Kápolnai, Zs.; Antalik, I. (szerk.) *International Conference of Economics PhD Students and Researchers in Komarno: Conference Proceedings*. Janos Selye University. Komarno. pp. 17-24.
18. Dunavölgyi, M.; **Baksa, M**. (2019). Hidden female disadvantages in organizational social networks. In. EGOS (szerk.) *Enlightening the Future: The Challenge for Organizations*. European Group for Organizational Studies. Edinburgh. Paper: ST-51-5.
19. Dunavölgyi, M.; **Baksa, M**. (2019). Women's challenges in organizational social networks. In. EURAM (szerk.) *EURAM 2019: Exploring the Future of Management*. European Academy of Management. Lisszabon. Paper: 1692.
20. **Baksa, M**. (2019). Trust and competence: Relational conditions of advice-seeking in organizational social networks. In. Veresné Somosi, M. (szerk.) „*Mérleg és Kihívások" XI. Nemzetközi Tudományos Konferencia Ph.D. szekciók tanulmánykötete*. Miskolci Egyetem Gazdaságtudományi Kar. Miskolc. pp. 13-20.
21. **Dunavölgyi, M**.; Baksa, M. (2019). Szegregáció és integráció a szervezeti kapcsolathálózatokban: Vezetői képességek és versenyképesség. In. Veresné Somosi, M.; Lipták, K. (szerk.) *„Mérleg és Kihívások" XI. Nemzetközi Tudományos Konferencia*. Miskolci Egyetem Gazdaságtudományi Kar. Miskolc. pp. 466-474.
22. **Baksa, M**. (2018). Vállalati közösségi média a tudásmegosztás szolgálatában: Kiaknázatlan lehetőségek tárháza. In. Dinya, L.; Baranyi, A. (szerk.) *XVI. Nemzetközi Tudományos Napok: „Fenntarthatósági kihívások és válaszok" – A Tudományos Napok Publikációi*. EKE Líceum Kiadó. Gyöngyös. pp. 205-213.
23. **Baksa, M**. (2018). Integrációs lehetőségek a személyközi és szervezetközi hálózatok kutatásában. In. Koncz, I.; Szova, I. (szerk.) *A 15 éves PEME XVII. PhD-konferenciájának előadásai*. Professzorok az Európai Magyarországért Egyesület. Budapest. pp. 67-75.
24. **Baksa, M**. (2017). Negatív kapcsolatok szerepe szervezeti innovációs hálózatokban. In. Koncz, I.; Szova, I. (szerk.) *A 15 éves PEME XV. PhD - Konferenciájának előadásai*. Professzorok az Európai Magyarországért Egyesület. Budapest. pp. 56-63.

VII. Selected references

Adams, J., Khan, H. T. A., Raeside, R., & White, D. (2007). *Research Methods for Graduate Business and Social Science Students*. SAGE Publications.

Agneessens, F., & Wittek, R. (2012). Where do intra-organizational advice relations come from? The role of informal status and social capital in social exchange. *Social Networks*, *34*(3), 333–345. https://doi.org/10.1016/j.socnet.2011.04.002

Alvesson, M. (2004). *Knowledge Work and Knowledge-Intensive Firms*. Oxford University Press.

Bencsik, A., Jakubik, M., & Juhasz, T. (2020). The economic consequences of trust and distrust in knowledge-intensive organizations. *Journal of Competitiveness*, *12*(3), 28–46. https://doi.org/10.7441/ joc.2020.03.02

Bencsik, A., & Juhász, T. (2020). Informális tudásmegosztás. A munkahelyi pletyka. *Vezetéstudomány / Budapest Management Review*, *51*(7–8), 89–101. https://doi.org/10.14267/veztud.2020.07-08.08

Borgatti, S. P., Brass, D. J., & Halgin, D. S. (2014). Social Network Research: Confusions, Criticisms, and Controversies. In *Contemporary Perspectives on Organizational Social Networks* (pp. 1–29). https://doi.org/10.1108/s0733-558x(2014)0000040001

Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). *Ucinet for Windows: Software for Social Network Analysis*.

Borgatti, S. P., & Halgin, D. S. (2011). On Network Theory. *Organization Science*, *22*(5), 1168–1181. https://doi.org/10.1287/orsc.1100.0641

Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network Analysis in the Social Sciences. *Science*, *323*(5916), 892–895. https://doi.org/10.1126/science.1165821

Bughin, J. (2015). *Taking the measure of the networked enterprise* (McKinsey Quarterly, pp. 1–4). McKinsey & Company.

Cross, R., Borgatti, S. P., & Parker, A. (2001). Beyond answers: dimensions of the advice network. *Social Networks*, *23*(3), 215–235. https://doi.org/10.1016/s0378-8733(01)00041-7

Csedő, Z., & Zavarkó, M. (2019). Változás, tudás és innováció a vezetéstudományban: elméleti modellek elemzése és értelmezése. *Vezetéstudomány / Budapest Management Review*, *50*(12), 173–184. https://doi.org/10.14267/veztud.2019.12.15

Csedő, Z., Zavarkó, M., & Sára, Z. (2019a). Innováció-e a digitalizáció? A digitális transzformáció és az innovációmenedzsment tanulságai egy pénzügyi szolgáltatónál. *Vezetéstudomány / Budapest Management Review*, *50*(7–8), 88–101. https://doi.org/10.14267/veztud.2019.07.08

Dörnyei, K., & Mitev, A. Z. (2010). Netnográfia avagy on-line karosszék-etnográfia a marketingkutatásban. *Vezetéstudomány / Budapest Management Review*, *41*(4), 55–68.

Ellison, N. B., & Boyd, D. M. (2013). Sociality Through Social Network Sites. Dutton, W. (ed.). *The Oxford Handbook of Internet Studies*. https://doi.org/10.1093/oxfordhb/9780199589074.013.0008

Fulk, J., & Yuan, Y. C. (2013). Location, Motivation, and Social Capitalization via Enterprise Social Networking. *Journal of Computer-Mediated Communication*, *19*(1), 20–37.

Gibbs, J. L., Rozaidi, N. A., & Eisenberg, J. (2013). Overcoming the "Ideology of Openness": Probing the Affordances of Social Media for Organizational Knowledge Sharing. *Journal of Computer-Mediated Communication*, *19*(1), 102–120. https://doi.org/10.1111/jcc4.12034

Grant, M. J., & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, *26*(2), 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Halgin, D. S., Borgatti, S. P., & Huang, Z. (2020). Prismatic effects of negative ties. *Social Networks*, *60*, 26–33. https://doi.org/10.1016/j.socnet.2019.07.004

Harrigan, N. M., Labianca, G., & Agneessens, F. (2020). Negative ties and signed graphs research: Stimulating research on dissociative forces in social networks. *Social Networks*, *60*, 1–10. https://doi.org/10.1016/j.socnet.2019.09.004

Hortoványi, L., & Szabó, R. Z. (2006). Knowledge and Organization: A Network Perspective. *Society and Economy*, *28*(2), 165–179. https://doi.org/10.1556/socec.28.2006.2.6

Hsu, M.-H., Ju, T. L., Yen, C.-H., & Chang, C.-M. (2007). Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations. *International Journal of Human-Computer Studies*, *65*(2), 153–169. https://doi.org/10.1016/j.ijhcs.2006.09.003

Kane, G. C. (2015). Enterprise Social Media: Current Capabilities and Future Possibilities. *MIS Quarterly Executive*, *14*(1), 1–16. https://aisel.aisnet.org/misqe/vol14/iss1/3

Kane, G. C., Alavi, M., Labianca, G., & Borgatti, S. (2014a). What's different about social media networks? A framework and research agenda. *MIS Quarterly*, *38*(1), 275–304.

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2014b). Moving Beyond Marketing: Generating Social Business Value Across the Enterprise. *MIT Sloan Management Review*, *56*(1), 3–36.

Labianca, G. (2014). Negative Ties in Organizational Networks. In *Contemporary Perspectives on Organizational Social Networks* (pp. 239–259). https://doi.org/10.1108/s0733-558x(2014)0000040012

Labianca, G., & Brass, D. J. (2006). Exploring the Social Ledger: Negative Relationships and Negative Asymmetry in Social Networks in Organizations. *Academy of Management Review*, *31*(3), 596–614. https://doi.org/10.5465/amr.2006.21318920

Leonardi, P. M. (2015). Ambient Awareness and Knowledge Acquisition: Using Social Media to Learn "Who Knows What" and "Who Knows Whom." *MIS Quarterly*, *39*(4), 747–762. https://doi.org/10.25300/misq/2015/39.4.1

Leonardi, P. M., Huysman, M., & Steinfield, C. (2013). Enterprise Social Media: Definition, History, and Prospects for the Study of Social Technologies in Organizations. *Journal of Computer-Mediated Communication*, *19*(1), 1–19. https://doi.org/10.1111/jcc4.12029

Marineau, J. E., & Labianca, G. (2021). Positive and negative tie perceptual accuracy: Pollyanna principle vs. negative asymmetry explanations. *Social Networks*, *64*, 83–98. https://doi.org/10.1016/j.socnet.2020.07.008

Marineau, J. E., Labianca, G., Brass, D. J., Borgatti, S. P., & Vecchi, P. (2018). Individuals' power and their social network accuracy: A situated cognition perspective. *Social Networks*, *54*, 145–161. https://doi.org/10.1016/j.socnet.2018.01.006

Mattar, L., Higgins, S. S. S., & Neves, J. A. B. (2022). Diversity and autonomy in the structuration of a multilevel organizational social network in a technology park. *Social Networks, 68*, 346–355. https://doi.org/10.1016/j.socnet.2021.08.009

Mendoza-Silva, A. (2021). Innovation capability: A sociometric approach. *Social Networks, 64*, 72–82. https://doi.org/10.1016/j.socnet.2020.08.004

Park, S., & Kim, E.-J. (2018). Fostering organizational learning through leadership and knowledge sharing. *Journal of Knowledge Management*, *22*(6), 1408–1423. https://doi.org/10.1108/jkm-10-2017-0467

Phelps, C., Heidl, R., & Wadhwa, A. (2012). Knowledge, Networks, and Knowledge Networks. *Journal of Management*, *38*(4), 1115–1166. https://doi.org/10.1177/0149206311432640

Robins, G. L. (2015). *Doing Social Network Research: Network-based Research Design for Social Scientists*. SAGE Publications.

Swift, P. E., & Hwang, A. (2013). The impact of affective and cognitive trust on knowledge sharing and organizational learning. *The Learning Organization*, *20*(1), 20–37. https://doi.org/10.1108/09696471311288500

Szász, L., Rácz, B.-G., Scherrer, M., & Deflorin, P. (2019). Disseminative capabilities and manufacturing plant roles in the knowledge network of MNCs. *International Journal of Production Economics*, *208*, 294–304. https://doi.org/10.1016/j.ijpe.2018.12.004

Wang, W. (2016). Examining the Influence of the Social Cognitive Factors and Relative Autonomous Motivations on Employees' Knowledge Sharing Behaviors. *Decision Sciences*, *47*(3), 404–436. https://doi.org/10.1111/deci.12151

Yang, S. W., Trincado, F., Labianca, G. (Joe), & Agneessens, F. (2019). Negative Ties at Work. In D. J. Brass & S. P. Borgatti (Eds.), *Social Networks at Work* (pp. 49–78). https://doi.org/10.4324/9780203701942-4