

NETWORKS MATTER: TAKING A RELATIONAL PERSPECTIVE ON STRATEGIC MANAGEMENT

PhD thesis submitted to the Faculty of Economics and Business

Institute of Management

University of Neuchâtel

For the PhD degree in Management

by

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Defended on 04 December 2023



IMPRIMATUR POUR LA THÈSE

Networks matter: Taking a relational perspective on
strategic management

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Le doyen
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Abstract

Individuals in organizations are inter-connected through formal and informal relations in social networks. Such social networks are particularly relevant for strategic management because various organizational actors (e.g., employees, managers, top managers, CEO, and board of directors) are involved in the development and implementation of the strategy and jointly contribute to the organization's strategic outcomes. This dissertation focuses on the intersection of social networks and strategic management to examine how adopting a social network perspective can advance our knowledge of strategic management. It investigates how social networks, their relational, structural, and dynamic patterns, and networking behaviors of organizational actors help or hinder organizations in achieving their strategic goals. Moreover, this dissertation offers insights about how organizations can leverage these social networks and influence networking behavior to gain competitive advantages and achieve their strategic goals. This dissertation consists of three research articles addressing different strategic management topics by studying various aspects of social networks. The first article examines how relational networks of new CEOs affect an organization's strategic change; it shows that outsider CEOs' weaker internal networks and larger external networks result in a higher degree of strategic change in a business-as-usual situation, but lower strategic change in firms facing turnaround situations. The second article studies how entrepreneurs' active networking benefits their businesses; it shows that network-brokerage behaviors – bridging unconnected individuals – are the most effective for gaining benefits and female entrepreneurs are less active in network brokerage. The third article explores the multiple roles of social networks in strategic human resource management. It addresses how management practices, through influencing and shaping social networks in organizations, can support strategic outcomes. In summary, by applying social network theory, the three articles of this dissertation generate theoretical and practical implications for various topics in strategic management, including strategic leadership, entrepreneurship, and strategic human resource management.

Keywords: Social networks, organizational networks, strategic management, networking behavior

Résumé

Dans les organisations, les individus sont liés entre eux par des relations formelles et informelles. Les réseaux sociaux sont particulièrement pertinents pour la gestion stratégique, car divers acteurs organisationnels (par exemple : les employés, les gestionnaires, les cadres supérieurs, le PDG, le conseil d'administration) sont impliqués dans le développement et la mise en œuvre de la stratégie et contribuent conjointement aux résultats stratégiques de l'organisation. Cette thèse explore l'intersection entre les réseaux sociaux et la gestion stratégique afin de déterminer comment l'adoption d'une perspective de réseau social peut enrichir notre compréhension de la gestion stratégique. Cette étude analyse comment les réseaux sociaux, incluant leurs modèles relationnels, structurels et dynamiques, ainsi que les comportements de réseautage des acteurs organisationnels, influent sur la réalisation des objectifs stratégiques des organisations. Elle propose des recommandations sur la manière dont les organisations peuvent exploiter ces réseaux sociaux et ces comportements de réseautage pour obtenir des avantages concurrentiels et atteindre leurs objectifs stratégiques. Cette thèse se compose de trois articles de recherche qui abordent différents sujets de gestion stratégique en étudiant divers aspects des réseaux sociaux. Le premier article examine comment le réseau relationnel des PDG nouvellement nommés avec les parties prenantes internes et externes affecte le changement stratégique de l'organisation. Le deuxième article étudie comment les comportements de réseautage actif permettent aux entrepreneurs de tirer profit de leurs réseaux pour leur entreprise. Le troisième article explore les rôles multiples des réseaux sociaux dans la gestion stratégique des ressources humaines et traite de la manière dont les pratiques de gestion soutiennent les résultats stratégiques en influençant et en façonnant les réseaux sociaux dans les organisations. Les trois articles qui composent cette thèse apportent une contribution significative à la théorie des réseaux sociaux, en générant des implications théoriques et pratiques pour différents domaines de la gestion stratégique, tels que le leadership stratégique, l'entrepreneuriat et la gestion stratégique des ressources humaines.

Mots-clés: Réseaux sociaux, réseaux organisationnels, gestion stratégique, comportements en réseau

Acknowledgement

Embarking on the intricate path of a PhD dissertation is no small feat. As I reflect on this transformative journey, I extend my deepest gratitude to those who played pivotal roles.

Foremost among them is my supervisor, Prof. Claudia Jonczyk Sédès. Her unwavering support, invaluable guidance, and scholarly expertise have been the cornerstone of this academic venture, shaping not only the trajectory of my research but also fostering my growth as a scholar. My sincere appreciation also goes to the members of my dissertation committee, Prof. Cinzia Dal Zotto, Prof. Emmanuelle Fauchart, and Prof. Cécile Emery. Their expertise, thoughtful comments, and dedication to scholarly rigor have significantly enriched the quality of this research.

A special acknowledgment is due to Prof. Dimitrios Georgakakis and Dr. Tina Miedtank. Their collaborative spirit, insightful feedback, and dedicated contributions have added profound depth to my academic inquiries. Beyond these invaluable contributions, their generosity in sharing extensive academic experiences and providing advice has been a continuous source of inspiration and growth. Additionally, immense gratitude extends to Prof. Stefano Tasselli, who hosted my research visit at the Exeter Centre for Social Networks alongside Prof. Cécile Emery. His insightful advice and precious support during and after my visit have been invaluable. Appreciation also goes to the other research fellows at the Exeter Centre for Social Networks for their collective support and camaraderie.

Furthermore, sincere thanks are extended to my colleagues at the Institute of Management. Their camaraderie and encouragement have contributed to my PhD journey.

Lastly, boundless gratitude to my family. Their unconditional love, unwavering encouragement, and generous understanding have been my pillars of strength throughout the highs and lows of this remarkable journey.

To my grandparents

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Introduction

‘Individuals are embedded in thick webs of social relations and interactions’ (Borgatti, Mehra, Brass, & Labianca, 2009: 892). These relations and their networks affect individuals’ behavior (Marin & Wellman, 2011). This observation is the starting point of social network research. Network scholars attempt to explain various social phenomena through a relational lens. Figure 1 presents a typical social network diagram, where each node represents an individual, and the edge between two nodes indicates an established relation between two individuals.



Figure 1: Social network diagram (an example)

1. Networks matter for organizations

Over the past three decades, management scholars have adopted a social network perspective to study various organizational phenomena by examining how individuals in the organization (i.e., organizational members, such as employees, managers, top managers, CEOs, and board members) are connected internally and externally with stakeholders through formal and informal relations. Such relations and the network patterns formed by these relations affect an individual’s cognition and behavior and thereby impact individual outcomes, such as power (e.g., Brass & Burkhardt, 1993), career advancement (e.g., Jonczyk, Lee, Galunic, & Bensaou, 2016), job performance (e.g., Regt, Molleman, & Van de Brake, 2019), creative outputs (e.g., Gong, Kim, & Liu, 2020). Furthermore, they also impact organizational outcomes, such as

decision-making (e.g., Kijkuit & van den Ende, 2007), knowledge exploration capability (e.g., Mors, Rogan, & Lynch, 2018), innovation (e.g., Ahlin, Drnovšek, & Hisrich, 2014), organizational ambidexterity (e.g., Heavy, Simsek, & Fox, 2015), and organizational performance (e.g., Song, Fang, Wang, & Shi, 2020). This stream of work is distinct from studies on individual attributes (e.g., race, gender, education, or personality), which treat individuals as independent and isolated actors. Network research generates rich implications for management research, including organizational studies (e.g., Brass, Galaskiewicz, Greve, & Tsai, 2004; Kilduff & Brass, 2010; Carpenter, Li, & Jiang, 2012), human resource management (e.g., Soltis, Brass, & Lepak, 2018; Soltis, Methot, Gittell, & Harris, 2023), international business (e.g., Cuypers, Ertug, Cantwell, Zaheer, & Kilduff, 2020), entrepreneurship (e.g., Hallen, Davis, & Murray, 2020), gender and diversity topics (e.g., Brands, Ertug, Fonti, & Tasselli, 2022; Woehler, Cullen-Lester, Porter, & Frear, 2021), and team studies (Mohammed, Rico, & Alipour, 2021; Park, Grosser, Roebuck, & Mathieu, 2020).

Following a large group of social network researchers (e.g., Granovetter, 1973; 1983; 1985; Freeman, 1979; Burt, 1992), social network studies in the field of management have been mainly investigating the relational and structural patterns of organizational networks and their impact on outcomes (Kilduff & Brass, 2010). Carpenter and colleagues' (2012) review paper provides a good overview of some widely studied network constructs at various levels of networks. At the node level, a set of network constructs reflect the focal individual's structural position in the network (Carpenter et al., 2012), such as centrality (Freeman, 1979) and network constraint (Burt, 1992). A central person, directly or indirectly connected to more of the others in the network, benefits from the advantage of access to diverse resources. Burt (1992) proposed the term "structural hole" to describe "the separation between nonredundant contacts" (Burt, 1992: 18). An individual holding the central position in the structural hole (i.e., a brokerage position, reflected as low network constraint) serves as a "broker" between the

individuals who are otherwise unconnected and benefits from access to nonredundant resources and the power of controlling the resource flow (Burt, 1992).

At the dyadic level, the strength of ties (Granovette, 1973) and the type of ties (Kilduff & Brass, 2010) are widely studied. Borgatti and Cross (2003) suggest that the probability of using another individual as a source of information depends on first, knowing what the other person knows, second, valuing what the other person knows, third, being able to gain timely access to the other person's views, and fourth, knowing that that source of information will not be costly. Social ties between individuals, characterized by frequent interaction and long relationship duration (Carpenter et al., 2012; Granovetter, 1973), facilitate information and knowledge exchange and encourage sharing advice and support (Carpenter et al., 2012). Granovetter (1983: 209) argued that 'strong ties have greater motivation to be of assistance and are typically more easily available,' as sharing complex knowledge requires a provider's willingness to put efforts into explaining the details (Hansen, 1999).

At the network level, depending on the boundary specification and sampling methods, some studies focus on single individuals' ego networks regarding how these individuals and their contacts are connected, and other studies look at complete networks of a group of individuals in focal organizations (Carpenter et al., 2012; Jacobsen, Stea, & Soda, 2022). Structural patterns of networks indicate how all the individuals in the same networks are interconnected and how the resources flow in the networks (Borgatti et al., 2009). According to the density of networks, two structural types of networks are usually distinguished and compared: 1) a closed network, where individuals in the network are densely connected, and 2) an open network, where individuals are less densely connected with more structural holes (Burt, 1992; Tortoriello, McEvily, & Krackhardt, 2014; Opper & Burt, 2021). Social networks and their structures are particularly relevant for strategic management because various organizational actors (e.g., employees, managers, top managers, CEO, and board of directors)

are involved in the development and implementation of the strategy (Bromiley & Rau, 2016; Carpenter, Geletkanycz & Sanders, 2004; Wooldridge, Schmid & Floyd, 2008) and jointly contribute to the organization's strategic outcomes. Studying their relations and networks provides a complementary perspective of understanding organizational phenomena and offers insights into how organizations can leverage these social networks to achieve strategic goals.

An emerging literature has become interested in the antecedents of these network structures (Tasselli, Kilduff, & Menges, 2015) and explores how networks emerge, evolve, and develop over time (Ahuja, Soda, & Zaheer, 2012; Chen, Mehra, Tasselli, & Borgatti, 2022; Jacobsen et al., 2022). The dynamic nature of organizational networks provides the premise to explore how individuals and organizations can play a role in shaping networks. Reviewing the relevant studies, Chen and colleagues (2022) summarize three antecedents of the formation and evolution of organizational networks: 1) relational factors, 2) contextual factors, and 3) actor attributes. First, relational factors (local structural factors) refer to the existing ties in networks that affect the likelihood of forming new ties or the dissolution of old ones (Chen et al., 2022; Hallen et al., 2020). One example, following the balance theory (Chen et al., 2022; Heider, 1958), is that an individual is likely to get connected to friends of a friend (i.e., transitivity) and unlikely to befriend enemies of a friend. Established literature on organizational networks has identified a few relational factors (Chen et al., 2022; Jacobsen et al., 2022). Exploring their effect helps us to better predict the development of organizational networks. Second, contextual factors refer to the social and environmental contexts in which networks and actors of networks are embedded, including formal organizational design and organizational restructuring (Chen et al., 2022; Kleinbaum, Stuart, & Tushman, 2013). Studying organizational contextual factors for social network dynamics is particularly relevant for strategic management because it advances our knowledge about how organizations can adjust the formal structure and design management practices to influence and shape social networks for competitive advantages.

Third, regarding actor attributes, various characteristics at the individual level, such as demographic similarity and personality have been studied (Chen et al., 2022; Tasselli et al., 2015). For example, those with the same background (e.g., gender & race) are more likely to get connected (i.e., homophily) (McPherson, Smith-Lovin, & Cook, 2001). Actors sometimes play an active role in shaping their networks through deliberate networking strategies and behaviors (Tasselli & Kilduff, 2021). An increasing number of studies have started to focus on the purposeful individuals in networks (i.e., network agency) regarding how they carry out networking behaviors and strategies (Vissa, 2012) and how their purposive actions allow them to shape network structures and attain advantageous positions (Tasselli & Kilduff, 2021; Hallen et al., 2020). For example, empirical evidence shows that some individuals are highly efficient in connecting to specific contacts (i.e., devoted players). In contrast, others are more passive (i.e., purists; Bensaou, Galunic, & Jonczyk-Sédès, 2014). Studying why some individuals are more active in networking and how their networking behaviors and strategies affect social networks and generate beneficial strategic outcomes provides insights into how organizations could encourage and support employees to network more efficiently.

2. Taking a relational perspective on strategic management

This dissertation focuses on the intersection of social networks and strategic management. It studies social networks in organizational contexts – networks formed by formal and informal relations between individuals within and between organizations – and examines how they advance the knowledge about various topics in strategic management. In particular, it investigates how social networks, their relational and structural patterns and their dynamics, and networking behaviors of organizational actors help or hinder organizations in achieving their strategic goals. Moreover, how organizations can leverage these social networks and networking behaviors for competitive advantages. This dissertation consists of three research articles; they address different sub-questions by studying various aspects of social networks

and contribute to various topics in strategic management, including strategic leadership, entrepreneurship, and strategic human resource management, as well as social network theory.

The first article, entitled “*It’s the network: Why outsider CEOs bring (less) strategic change,*” addresses how social networks of Chief Executive Officers (CEO) with internal and external stakeholders affect an organization’s strategic change. Adopting a social network perspective and focusing on the structure of new CEO’s social networks, this empirical study explains why outsider CEOs do (or do not) bring strategic change to organizations. CEOs play the most crucial role in influencing the strategy of the organization through their strategic choices (Hambrick & Mason 1,984), and CEO succession researchers posit that new CEOs generate strategic changes for the organization through their different strategic choices compared to their predecessor (Cragun, Nyberg, & Wright, 2016; Friedman & Singh, 1989). Since the new CEO is not an isolated individual, their social networks with stakeholders inside and outside the firm impact their strategic choices. CEO’s social networks serve as their unique source of information and knowledge (Heavey et al., 2015) and influence the way they process the information and understand the strategic situation for making strategic decisions. In addition, the organizational context impacts how the new CEO could leverage their internal and external social networks for strategic change. In particular, the CEO faces different challenges in a turnaround situation compared to a business-as-usual situation (Trahms, Ndofor, & Sirmon, 2013), and their social networks may help overcome these barriers to implementing strategic change. Studying a new CEO’s internal and external networks and their effects in a turnaround vs. business-as-usual situation provides a better understanding of CEO succession. I propose a theoretical framework suggesting that an outsider CEO’s weaker network with board members and more extensive network with external business elites accelerate strategic change in the business-as-usual situation but hinder the implementation of strategic change in firms in a crisis. The hypotheses in the proposed framework are tested in a

quantitative empirical study of 2208 new CEOs appointed at S&P 1500 companies between 2000 and 2017. The results support the hypotheses. This work contributes to strategic leadership – particularly the literature on CEO succession (Berns & Klarner, 2017) – and social network theory regarding the complex effects of social networks in different business contingencies (Wong & Boh, 2014).

The second article, entitled “*Reap what you sow: Who benefits from business networks*”, addresses how active networking behaviors enable entrepreneurs to gain benefits for their businesses from their networks. Adopting a network agency perspective and focusing on individual networking behaviors, this empirical study explores how purposive individuals (e.g., entrepreneurs) transform potential opportunities in their networks into tangible benefits and what antecedents may constrain them from carrying out more beneficial networking behaviors. Extensive research on social networks in entrepreneurship has demonstrated that entrepreneurs benefit from their networks by getting access to investment (e.g., Hallen, 2008) and strategic advice (e.g., Vissa & Chacar, 2009), achieving business growth (e.g., Batjargal, Hitt, Tsui, Arregle, Webb, & Miller, 2013), and increasing venture performance (e.g., Patel & Terjesen, 2011). Knowing that, an increasing number of networking organizations have been established and attracted a large number of members. In a large business networking organization in Switzerland, I conducted a quantitative empirical study on networking behaviors of 1858 active member entrepreneurs in 81 established business networks over the past 13 years to examine how entrepreneurs achieve tangible benefits for their business (i.e., receiving business referrals) through their networking behaviors. The results show that active networking behaviors for deepening, broadening, and brokering network relations have a positive impact on gaining benefits from the network, among which network-brokerage behaviors are the most beneficial. I further find that female and male entrepreneurs tend to adopt different networking behaviors, and the effectiveness of their behaviors in gaining

benefits is also gendered. Supplementary analysis shows that entrepreneurial context, in terms of the sector of business activities, favors or constrains entrepreneurs' networking behaviors. This study contributes to entrepreneurship – particularly the literature on entrepreneurial networking – and the role of agency in social network theory (Tasselli & Kilduff, 2021; Ahuja et al., 2012) by offering a more fine-grained understanding of networking behaviors and the derived network benefits.

The third article, entitled “*Take a relational stance: How social network studies can advance strategic human resource management,*” addresses how integrating different aspects of social networks, including network structure, network content, network cognition, network dynamics, and network agency, advances understanding of strategic human resource management (SHRM). In this conceptual work, I explore the role of social networks and discuss how social networks contribute to strategic outcomes of SHRM and how human resource (HR) practices support SHRM outcomes by influencing and shaping social networks in organizations. Through a systematic review of social network studies in the context of SHRM, I find that the social networks in organizational contexts – especially their structures – can improve organizational performance (e.g., Song et al., 2020), foster knowledge transfer and innovation (e.g., Tortoriello et al., 2014), support organizational change and adaptation processes (e.g., Vardaman, Amis, Dyson, Wright, & Van de Graaff Randolph, 2012), and help integrate international operations (e.g., Guler & Guillen, 2010). It also suggests that understanding the networking behaviors of women and minorities (e.g., Woehler et al., 2021) helps organizations leverage diverse workforces and build an inclusive organizational culture. Based on these findings and the ongoing research conversations in social networks and SHRM, I propose a conceptual framework at the intersection between social networks and SHRM to model the multiple interactions among HR practices, social networks, and SHRM outcomes, as well as the contingencies that may affect these interactions. I provide suggestions for future

research at the intersection between social network studies and SHRM, which focuses on exploring the role of social networks in the SHRM process, considering contingencies when leveraging social networks and integrating network dynamics, network agency, and network cognition in SHRM. This conceptual work contributes to SHRM by summarizing and discussing how social network studies play multiple roles in advancing SHRM research.

Overall, this dissertation contributes to the literature on social networks and various topics in strategic management, including strategic leadership, entrepreneurship, and SHRM. For social networks, the two empirical studies enhance social network theory by examining the antecedents and consequences as well as contextual contingencies of network structure of CEOs and network agency of entrepreneurs. The theoretical work summarizes how different aspects of social networks have been studied in SHRM. It discusses how future research can further integrate different perspectives in social network theory, such as network dynamics, network agency, and network cognition. This dissertation suggests that the social network perspective can provide a nuanced exploration of and complementary explanations for various organizational phenomena. It provides academic and practical insights on how organizations could leverage social networks to achieve strategic goals and enhance competitive advantages.

References

- Ahlin, B., Drnovšek, M., & Hisrich, R. D. (2014). Exploring the moderating effects of absorptive capacity on the relationship between social networks and innovation. *Journal for East European Management Studies*, 213-235.
- Ahuja, G., Soda, G., & Zaheer, A. (2012). The genesis and dynamics of organizational networks. *Organization Science*, 23(2), 434-448.
- Batjargal, B. A. T., Hitt, M. A., Tsui, A. S., Arregle, J. L., Webb, J. W., & Miller, T. L. (2013). Institutional polycentrism, entrepreneurs' social networks, and new venture growth. *Academy of Management Journal*, 56(4), 1024-1049.
- Bensaou, B. M., Galunic, C., & Jonczyk-Sédès, C. (2014). Players and purists: Networking strategies and agency of service professionals. *Organization Science*, 25(1), 29-56.
- Berns, K. V.D., & Klarner, P. (2017). A Review of the CEO Succession Literature and A Future Research Program. *Academy of Management Perspectives*, 31(2), 83-108.

- Borgatti, S. P. & Cross, R. (2003). A relational view of information seeking and learning in social networks. *Management Science*, 49(4), 432-445.
- Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network Analysis in the Social Sciences. *Science*, 323, 892-895.
- Brands, R., Ertug, G., Fonti, F., & Tasselli, S. (2022). Theorizing gender in social network research: What we do and what we can do differently. *Academy of Management Annals*, 16(2), 588-620.
- Brass, D. J., & Burkhardt, M. E. (1993). Potential power and power use: An investigation of structure and behavior. *Academy of Management Journal*, 36(3), 441-470.
- Brass, D. J., Galaskiewicz, J., Greve, H. R., & Tsai, W. (2004). Taking stock of networks and organizations: A multilevel perspective. *Academy of Management Journal*, 47(6), 795-817.
- Bromiley, P., & Rau, D. (2016). Social, behavioral, and cognitive influences on upper echelons during strategy process: A literature review. *Journal of Management*, 42(1), 174-202.
- Burt, R. S. (1992). *Structural holes: A new theory of competition*. Cambridge, MA: Harvard University Press.
- Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, 30(6), 749-778.
- Carpenter, M. A., Li, M., & Jiang, H. (2012). Social Network Research in Organizational Contexts: A Systematic Review of Methodological Issues and Choices. *Journal of Management*, 38(4), 1328–1361.
- Chen, H., Mehra, A., Tasselli, S., & Borgatti, S. P. (2022). Network dynamics and organizations: A review and research agenda. *Journal of Management*, 48(6), 1602-1660.
- Cragun, O. R., Nyberg, A. J., & Wright, P. M. (2016). CEO succession: What we know and where to go? *Journal of Organizational Effectiveness: People and Performance*, 3(3), 222–264.
- Cuyppers, I. R., Ertug, G., Cantwell, J., Zaheer, A., & Kilduff, M. (2020). Making connections: Social networks in international business. *Journal of International Business Studies*, 51, 714-736.
- Freeman, L. C. (1979). Centrality in social networks conceptual clarification. *Social Networks*, 1, 215–239.
- Friedman, S. D., & Singh, H. (1989). CEO succession and stockholder reaction: The influence of organizational context and event content. *Academy of Management Journal*, 32(4), 718–744.
- Gong, Y., Kim, T. Y., & Liu, Z. (2020). Diversity of social ties and creativity: Creative self-efficacy as mediator and tie strength as moderator. *Human Relations*, 73(12), 1664-1688.
- Granovetter, M. S. (1973). The strength of weak ties. *American journal of sociology*, 78(6), 1360-1380.
- Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological theory*, 201-233.

- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American journal of sociology*, 91(3), 481-510.
- Guler, I. & Guillen, M. F. (2010). Home country networks and foreign expansion: Evidence from the venture capital industry. *Academy of Management Journal*, 53(2), 390-410.
- Hallen, B. L. (2008). The causes and consequences of the initial network positions of new organizations: From whom do entrepreneurs receive investments? *Administrative Science Quarterly*, 53(4), 685-718.
- Hallen, B. L., Davis, J. P., & Murray, A. (2020). Entrepreneurial network evolution: Explicating the structural localism and agentic network change distinction. *Academy of Management Annals*, 14(2), 1067–1102.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.
- Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, 44(1), 82-111.
- Heavey, C., Simsek, Z., & Fox, B. C. (2015). Managerial social networks and ambidexterity of SMEs: The moderating role of a proactive commitment to innovation. *Human Resource Management*, 54(1), 201–221.
- Heider, F. (1958). *The Psychology of Interpersonal Relations*. Wiley, New York.
- Jacobsen, D. H., Stea, D., & Soda, G. (2022). Intraorganizational network dynamics: past progress, current challenges, and new frontiers. *Academy of Management Annals*, 16(2), 853-897.
- Jonczyk, C. D., Lee, Y. G., Galunic, C. D., & Bensaou, B. M. (2016). Relational changes during role transitions: The interplay of efficiency and cohesion. *Academy of Management Journal*, 59(3), 956-982.
- Kijkuit, B., & Van Den Ende, J. (2007). The organizational life of an idea: Integrating social network, creativity and decision-making perspectives. *Journal of Management Studies*, 44(6), 863-882.
- Kilduff, M., & Brass, D. J. (2010). Organizational social network research: Core ideas and key debates. *Academy of Management Annals*, 4(1), 317–357.
- Kleinbaum, A. M., Stuart, T. E., & Tushman, M. L. (2013). Discretion within constraint: Homophily and structure in a formal organization. *Organization Science*, 24(5), 1316-1336.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a Feather: Homophily in social networks. *Annual review of sociology*, 27(1), 415–444.
- Mohammed, S., Rico, R., & Alipour, K. K. (2021). Team cognition at a crossroad: Toward conceptual integration and network configurations. *Academy of Management Annals*, 15(2), 455-501.
- Mors, M. L., Rogan, M., & Lynch, S. E. (2018). Boundary spanning and knowledge exploration in a professional services firm. *Journal of Professions and Organization*, 5(3), 184–205.
- Opper, S., & Burt, R. S. (2021). Network Structure and Temporal Myopia. *Academy of Management Journal*, 64(3), 741–771.

- Park, S., Grosser, T. J., Roebuck, A. A., & Mathieu, J. E. (2020). Understanding work teams from a network perspective: A review and future research directions. *Journal of Management*, 46(6), 1002-1028.
- Patel, P. C., & Terjesen, S. (2011). Complementary effects of network range and tie strength in enhancing transnational venture performance. *Strategic Entrepreneurship Journal*, 5(1), 58-80.
- Regt, G., Molleman, E., & Van de Brake, H. J. (2019). The impact of leader-member exchange on follower performance in light of the larger social network. *Human Relations*, 72(8), 1265-1291.
- Soltis, S. M., Brass, D. J., & Lepak, D. P. (2018). Social resource management: Integrating social network theory and human resource management. *Academy of Management Annals*, 12(2), 537-573.
- Soltis, S. M., Methot, J. R., Gittell, J. H., & Harris, T. B. (2023). Leveraging relational analytics in human resource research and practice. *Human Resource Management*, 62(4), 377-389.
- Song, Y., Fang, Y., Wang, M., & Shi, J. (2020). A multiplex view of leadership structure in management teams. *Personnel Psychology*, 73(4), 615-640
- Tasselli, S., Kilduff, M., & Menges, J. I. (2015). The microfoundations of organizational social networks: A review and an agenda for future research. *Journal of Management*, 41(5), 1361-1387.
- Tasselli, S., & Kilduff, M. (2021). Network agency. *Academy of Management Annals*, 15(1), 68-110.
- Tortoriello, M., McEvily, B., & Krackhardt, D. (2014). Being a catalyst of innovation: The role of knowledge diversity and network closure. *Organization Science*, 26(2), 423-438.
- Trahms, C. A., Ndofor, H. A., & Sirmon, D. G. (2013). Organizational Decline and Turnaround: A Review and Agenda for Future Research. *Journal of Management*, 39(5), 1277-1307.
- Vardaman, J. M., Amis, J. M., Dyson, B. P., Wright, P. M., & Van de Graaff Randolph, R. (2012). Interpreting change as controllable: The role of network centrality and self-efficacy. *Human Relations*, 65(7), 835-859.
- Vissa, B. (2012). Agency in action: Entrepreneurs' networking style and initiation of economic exchange. *Organization Science*, 23(2), 492-510.
- Vissa, B., & Chacar, A. S. (2009). Leveraging ties: the contingent value of entrepreneurial teams' external advice networks on Indian software venture performance. *Strategic Management Journal*, 30(11), 1179-1191.
- Woehler, M. L., Cullen-Lester, K. L., Porter, C. M., & Frear, K. A. (2021). Whether, How, and Why Networks Influence Men's and Women's Career Success: Review and Research Agenda. *Journal of Management*, 47(1), 207-236.
- Wong, S. S., & Boh, W. F. (2014). The contingent effects of social network sparseness and centrality on managerial innovativeness. *Journal of Management Studies*, 51(7), 1180-1203.
- Wooldridge, B., Schmid, T., & Floyd, S. W. (2008). The middle management perspective on strategy process: Contributions, synthesis, and future research. *Journal of Management*, 34(6), 1190-122.

Article 1: It's the network: Why outsider CEOs bring (less) strategic change

Abstract

There has been much controversy about the effects of CEO succession origin on strategic change. While some scholars argue that outsider CEOs are more likely to act as agents of strategic renewal, others highlight that outsider CEOs lack firm-specific skills for promoting swift strategic changes. Taking a social network perspective, we develop a contingency framework that reconciling these opposing views. We postulate that the extant contradiction is attributed to the incoming CEO's relational network *prior to* succession and the performance conditions surrounding the firm (i.e., "turnaround" versus "business-as-usual" conditions). Data from 2208 CEO succession events in S&P 1500 companies between 2000 and 2017 show the mediating effect of new CEO's networks with the firm's board of directors and external business elites. Externally recruited CEOs tend to have a weaker internal network and a larger external network, which results in a higher degree of strategic change in a business-as-usual situation but lower strategic change in firms facing turnaround situations. Overall, our study provides a network view of CEO succession origin to highlight when hiring an outsider CEO is more likely to lead to swift and adaptive action.

Keywords: CEO succession, social networks, strategic change, CEO-board relationship, corporate turnaround

1. Introduction

Research on CEO succession has long been studying whether hiring a new CEO from outside the firm is conducive to strategic change (e.g., Berns & Klarner, 2017; Schepker, Kim, Patel, Thatcher, & Campion, 2017; O’Riordan, Kelliher, Flood, & Higgs, 2019; Finkelstein, Hambrick & Cannella, 2009). Many scholars subscribe to the “*organizational disruption view*” of succession to argue that outsider CEOs are more likely to act as agents of strategic renewal and adaptation (e.g., Chen & Hambrick, 2012; Finkelstein et al., 2009; Georgakakis & Ruigrok, 2017; Schepker et al., 2017; Shen & Cannella, 2002; Wiersema, 1992). Incumbent leaders, especially organizational executives with long tenures, tend to grow “stale in the saddle” and do not introduce changes (Miller, 1991; Hambrick, Geletkanycz, & Fredrickson, 1993) even in turnaround situations (Chen & Hambrick, 2012). The appointment of an outsider CEO promotes the transfer of new external knowledge that disrupts pre-existing practices in the organization and helps to alter the firm’s strategic status quo (Shen & Cannella, 2002). Outsider CEOs tend to be “cognitively open-minded, with low commitment to the status quo, able to envision and consider new courses of action, and socially and interpersonally unencumbered, with few attachments to internal executives...” (Finkelstein et al., 2009: 190). These characteristics enable them to initiate more changes than an internally promoted corporate leader can do (Finkelstein et al., 2009; Weng & Lin, 2014; Datta, Rajagopalan, & Zhang, 2003; Zhu, Hu, & Shen, 2020). Yet, another stream of research adopts a “*learning and adaptation perspective*” to postulate that outsider CEOs are often unable to respond to their mandate for strategic renewal due to their lack of firm familiarity with the firm’s internal context (e.g., Keil, Lavie, & Pavićević, 2022; Karaevli & Zajac, 2013; Karaevli, 2007; Zhang & Rajagopalan, 2004, 2010). It is a constraint that does not apply to insider CEOs. Outsider CEOs require time to acquire firm-specific knowledge as well as human and social capital (Keil, Lavie, & Pavićević, 2022; Henderson, Miller, & Hambrick, 2006; Shen, 2003). The longer learning and

adaptation phase hampers the outsider CEOs' response to the internal and external imperatives surrounding the organization (Shen, 2003; Mintzberg, 1973). Some studies further adopt a *contingency perspective* to explain the contradiction and distinguish among the organizational contexts of CEO succession. They show that outsider CEOs are less likely than insiders to generate strategic change in the context of poor pre-succession performance (Karaevli & Zajac, 2013; Karaevli, 2016). This raises a paradox since organizations with worse performance are more likely to require change (Schweizer & Nienhaus, 2017; Liang, Barker, Schepker, 2018; Barker & Duhaime, 1997) but appointing an outsider CEO considered a good leader for change – is likely to disappoint those organizations in need of urgent change. Karaevli (2016) describes this phenomenon as the outsider CEO's "turnaround trap".

The core question of why outsider CEOs manage to (or fail to) generate more strategic change remains unanswered. A nuanced exploration of the mechanisms underlying the different degrees of strategic change achieved by outsider and insider CEOs would offer a more complete theory of CEO succession and provide insights into avoiding the "turnaround trap". First, the relationship between outside succession and strategic change is not direct (O'Riordan et al., 2019) and requires an in-depth study of the mediators involved. In particular, it is not the "insider vs. outsider status" of the new CEO that affects changes (Finkelstein et al., 2009) but rather the characteristics associated with outside successors which affect their strategic behaviors (Finkelstein et al., 2009; Finkelstein & Hambrick, 1996; Hambrick & Mason, 1984). Second, the effects on strategic change of an outside successor and their associated characteristics are conditional (Karaevli & Zajac, 2013), which requires consideration of the moderating effect of the organizational context.

We aim to address the question and resolve the controversy over the effect of an outside CEO on strategic change, adopting a social network perspective to explore the mechanisms underlying CEO succession and develop a contingency framework to distinguish among the

organizational contexts of CEO succession. In particular, we explore the mediating effects of the new CEO's internal and external social networks on the relationship between new CEO outsidership and post-succession strategic change in two distinct succession contexts (i.e., business-as-usual vs. turnaround situations). We argue that the opposite effects of new CEO outsidership on post-succession strategic change in turnaround vs. business-as-usual situations can be attributed to the new CEO's social network with 1) the board of directors and 2) external business elites *prior to* their appointment. A social network perspective posits that "individuals are embedded in thick webs of social relations and interactions" (Borgatti, Mehra, Brass, & Labianca, 2009: 892); individuals' social relations and the networks formed by these relations affect the resources available to them (Granovetter, 1973; Borgatti et al., 2009) and have impact on their strategic behaviors (Granovetter, 1985; Carpenter, Li, & Jiang, 2012). This social network aspect is notable because CEOs are embedded in social networks involving members of the same organizations and individuals in the extensive business world (Westphal & Zhu, 2019; Flickinger, Wrage, Tuschke, & Bresser, 2016; Westphal, Boivie, Ming, & Daniel, 2006). CEOs' social networks serve as sources of unique information and knowledge (Heavey, Simsek, & Fox, 2015), which allow interpretation of strategic situations and analysis of strategic alternatives (Hambrick, 2007; Haynes & Hillman, 2010). Inside the organization, the best source of advice on the firm's strategic issues is the board of directors (Ma, Kor, & Seidl, 2020; Westphal, 1999); established relations between the new CEO and board members facilitate the exchange of inside information and the sharing of advice based on trust and smooth communication (Carpenter et al., 2012; Westphal, 1999). Outside the organization, the new CEO's social networks with business elites in other firms who may be active in other industries and regions provide access to diverse and novel information on markets, technologies, and alternative strategies (Ma et al., 2020; Arendt, Priem, & Ndofor, 2005). We suggest that these relations affect the CEO's strategic choices and implementation of change.

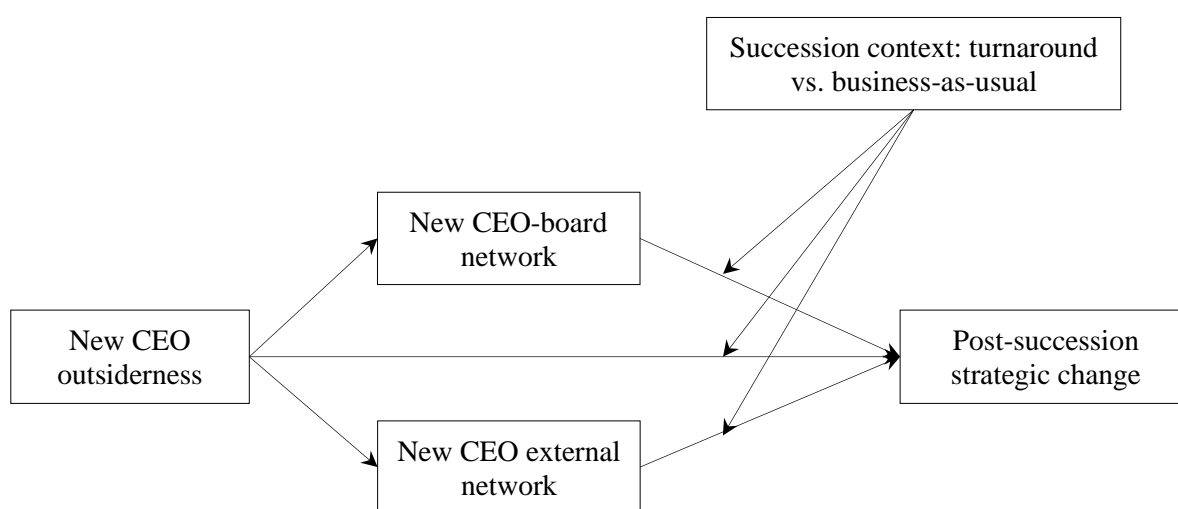
In addition, the organizational context of the succession impacts how the new CEO can leverage their internal and external social networks to realize strategic change. New CEOs appointed to firms with declining performance face various challenges, such as scarcity of resources (Ghazzawi, 2018), which can require additional effort to turn the situation around (Trahms, Ndofor, & Sirmon, 2013). Social networks can be leveraged to resolve some of the issues arising when implementing strategic change.

We suggest that an examination of new CEOs' internal and external social networks and their effects in distinct succession contexts would provide a better understanding of the association between new CEO outsidership and post-succession strategic change. Figure 1 depicts our proposed theoretical framework. We examine this framework using data from CEO succession events in S&P 1500 companies between 2000 and 2017. The results support our predictions by showing a conditional mediating effect of new CEO social networks between new CEO outsidership and strategic change.

We draw on and contribute to work on CEO succession, social networks, and corporate turnaround. First, we contribute to research on CEO succession by adopting a social network perspective and underscoring the potential of studying the CEO's social networks. We show that the new CEO's networks with the firm's board members and external business elites explain the paradox between the effect of outside succession on strategic change in different succession contexts (i.e., the "turnaround trap"). In this regard, our work responds to Berns and Klarner's (2017) call for a better understanding of the CEO-board relationship in the succession process and highlights the critical role of social networks for the successful implementation of strategic change. Second, we contribute to work on social networks in organizational contexts by revealing the complex effects of social networks in different business contingencies. Although social networks and their patterns are known to have both benefits and costs (Opper & Burt, 2021; Jonczyk, Lee, Galunic, & Bensaou, 2016), our work indicates that their effects

on the organization depend on the firm's performance contexts. Third, we contribute to work on corporate turnaround by arguing and showing empirically that outsider CEOs induce less strategic change in turnaround situations. It responds to Trahms and colleagues' (2013) call for more consideration of how CEO successors' attributes and experience impact organizations in turnaround conditions. To this end, our work outlines practical implications and recommendations for companies regarding the appointment and integration of new CEOs.

Figure 1: Theoretical framework



2. Theory and hypotheses

2.1. Social networks and corporate strategy

Social network theory has been adopted by management scholars to examine the formal and informal relations among individuals within and across organizations and their effects on organizational outcomes such as decision-making (e.g., Kijkuit & van den Ende, 2007), knowledge exploration capability (e.g., Mors, Rogan, & Lynch, 2018), innovation (e.g., Ahlin, Drnovšek, & Hisrich, 2014), organizational ambidexterity (e.g., Heavey et al., 2015), and organizational performance (e.g., Song, Fang, Wang, & Shi, 2020). Exploring individuals' social networks provides a complementary perspective for studying organizational phenomena including CEO-board relations and CEO succession.

Social ties between individuals facilitate information and knowledge exchange and encourage the sharing of advice and support (Carpenter et al., 2012; Westphal, 1999). Well-established social relations among individuals increase the likelihood of information exchange based on their better knowledge and understanding of one another and their expertise, and ease of communication (Borgatti & Cross, 2003). Strong ties characterized by frequent interaction and long duration relationships (Carpenter et al., 2012; Granovetter, 1973) foster trust and reciprocity between ties (Coleman, 1988), and facilitate exchanges of high-quality information and complex knowledge (Heavey et al., 2015; Hansen, 1999; Granovetter, 1973). Granovetter (1983: 209) argued that “strong ties have greater motivation to be of assistance and are typically more easily available” since the sharing of complex knowledge requires willingness by the knowledge provider to expend effort on explaining the details (Hansen, 1999). Frequent interactions and exchanges allow the individuals involved to build a similar mindset (Houghton, Smith, & Hood, 2009; McDonald & Westphal, 2003), enabling “efficient knowledge integration and interpretation” (Houghton et al., 2009: 1256). Indeed, rich empirical evidence shows the positive impact of strong ties on information and knowledge sharing (e.g., Jack, 2005; Reagans & McEvily, 2003; Hansen, 1999).

Work on network structure (i.e., the pattern of network relations) distinguishes between two types of networks: 1) closed networks in which individuals are densely connected, and 2) sparse networks which include less densely connected individuals (Burt, 1992; Opper & Burt, 2021). In closed networks, individuals share information and knowledge through their dense and direct network ties, and over time, all members have access to a similar resources base because of intense information exchange. Closed networks benefit from the “refinement and improvement of current knowledge” (Opper & Burt, 2021: 764) and tend to focus more on exploiting existing network resources rather than exploring new resources from outside the network (Burt & Soda, 2017). The shared knowledge and similar mindsets among the members

of a closed network facilitate more efficient decision making and agreements (Opper & Burt, 2021; Lazer & Friedman, 2007). Members of a closed network are cautious in terms of protecting their reputation while also feeling protected from the bad behaviors of others which enhances their willingness to cooperate with network members. Studies have shown that a closed network is associated also with information redundancy since its members have limited access to novel information and alternative strategies (Opper & Burt, 2021). Mutual knowledge facilitates shared strategic beliefs and behaviors (McDonald & Westphal, 2003) and over time the members of a closed network tend to be intolerant of different opinions (Carpenter et al., 2012; Burt, 1987; Coleman, 1990) due to similar mindsets and group pressure. Feeling satisfied with the current situation, its members are less willing to develop new social connections and explore new business opportunities outside the network (Burt, Opper, & Holm, 2022; Opper & Burt, 2021).

In open networks, on the other hand, each network member has access to diverse information and knowledge through access to contacts not mutually connected. Open networks are more likely to generate new ideas and tend to perform well in exploratory, innovative, and creative activities (Perry-Smith, 2006; Perry-Smith & Manucci, 2017). Network members are exposed to different mindsets which could encourage alternative interpretations of the same information and suggest different strategic options for the same situation. The central person who bridges unconnected others benefits from access to novel resources and has the power to control the flow of resources to unconnected members (Burt, 1992). The weakness of open as opposed to closed networks is the lower level of trust, and lack of a shared understanding which can limit the integration of complex knowledge (Wong & Boh, 2014). Since not all the members of an open network are mutually connected, the central person needs to put effort into maintaining relations with all other members to manage the network.

Upper echelons theory suggests that the CEO has the most important influence on the

organization based on her or his strategic choices (Hambrick & Mason 1984). Since the new CEO is not an isolated individual, their social network relations with others inside and outside of the firm have an impact on the CEO's strategic choices. For example, empirical work on CEO social networks shows that CEOs' internal and external connections positively impact the organization's strategic adaptive capability (e.g., Ma, Yao, & Xi, 2009), strategic complexity (e.g., Houghton et al., 2009), strategic flexibility (e.g., Fernández-Pérez, García-Morales, & Bustinza-Sánchez, 2012), and strategy ambidexterity (Heavey et al., 2015). CEOs rely on their social network as unique sources of information and knowledge (McDonald & Westphal, 2003; Heavey et al., 2015) on which to base their strategic choices. In addition, CEOs' social networks influence the way they process information and understand the strategic situation (Oppen & Burt, 2021; McDonald & Westphal, 2003). Based on their distinct internal and external social networks, new CEOs tend to make different choices and endorse different strategies from those implemented by their predecessors which results in post-succession strategic change.

2.2. New CEO internal networks

The new CEO's internal networks consist of their social relations that are internal to the firm (Cao, Maruping, & Takeuchi, 2006). The firm's board is an important internal network which offers the best source of advice on the firm's strategic issues for new CEOs (Ma, Kor & Seidl, 2020; Westphal, 1999). New CEOs – whether outsiders or insiders – have to devote time to learning and adapting. Outsider CEOs need to acquire firm- and industry-specific knowledge; insider successors need to adapt to the new position and its different tasks and responsibilities (Shen, 2003). The advice provided by the firm's board is crucial in both cases (Shen, 2003; Berns & Klarner, 2017). Executive directors are the source of information on internal day-to-day operations and advice on alternative strategies based on their experience in managing the firm; independent directors are the source of diverse knowledge and expertise,

and access to external networks (Ma et al., 2020).

Social ties between the firm's new CEO and its various board members foster trust and enable smooth communication which facilitate information exchange, encourage search for and sharing of advice, and promote cooperative problem-solving (Carpenter et al., 2012; Westphal, 1999). In particular, Westphal (1999) shows that social ties between board members and CEO promote interaction and encourage advice sharing on strategic issues, and CEOs are more likely to seek advice from board members with whom they have stronger ties (Ma et al., 2020; Westphal, 1999) especially in the case of poor performing firms (Heyden, van Doorn, Reimer, Van den Bosch, & Volberda, 2013). Therefore, board members' human and social capital contributes to the firm's resource base, and a CEO with close relations with board members will be able to exploit and leverage the firm's internal resources to develop new strategies (Burt & Soda, 2021). Given that most firm board members are already connected by their co-working experience in the board room, strong and well-established ties between the new CEO and a few board members will be conducive to the rapid forging of links with the entire board (Ahuja, Soda & Zaheer, 2012). In more connected networks, board members and CEO tend to have shared knowledge and similar mindsets (Opper & Burt, 2021; Lazer & Friedman, 2007) which allows better understanding and acceptance of the new CEO's strategic renewal proposals. Board-level strategic consensus will facilitate faster decision making and effective implementation of the new strategy (Goodstein, Gautam, & Boeker, 1994).

The above aspects are especially important for firms in a turnaround situation. Turnaround refers to a threatening business situation for a firm experiencing decline which requires swift operational and strategic actions to promote recovery (Barker & Duhaime, 1997; Schweizer & Nienhaus, 2017). Business decline signaled by worsening financial performance is associated with resources scarcity and uncertain subsequent development (O'Kane & Cunningham, 2014; Trahms et al., 2013; Barker & Duhaime, 1997). New CEOs entering a firm

in a turnaround situation will have different concerns and face different challenges compared to those hired by firms in business-as-usual (i.e., non-turnaround) situations (Trahms et al., 2013). First, resources scarcity resulting from financial decline requires the firm to optimize use of existing resources and capabilities to achieve strategic renewal and recovery (Ghazzawi, 2018). A new CEO with – especially strong – social ties to the firm’s board members will have better access to internal information on the firm’s competences and how they should be reallocated (Ma et al., 2020; Boyd, Haynes, & Zona, 2011; Westphal, 1999). Second, abrupt decline is an indication of firm problems such as misalignment between firm strategy and the external environment, or ineffective management of resources (Trahms et al., 2013). To resolve such problems requires the CEO to have an accurate perception and interpretation of the causes of the decline (Barker & Duhaime, 1997), and the capability to process complex information from various sources (Ghazzawi, 2018). A new CEO with strong social ties to the firm’s board members will have better access to internal information on the firm’s problems and better access to insightful advice on a turnaround strategy (Ma et al., 2020; Boyd et al., 2011). Board members with close relations to the new CEO will be more collaborative (Westphal & Fredrickson, 2001; Zhang & Rajagopalan, 2010) and more likely to support the introduction and implementation of a new strategy for the turnaround. Third, diminished managerial discretion resulting from severe decline will require the CEO to have more frequent communication with stakeholders (Trahms et al., 2013). New CEOs hired in turnaround situations need to pay attention to a range of operational and managerial issues under time pressure (O’Kane & Cunningham, 2014). Closer relations with board members help the new CEO facilitate relationships with other internal and external stakeholders (Berns & Klarner, 2017; Shen, 2003) which frees up more time to focus on management and strategy.

However, a strong connection to the firm’s board can also have drawbacks for new CEOs trying to implement renewal strategies. Repeated exchanges of resources between CEO

and board links can lead to information redundancy and limited access to strategic alternatives (Opper & Burt, 2021). The similar mindsets and the shared norms between CEO and board can hinder the CEO from suggesting alternatives and stating their opinions (McDonald & Westphal, 2003). Resources redundancy and social pressure on the board of directors can result in organizational inertia and create obstacles to strategic change. However, experience of severe decline is likely to make the firm more willing to overcome inertia and collaborate on implementing changes in a turnaround situation (O’Kane & Cunningham, 2014; Barker & Duhaime, 1997). In a business-as-usual situation where the firm sees no risk of decline, introducing a new CEO with less well-established social ties to board members can break down network inertia (Ahuja, Soda, & Zaheer, 2012; Barker & Duhaime, 1997) and enable the CEO to initiate strategic change. Therefore, we assume that the effect of a new CEO internal network on post-succession strategic change will depend on whether the firm is in a turnaround or a business-as-usual condition.

New CEOs are embedded in their organizations’ internal networks to different degrees (Cao et al., 2006). Social ties tend to be the result of co-working experience within or outside of the organization which gives individuals the opportunity to interact, and the longer the duration of the collaboration the more frequent will be the interaction (Carpenter et al., 2012; Westphal, 1999). The longer experience of interaction with board members enjoyed by insider CEOs is likely to result in deeper internal embeddedness than enjoyed by outsider CEOs (Cao et al., 2006). Similarly, insider CEOs with longer tenure in the organization’s top management team will be more likely to have strong ties with board members (Carpenter et al., 2012; Cao et al., 2006). Outsider CEOs who were members of the recruiting firm’s board or worked with the firm’s board members of some other organizations have also had opportunities to interact and build social ties with these board members. Outsider CEOs hired from within the same industry are more likely to have co-working experience with board members since most firms

prefer directors with focal industry expertise. Therefore, a new CEO who has less firm and industry experience and thus is more of an outsider is less likely to have strong social ties with the firm's board members.

Hypothesis (H1). *A new CEO-board network mediates the conditional effect of new CEO outsidership on post-succession strategic change. That is, an outsider CEO will have weaker network ties with board members, and thus will implement higher (lower) levels of strategic change after joining a firm in a business-as-usual (turnaround) situation.*

2.3. New CEO external networks

The new CEO's external networks are a crucial source of information and knowledge (Gulati, Nohria, & Zaheer, 2000). Social ties with external business elites, who are possibly active in different industries and different regions, provide the CEO with access to diverse and novel information on markets, technologies, and alternative strategies (Ma et al., 2020; Arendt, Priem, & Ndofor, 2005). Receiving and processing "a mix of information on alternative viewpoints, ideas, and experiences" (Oppen & Burt, 2021: 743) the new CEO faces "different cognitive schemas" (Heyden et al., 2013: 1333) and develops "complex mental concepts" (Oppen & Burt, 2021: 743). Interpreting information in diverse ways and generating various solutions to problems allows the new CEO to develop alternative strategies. Studies show that CEOs rely on advice from external contacts when making strategic decisions (Ma et al., 2020). In dynamic business environments, firms need continuously to assess the alignment between their strategies and the market (Heavey et al., 2015). Provision of timely information on the external environment from external advisers can demonstrate the need for an adaptive strategy (Ma et al., 2020). The new CEO's external networks contribute to the firm's social capital and extend the resources available for a strategic reorientation (Cao et al., 2006). The new CEO becomes the network broker between their external business contacts and the members of the new firm. The access to these unique bundles of resources enhances the CEO's power and

competence (Burt & Soda, 2021) and enables implementation of change.

The larger resources base enabled by the new CEO's external networks provides the firm with diverse opportunities to make positive strategic changes in a stable business situation. However, for firms in turnaround conditions this greater access to external resources has a limited effect. The corporate turnaround literature suggests that firms take actions to improve organizational efficiency and market position to counter declining performance (Trahms et al., 2013) employing strategies in line with the cause of their decline (Barker & Duhaime, 1997; Pearce & Robbins, 1993). Thus, to achieve a turnaround, it is essential to understand the firm's problems which requires the new CEO to privilege access inside information from firm internal networks over external resources. To manage turnaround requires the CEO to focus on "firefighting" and dealing with other operational and managerial issues under time pressure. Since managing and maintaining external networks takes effort and time in turnaround conditions, for efficiency reasons the CEO will spend less time on interacting with external business elites (Lin, 2001). The attention-based view posits that CEOs who are time constrained will tend to allocate their attention to the most urgent matters (Seshadri & Shapira, 2001). In a turnaround situation, this means spending more time on problem-solving rather than strategizing (Finkelstein et al., 2009; Mintzberg, 1973). Thus, we expect that the effect of new CEO external network on post-succession strategic change will depend on whether the firm is in an uncertain turnaround situation which calls for urgent problem-solving or is in a business-as-usual condition and can exploit new external opportunities for strategic change.

The size of the new CEO's external network will depend on the number of the CEO's external contacts who are active in business. CEOs engaged in social networks based on co-working experience which provides good opportunities for interaction, and the more and larger-sized organizations in which the CEO has had work experience the more likely the CEO will have well developed external networks allows (Cao et al., 2006). Insider CEOs who have been

working in the organization for years are likely to have small networks with external business elites compared to outsider CEOs. Outsider CEOs hired from a different industry are more likely to have unique external contacts (Cao et al., 2006). Insider CEOs with board or other working experience before joining the firm may have benefited from opportunities to join external networks. We would suggest that new CEOs with less firm and industry experience are more likely to have larger external networks.

Hypothesis (H2). *The new CEO external network mediates the conditional effect of new CEO outsidership on post-succession strategic change; outsider CEOs tend to have larger external networks with business elites, and thus implement higher (lower) levels of strategic change after joining a firm in a business-as-usual (turnaround) situation.*

3. Methods

3.1. Sample

Our sample of new CEOs is drawn from the S&P 1500 companies for the years 2000 to 2017. We start our observation in 2000 because the *BoardEx* database, one of the main sources of data for our study, provides complete data on the sample companies' board composition from then on. Our sample ends in 2017 to exclude the impact of the Covid-19 pandemic which caused the failure of a large number of companies in a wide range of industries globally from 2019. We exclude financial firms due to their sector-specific and high levels of failure during the 2007-08 financial crisis (Chen & Hambrick, 2012). To retain meaningful industry-level adjustment and to control for the relevant measurements, we also exclude diversified businesses where more than 30% of total revenues are related to non-core business activities based on SIC codes (Chen & Hambrick, 2012; Zhang & Rajagopalan, 2003, 2010). By checking CEO names across years, we identify 2208 new CEOs, excluding interim CEOs and co-CEOs. Interim CEOs are excluded on the basis that they are in a temporary position (usually less than one year) while a suitable successor is being identified; this makes them less

likely to plan long-term strategy; co-CEOs are excluded since their shared responsibility makes it difficult to identify the impact of changing one or other CEO on the firm's strategy. Our data is from *Compustat* and *BoardEx*.

3.2. Variables and measures

Dependent variables: Post-succession strategic change

Consistent with previous studies of strategic change (e.g., Finkelstein & Hambrick, 1990; Oehmichen, Schrapp, & Wolff, 2017), we employ a composite measure which includes four key strategic indicators: 1) plant and equipment (P&E) newness (net P&E/gross P&E), 2) nonproduction overheads (selling, general, and administrative expenses/sales), 3) inventory level (inventories/sales), and 4) financial leverage (total debt/equity). A change in these indicators captures the firm's resources reallocation across various strategic dimensions (Zhu et al., 2020; Oehmichen et al., 2017; Karaevli & Zajac, 2013; Zhang & Rajagopalan, 2010) which are the result of top manager control, influential for firm performance, and applicable to firms in different industries (Finkelstein & Hambrick, 1990). Strategic change in each dimension is measured by the absolute difference in the relevant indicator over two consecutive years and adjusted by subtracting the industry median in the same year to control for the effects of industry and time differences on our observations. The adjusted indicators are standardized within the sample (z-score) to render all four indicators comparable, and we measure the degree of strategic change as the average of the standardized values of the four indicators for each company in each year (Finkelstein & Hambrick, 1990; Oehmichen et al., 2017). To avoid causality problems, we observe strategic change in the year following a CEO succession event (i.e., one year lagged) since a change in the financial figures in the same year as the succession could also be a cause of CEO replacement.

Independent variable: New CEO outsidership

Following Karaevli (2007), we measure new CEO outsidership as a continuous variable

that takes account of the new CEO's pre-succession experience in both the focal firm and the focal industry. Since it is not insider or outsider status which leads to change but rather the CEO's characteristics associated to origin, this variable shall better be measured in continuous rather than binary terms (Finkelstein et al., 2009; Finkelstein & Hambrick, 1996; Karaevli, 2007; Karaevli & Zajac, 2013). The variable takes the average of the inversed standardized (z-score) firm tenure and industry tenure *prior to* succession; a higher degree of outsidership indicates less firm and industry experience. Firm tenure is also counted in the industry tenure because the CEO has gained knowledge about both the firm and the industry when working in the focal firm (Karaevli, 2007).

In the robustness test, we adopt two other measures used widely in the CEO succession literature. These are dichotomous variables for new CEO origin and new CEO outsidership measured on an eight-point scale (Finkelstein et al., 2009) to enable comparison with existing results. The results show whether our findings confirm previous results.

Moderator: Succession context – turnaround vs. business-as-usual situation

We follow Chen and Hambrick (2012) and identify a *firm turnaround situation* as experience of an abrupt operating loss (i.e., negative operating income) following at least two years of satisfactory performance. When a company with historically good performance experiences an unexpected operating loss, the board of directors comes under pressure to act for turnaround regardless of the industry environment (Chen & Hambrick, 2012). Following Chen and Hambrick (2012), we consider that a company shows satisfactory performance if operating return on equity (ROE) is higher than cost of equity (COE). We observe a company's financial performance over the three years *prior to* the CEO succession event; it is coded 1 if the company experienced an abrupt operating loss during the period and 0 otherwise.

Mediator: New CEO-board network and new CEO external network

We look at two aspects of the strength of the *new CEO-board network*. First, the overall strength of relations between the CEO and the firm's board members is measured by *tie strength* which is based on the duration of established relationship (Carpenter et al., 2012; Granovetter, 1973). We follow the social network literature (e.g., Gong et al., 2020; Perry-Smith, 2006) to measure the CEO's tie strength with each board member on a five-point scale (1 = less than 1 year, 2 = 1-2 years, 3 = 2-5 years, 4 = 5-10 years, and 5 = more than 10 years) and then take the average number. Second, the extent of the new CEO's relations with the firm's board members is measured by *multiplexity*, which is based on the average number of multiple ties between the CEO and each board member (Carpenter et al., 2012). Numerous social ties linking the same pair of individuals suggests a stronger bond due to "the greater scope of interactions with such (multiplex) contacts" (Jonczyk et al., 2016: 960).

New CEO external network is measured as the size of the new CEO's social network with business elites outside the focal firm based on the logarithm of total number of social ties (Collins & Clark, 2003) in the five years *prior to* succession. Simultaneous co-working relationships (as top manager and/or board member) in the same organization constitute a social tie between two individuals; simultaneous co-working relationships in multiple organizations constitute multiplex ties between two individuals.

Control variables

The CEO succession literature identifies other factors relevant for strategic change. We include CEO, board, firm, and industry level controls to check the effect of new CEO outsidership and new CEO board network. At CEO level, we control new *CEO age* and *CEO duality* which is coded 1 if the new CEO is board chair in the focal year and is coded 0 otherwise. A new CEO's *network size* is measured as the logarithm of the total number of network ties with other business elites during their professional life *prior to* the succession. At

board level, we control *board size*, *change of board members* measured as the average percentage of entering and existing board members in the observed year, and *percentage of independent directors* on the board. At firm level, we measure *firm size* as the logarithm of sales in the observed year and *firm prior-year performance* based on previous year's return on assets. We also control *industry munificence* and *industry turbulence*. We first regress the coefficient and standard error of a time index on the industry's total annual sales over the past five years, where the time index of one year before the focal year is coded 1 and that of five years before the reference year is coded 5 (Karaevli, 2007; Karaevli & Zajac, 2013). *Industry munificence* is measured as the quotient of the regression coefficient divided by total sales which indicates industry growth across time; *industry turbulence* is measure as the quotient of the regression standard error divided by total sales which indicates instability in the industry across time (Karaevli, 2007; Karaevli & Zajac, 2013). Since our sample includes a wide range of industry sectors and our observations cover a relatively long time period, we also include *industry dummies* and *year dummies* as control variables.

3.3. Analytical methods and endogeneity tests

We acknowledge that CEO succession is often not random; a new CEO is more likely to arrive when the company needs change. This could lead to sample selection bias and sample-induced endogeneity. We follow previous CEO succession research (e.g., Karaevli, 2007) and employ a Heckman two-stage model to assess and correct for potential sample selection bias. In the first stage, we apply a probit model to predict the likelihood of a CEO succession event for the full sample including the observations with no CEO succession event and observations after a CEO succession event (2762 S&P firms and 38999 firm-year observations), using instrumental variables. Following Karaevli (2007), we adopt two instrumental variables: 1) number of years since last CEO succession event, and 2) number of prior CEO succession events. Both variables affect the likelihood of a CEO change but do not show significant effect

on post-succession strategic change. We also include in the model firm level (firm size and firm prior-year performance) and industry level (industry munificence and industry turbulence) control variables as well as industry dummies and year dummies. Since a CEO succession event can occur in any part of the year, to predict a succession and avoid causality problems we observe one year ahead and lag our model predictors one year (Karaevli, 2007; Zajac & Westphal, 1996). The first stage results of the probit analysis are reported in the Appendix. In the second stage, we calculate the inverse Mills ratio (IMR) and include it as a *CEO succession control* in our second-stage ordinary least squares (OLS) models which test the effects of new CEO outsidership and new CEO networks on post-succession strategic change.

Since the appointment of an outsider CEO may not be random and may be more likely when the firm needs a strategic change, this could cause endogeneity not induced by sample selection. To check for it, we ran a Wu–Hausman test using the ‘ivreg’ package in R (Fox, Kleiber, & Zeileis, 2020). Following Karaevli & Zajac (2013), we identified two instrumental variables: 1) outside succession rate in the same industry in the five years *prior to* the focal succession event, and 2) heir apparent. Both variables are associated with new CEO outsidership but show no effect on post-succession strategic change. The test for weak instruments (F-statistics = 82.31, $p < 0.001$) and the Sargan test (Chi-square = 0.10, $p = 0.625$) confirm the validity of these instrumental variables. The results of the Wu-Hausman test (F-statistics=0.24, $p = 0.63$) indicate that the OLS regression results are not affected by endogeneity. The results of variance inflation factor (Mansfield & Helms, 1982) shows that our models do not have multicollinearity problem.

4. Results

We test our hypotheses employing OLS regression analysis with post-successions strategic change as the dependent variable. Table 1 shows the descriptive statistics and

correlations. Table 2 reports the results of the direct effects of the interaction between the firm's succession context (i.e., firm turnaround situation) and new CEO outsidership, new CEO-board network, and new CEO external network on post-succession strategic change. Table 3 reports the relationship between new CEO outsidership and new CEO networks.

Model 1 in Table 2 reports the results including only the control variables; Model 2 adds the two-way interaction effect of new CEO outsidership with firm turnaround situation. The results show a significant and negative interaction effect (new CEO outsidership \times firm turnaround situation) on post-succession strategic change ($b = -0.24$, $p = 0.05$), indicating that new CEOs with a higher degree of outsidership will implement a higher level of strategic change when joining a firm in a business-as-usual situation – but a lower level of strategic change in firm in a turnaround situation. Figure 2 depicts this relationship: the solid-line slope (for business-as-usual situations) is slightly positive, and the dotted-line slope (for turnaround situations) is strongly negative.

Figure 2: Relationship between new CEO outsidership and post-succession strategic change categorized by succession context

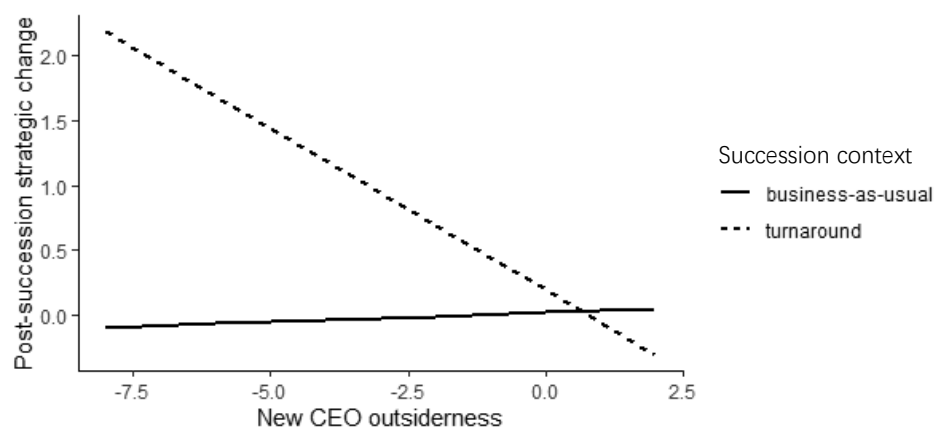


Table 1: Descriptive statistics and correlations

Variables	mean	s.d.	1.	2.	3.	4.	5.	6.	7.
1. Post-succession strategic change	0.02	0.55							
2. New CEO outsidersness	-0.01	0.99	0.08						
3. Firm turnaround situation	0.03	0.16	0.07	0.06					
4. New CEO-board network: tie strength	1.80	1.29	-0.06	-0.63	-0.04				
5. New CEO-board network: multiplexity	0.64	0.43	-0.04	-0.42	-0.02	0.82			
6. New CEO external network	4.02	1.47	-0.04	0.24	-0.02	-0.26	-0.18		
7. CEO age	51.82	6.63	-0.02	-0.16	-0.03	0.11	0.09	0.01	
8. CEO duality	0.42	0.49	-0.03	-0.05	0.00	0.08	0.05	0.14	0.11
9. CEO network size	6.30	1.31	-0.02	0.17	-0.02	-0.18	-0.13	0.57	-0.10
10. Board size	10.62	2.72	-0.10	-0.08	-0.08	0.08	0.01	0.31	0.05
11. Change of board member	0.10	0.08	0.05	0.14	0.02	-0.27	-0.24	0.10	0.03
12. % Independent director	0.84	0.08	-0.03	0.06	-0.04	-0.14	-0.11	0.17	0.08
13. Firm size	7.40	1.67	-0.19	-0.22	-0.10	0.21	0.15	0.38	0.15
14. Firm prior-year performance	0.07	0.15	-0.24	-0.14	-0.13	0.14	0.08	0.01	0.03
15. Industry munificence	-0.04	0.08	-0.02	-0.04	0.02	0.00	-0.01	0.00	0.03
16. Industry turbulence	0.03	0.02	0.04	0.00	0.08	0.03	0.01	-0.10	-0.09
	8.	9.	10.	11.	12.	13.	14.	15.	
9. CEO network size	0.01								
10. Board size	0.19	0.04							
11. Change of board member	0.01	0.01	0.16						
12. % Independent director	-0.04	0.14	0.19	0.16					
13. Firm size	0.23	0.18	0.58	-0.02	0.17				
14. Firm prior-year performance	0.07	-0.01	0.15	-0.10	0.02	0.26			
15. Industry munificence	-0.06	0.10	0.03	0.03	0.09	0.01	0.05		
16. Industry turbulence	-0.04	0.03	0.06	-0.01	-0.05	-0.06	-0.07	0.15	

Note: N=2208. Correlation coefficients are at $p < 0.05$ if greater than 0.04 or less than -0.04.

Models 3-4 include the effects of the two new CEO-board network measures (tie strength and multiplexity) and their respective two-way interaction effects with firm's turnaround situation. This tests the conditional effect of new CEO-board network on post-succession strategic change. The interaction between firm turnaround situation and each of the two measures is significant and positive (tie strength: $b = 0.24, p < 0.001$; multiplexity: $b = 0.58, p < 0.001$), which indicates that a new CEO with stronger ties or multiplex ties with board members will implement a higher level of strategic change in a firm in a turnaround condition but a lower level of strategic change in a business-as-usual situation.

Figure 3 (a-b) depicts this relationship: in both plots, the negative solid-line slope is business-as-usual, and the positive dotted-line slope is turnaround. These significant direct effects suggest we can further test H1. Model 5 includes the effect of new CEO external network and its interaction with a turnaround situation to test the conditional effect of new CEO external network on post-succession strategic change. We observe a significant and negative conditional effect of new CEO external network ($b = -0.19, p < 0.001$). The results show that a new CEO with a larger network with external business elites tends to implement a higher level of strategic change when joining a firm in a business-as-usual situation but a lower level of strategic change in a firm in a turnaround situation. This is depicted in Figure 4, where the solid-line slope (for business-as-usual) is slightly positive and dotted-line slope (for turnaround) is negative for the association between new CEO external network and post-succession strategic change. This significant direct effect suggests the possibility to test H2 further.

Table 2: Conditional effects of new CEO outsidership, new CEO-board network, and new CEO external network on post-succession strategic change

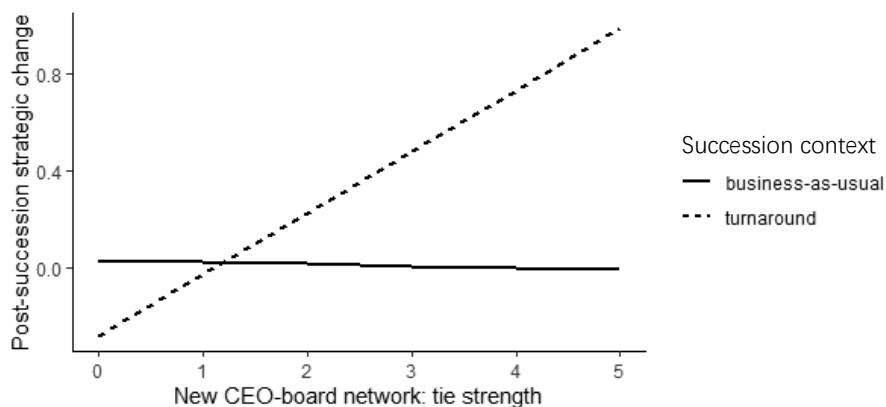
	<i>Post-succession strategic change</i>							
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>	<i>Model 8</i>
Intercept	0.64*	0.63*	0.61*	0.60*	0.64*	0.57*	0.58*	0.65*
	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)
CEO age	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
CEO duality	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
CEO network size	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Board size	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Change of board member	0.24	0.23	0.30	0.32	0.25	0.31	0.31	0.25
	(0.16)	(0.16)	(0.17)	(0.17)	(0.16)	(0.17)	(0.17)	(0.16)
% Independent director	-0.09	-0.10	-0.07	-0.06	-0.13	-0.07	-0.08	-0.12
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)
Firm size	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***	-0.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Firm prior-year performance	-0.74***	-0.73***	-0.73***	-0.73***	-0.71***	-0.73***	-0.72***	-0.72***
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Industry munificence	0.04	0.03	0.02	0.04	0.06	0.02	0.04	0.05
	(0.18)	(0.18)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Industry turbulence	0.57	0.54	0.51	0.51	0.66	0.49	0.49	0.64
	(0.68)	(0.68)	(0.67)	(0.67)	(0.67)	(0.67)	(0.67)	(0.67)
IMR	0.05	0.05	0.05	0.05	0.06	0.05	0.04	0.06
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
<i>Direct effect</i>								
New CEO outsidership		0.01				0.02	0.02	0.00
		(0.01)				(0.02)	(0.02)	(0.01)
CEO-board network: tie strength			0.01			0.02		
			(0.01)			(0.01)		
CEO-board network: multiplexity				0.04			0.05	
				(0.03)			(0.03)	
CEO external network size					0.02			0.02
					(0.01)			(0.01)
<i>Moderating effect</i>								
Firm turnaround situation		0.15	-0.31**	-0.29*	0.80***	-0.37*	-0.27	0.85***
		(0.09)	(0.12)	(0.12)	(0.20)	(0.16)	(0.15)	(0.20)
New CEO outsidership × firm turnaround situation		-0.24*				0.09	-0.03	-0.20
		(0.12)				(0.15)	(0.13)	(0.12)
<i>Mediated moderating effect</i>								
CEO-board network: tie strength × firm turnaround situation			0.24***			0.26***		
			(0.06)			(0.07)		

CEO-board network: multiplexity × firm turnaround situation				0.58*** (0.16)			0.56** (0.17)	
CEO external network size × firm turnaround situation					-0.19*** (0.05)			-0.18*** (0.05)
Observations	2208	2208	2208	2208	2208	2208	2208	2208
R ²	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
F-statistics	1.55***	1.56***	1.61***	1.61***	1.61***	1.61***	1.60***	1.61***

*Note: The standard deviations are reported in the parentheses * p<0.05; ** p<0.01; *** p<0.001. Year dummies and industry dummies are included but not reported.*

Figure 3: Relationship between new CEO-board network and post-succession strategic change categorized by succession context

(a) CEO-board network: tie strength



(b) CEO-board network: multiplexity

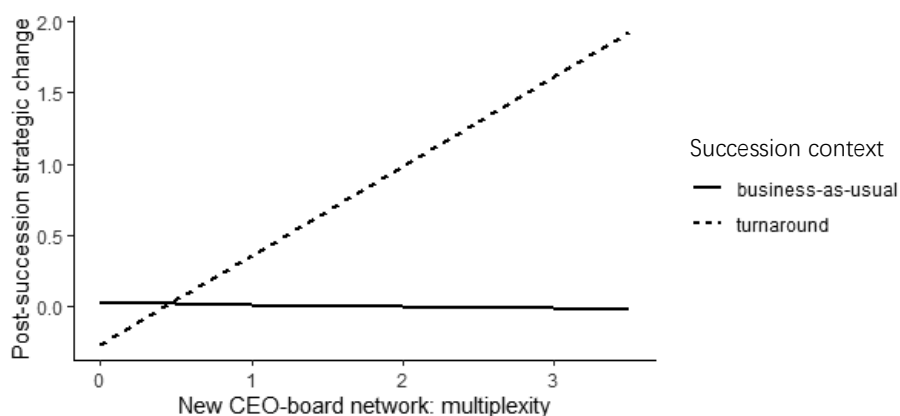
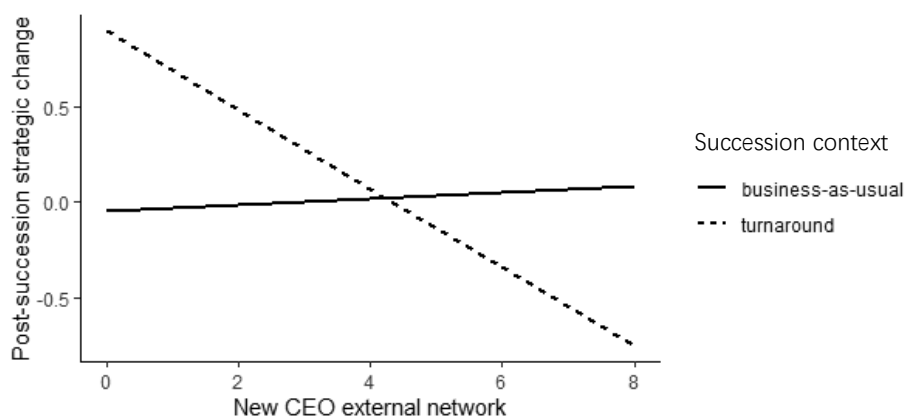


Figure 4: Relationship between new CEO external network and post-succession strategic change categorized by succession context



Hypotheses 1 and 2 predict a conditional indirect effect of new CEO outsidership on post-succession strategic change through CEO-board network and CEO external network respectively, depending on whether the firm is in a turnaround situation or a business-as-usual situation. To test for these conditional indirect effects (i.e., moderated mediation effects), we analyze three models for the relationship between the dependent variable (Y), independent variable (X), moderator (Mo), and mediator (Me) as described in equations 1-3 (Muller, Judd, & Yzerbyt, 2005; Baron & Kenny, 1986). Equation 1 assesses the conditional effect between the independent and the dependent variables (*overall effect*), equation 2 assesses the relationship between the mediator and the independent variable, and equation 3 tests both the conditional mediating effect of the mediator (*partial effect*) and the residual effect of the independent variable on the dependent variable (*direct effect*) where a less significant and weaker direct effect compared to the overall effect indicates a moderated mediating effect.

$$Y = \beta_{10} + \beta_{11}X + \beta_{12}Mo + \beta_{13}XMo + \varepsilon_1 \quad (1)$$

$$Me = \beta_{20} + \beta_{21}X + \beta_{22}Mo + \beta_{23}XMo + \varepsilon_2 \quad (2)$$

$$Y = \beta_{30} + \beta_{31}X + \beta_{32}Mo + \beta_{33}XMo + \beta_{34}Me + \beta_{35}MeMo + \varepsilon_6 \quad (3)$$

The results of Model 2 (explained above) show a significant and negative conditional overall effect between new CEO outsidership and post-succession strategic change which responds to H1 and H2 (equation 1). We then examine the relationship between new CEO outsidership and the mediators: CEO-board network and CEO external network (equation 2). Models 9-10 in Table 3 show a significant and negative relationship between new CEO outsidership and CEO-board network for both measures (tie strength: $b = -0.72, p < 0.001$; multiplexity: $b = -0.15, p < 0.001$). These results indicate that a new CEO with a higher degree of outsidership will be less embedded in the board, that is, will have weaker ties and fewer multiplex ties with board members. Model 12 shows a significant and positive relationship between new CEO outsidership and new CEO external network ($b = 0.33, p < 0.001$) – which

indicates that a new CEO with higher outsidership tends to have a larger external network.

Ultimately, we expect a mediating effect of the interaction between new CEO-board network and new CEO external network, and firm turnaround situation on the conditional overall effect (equation 3). To test H1, we add the two measures for the mediator new CEO board network and their interaction with the moderator firm turnaround situation in Table 2 Models 6-7. The two-way interactions between turnaround situation and tie strength ($b = 0.26$, $p < 0.001$) and between turnaround and multiplexity ($b = 0.56$, $p < 0.01$) have significant and positive coefficients which suggests a significant condition partial effect of CEO-board network on post-succession strategic change. If we compare these results with the results of Model 2, we see that the conditional effect of new CEO outsidership becomes less significant and weaker (with tie strength included: $b = 0.09$, $p = 0.57$; with multiplexity included: $b = -0.03$, $p = 0.83$). Combining the results from equations 1-3 above, we can conclude that the predicted conditional mediating effect of new CEO-board network on the relationship between new CEO outsidership and post-succession strategic change (H1) is supported. To test H2, we include the mediator new CEO external network and its interaction with the moderator firm turnaround situation in Model 8. We observe a significant and negative coefficient of the interaction between turnaround situation and new CEO external network ($b = -0.18$, $p < 0.001$), suggesting a significant condition partial effect of new CEO external network on post-succession strategic change. If we compare these results with the results in Model 2, we see that the conditional effect of new CEO outsidership becomes less significant and weaker ($b = -0.20$, $p = 0.09$). Combining the results of equations 1-3, we can conclude that the predicted conditional mediating effect of new CEO external network between new CEO outsidership and post-succession strategic change (H2) is supported.

Table 3: Relationship between new CEO outsidership and new CEO networks

	CEO-board network: tie strength <i>Model 9</i>	CEO-board network: multiplexity <i>Model 10</i>	<i>CEO external network Model 11</i>
Intercept	3.18*** (0.51)	0.82*** (0.20)	-2.57*** (0.54)
CEO age	0.00 (0.00)	0.00 (0.00)	0.01** (0.00)
CEO duality	0.07 (0.05)	0.02 (0.02)	0.19*** (0.05)
CEO network size	-0.08*** (0.02)	-0.01* (0.00)	0.44*** (0.02)
Board size	-0.01 (0.01)	-0.48** (0.12)	0.03** (0.01)
Change of board member	-2.87*** (0.30)	-1.00*** (0.12)	0.67* (0.31)
% Independent director	-1.57*** (0.29)	-1.57*** (0.29)	0.44 (0.31)
Firm size	0.10*** (0.02)	0.03*** (0.01)	0.37*** (0.02)
Firm prior performance	0.18 (0.16)	0.00 (0.06)	-0.64*** (0.17)
Industry munificence	0.14 (0.32)	-0.11 (0.13)	-0.30 (0.33)
Industry turbulence	1.33 (1.21)	0.54 (0.48)	-0.77 (1.29)
IMR	0.06 (0.06)	0.05* (0.02)	-0.00 (0.06)
New CEO outsidership	-0.72*** (0.03)	-0.15*** (0.01)	0.33*** (0.03)
Firm turnaround situation	0.10* (0.05)	0.14* (0.06)	-0.09 (0.15)
New CEO outsidership × firm turnaround situation	-0.59** (0.22)	-0.23** (0.09)	0.03 (0.23)
Observations	2208	2208	2208
R ²	0.54	0.36	0.61
F-statistics	6.57***	3.09***	8.55***

*Note: The standard deviations are reported in the parentheses * p<0.05; ** p<0.01; *** p<0.001. Year dummies and industry dummies are included but not reported.*

5. Discussion and conclusions

This study advances our understanding of when and why outsider CEOs manage to achieve more strategic change. We adopted a social network perspective to try to reconcile the seemingly opposing predictions in the literature: (a) the organizational disruption view that sees outsider CEOs as those who promote disruptive renewal, and (b) the learning and adaptation view which considers outsider CEOs as less able to swiftly shake things up after their appointment due to their relative lack of internal knowledge and organizational familiarity. We propose a more complete framework for CEO succession and put forward a nuanced exploration of the mediating role of new CEO's social networks and the moderating role of the succession context (i.e., business-as-usual vs. turnaround situations). First, we distinguished the firm's succession context and showed that outsider CEOs achieve higher levels of strategic change in firms in business-as-usual situations but lower levels of strategic change in firms in turnaround situations. This baseline finding challenges the assumption in the CEO succession literature of the overall benefits of an outsider CEO in terms of strategic changes and highlights the importance of considering the firm's context when analyzing the effects of CEO succession (Berns & Klarner, 2017; Karaevli & Zajac, 2013).

Second, we found a direct effect of the new CEO's internal and external social networks on post-succession strategic change. In particular, the new CEO's internal network with board members has a positive effect on strategic change in a turnaround situation but a negative effect in a business-as-usual situation. The strength of the social ties between the new CEO and the board members increases the support and advice from the board which helps the new CEO to initiate and implement changes in firms in a turnaround situation. However, strong ties lead to more cohesive networks resulting in information redundancy and social pressure which hinder changes in firms in a business-as-usual situation. By showing the significant effect of the CEO-board network on strategic change, we emphasize the importance of considering CEO-board

relations and respond to Berns and Klarner's (2017) call for a better understanding of board governance in the CEO succession process. In contrast, the new CEO's network with external business elites has a positive effect on post-succession strategic change in a business-as-usual situation but a negative effect on change in a turnaround situation. By showing the direct effect of CEO's networks on strategic change, we highlight the need to and advantages of studying CEO's social networks in CEO succession research and suggest the relevance of including social networks as relational characteristics in upper echelon theory (Cao et al., 2006).

Also, the contrasting effects of CEO's social networks in turnaround vs. business-as-usual situations raise questions about when certain networks are beneficial for the organization. This study draws attention also to how the contextual contingencies in which networks are embedded influence network outcomes which is an understudied topic in network research (Oppen & Burt, 2021). Our work highlights that network benefits are not granted only per se by a particular structural position (e.g., Perry-Smith, 2006) or by individual agency to shape and change networks to reap these benefits (see e.g., Bensaou et al., 2014); depending on the overall context, their outcomes could be contradictory (e.g., Wong & Boh, 2014; Battilana & Casciaro, 2012; Xiao & Tsui, 2007). This additional dimension should be addressed in more depth in future network research.

Third, we find that the mediating effect of new CEO's networks – both internal and external – between new CEO outsidership and strategic change depends on the firm's performance contexts. In particular, our study showed that both an outsider CEO's weaker networks with board members and more established networks with external business elites explain the paradoxical outside succession effect on strategic change in the business-as-usual and turnaround situations. Chen and Hambrick (2012) suggest greater attention should be paid to the effect of new CEO characteristics on strategic change in the turnaround since new CEOs influence firm performance via their strategic choices and changes (Hambrick & Mason, 1984).

Our study highlights the critical role of CEO networks for successful implementation of strategic change. By comparing CEO succession outcomes in turnaround situations and business-as-usual situations and by showing the opposite effects of new CEO outsidership and new CEO's social networks on strategic change, we draw attention to the particularity of firms with declining performance and the various additional problems facing a new CEO from outside. We would encourage future research on CEO succession to treat succession events in turnaround situations as a distinct research context and to investigate in more depth how new CEOs and their social networks contribute to firm turnaround (Chen and Hambrick, 2012). We believe that more work in this direction would provide more specific insights on and potential solutions to the "turnaround trap" affecting outside CEOs (Karaevli & Zajac, 2016).

Our study generates practical implications related to the appointment and integration of new CEOs. Based on our findings, we suggest that when considering the recruitment of an outsider CEO, firms should take account of the firm's financial situation to decide whether an insider CEO might be better able to introduce change. Also, when considering appointment of an outsider CEO the firm should consider the extent of the candidates pre-established ties with the firm's board members as an important contingency affecting implementation of strategic change.

We acknowledge some limitations of our study and suggest directions for future research. First, since our 2208 new CEOs come from a wide range of industries, in all the analyses, we made efforts to reduce cross-industry influence by adjusting the measures of post-strategic change, including the industry-level control variables and the industry and year dummies. However, we recognize that different industries tend to favor different strategies, and future research could focus on one or a few specific industries. Second, our composite measure of strategic change (Finkelstein & Hambrick, 1990; Oehmichen et al., 2017) has some limitations when applied to a turnaround situation where some strategic dimensions may not

be fully controllable by the CEO. This calls for a better measure of strategic change, which would be appropriate for companies in different situations. Third, we studied the complex relationship between new CEO outsidership, new CEO-board network, new CEO external network, post-succession strategic change, and succession context (turnaround vs. business-as-usual) using a moderated mediating model, following Baron and Kenny's (1986) analytical method and its advancements (e.g., Buyl, Boone, Hendriks, & Matthyssens, 2011; Muller et al., 2005). We would acknowledge that a moderated mediation effect remains statistically challenging to examine. It is hoped that future research could improve the existing analytical methods and propose new methods to address this problem. Last but not least, we observe the post-succession strategic change as an outcome of CEO succession (Berns & Klarner, 2017) and do not study the impact on firm performance. Grounded on the upper echelons theory (Hambrick & Mason, 1984), the top management team affects firm performance through their strategic choices; thus, we consider strategic change as a reflection of the intervening strategic actions taken by the new CEOs (Chen & Hambrick, 2012). However, we acknowledge that firm performance is one of the ultimate strategic goals of CEO succession and new CEOs' strategic actions (Berns & Klarner, 2017; Hambrick & Mason, 1984). Thus, we suggest future research explore how CEO networks interact with other strategic outcomes – including firm performance – after the succession. By adopting a social network perspective to study these relationships, future research can reconcile relevant contradictions and provide a better understanding of CEO succession.

References

- Ahlin, B., Drnovšek, M., & Hisrich, R. D. (2014). Exploring the moderating effects of absorptive capacity on the relationship between social networks and innovation. *Journal for East European Management Studies*, 213-235.
- Ahuja, G., Soda, G., & Zaheer, A. (2012). The Genesis and Dynamics of Organizational Networks. *Organization Science*, 23(2), 434–448.
- Arendt, L. A., Priem, R. L., & Ndofor, H. A. (2005). A CEO-adviser model of strategic decision making. *Journal of Management*, 31(5), 680-699.
- Barker, V. L., & Duhaime, I. M. (1997). Strategic Change in the Turnaround Process: Theory and Empirical Evidence. *Strategic Management Journal*, 18(1), 13–38.
- Barker, V. L., & Mueller, G. C. (2002). CEO characteristics and firm R&D spending. *Management Science*, 48(6), 782-801.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
- Battilana, J., & Casciaro, T. (2012). Change agents, networks, and institutions: a contingency theory of organizational change. *Academy of Management Journal*, 55(1): 381–398.
- Bensaou, B. M., Galunic, C., & Jonczyk-Sédès, C. (2014). Players and purists: Networking strategies and agency of service professionals. *Organization Science*, 25(1), 29-56.
- Berns, K. V.D., & Klarner, P. (2017). A Review of the CEO Succession Literature and A Future Research Program. *Academy of Management Perspectives*, 31(2), 83–108.
- Borgatti, S. P., & Cross, R. (2003). A relational view of information seeking and learning in social networks. *Management Science*, 49(4), 432–445.
- Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network analysis in the social sciences. *Science*, 323(5916), 892-895.
- Boyd, B. K., Haynes, K. T., & Zona, F. (2011). Dimensions of CEO-board relations. *Journal of Management Studies*, 48(8), 1892–1923.
- Burt, R. S. (1987). Social contagion and innovation: Cohesion versus structural equivalence. *American journal of Sociology*, 92(6), 1287-1335.
- Burt, R. S. (1992). *Structural holes*. Cambridge, MA: Harvard University Press.
- Burt, R. S., Opper, S., & Holm, H. J. (2022). Cooperation beyond the network. *Organization Science*, 33(2), 495-517.
- Burt, R. S., & Soda, G. (2017). Social origins of great strategies. *Strategy Science*, 2(4), 226-233.
- Burt, R. S., & Soda, G. (2021). Network capabilities: Brokerage as a bridge between network theory and the resource-based view of the firm. *Journal of Management*, 47(7), 1698-1719.

- Buyl, T., Boone, C., Hendriks, W., & Matthyssens, P. (2011). Top management team functional diversity and firm performance: The moderating role of CEO characteristics. *Journal of management studies*, 48(1), 151-177.
- Carpenter, M. A., Li, M., & Jiang, H. (2012). Social Network Research in Organizational Contexts: A Systematic Review of Methodological Issues and Choices. *Journal of Management*, 38(4), 1328–1361.
- Cao, Q., Maruping, L. M., & Takeuchi, R. (2006). Disentangling the effects of CEO turnover and succession on organizational capabilities: A social network perspective. *Organization Science*, 17(5), 563-576.
- Chen, G., & Hambrick, D. C. (2012). CEO Replacement in Turnaround Situations: Executive (Mis)fit and its Performance Implications. *Organization Science*, 23(1), 225–243.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, 94, 95-120.
- Coleman, J. S. (1990). Commentary: Social institutions and social theory. *American sociological review*, 55(3), 333-339.
- Collins, C. J., & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of management Journal*, 46(6), 740-751.
- Datta, D. K., Rajagopalan, N., & Zhang, Y. (2003). New CEO Openness to Change and Strategic Persistence: The Moderating Role of Industry Characteristics. *British Journal of Management*, 14(2), 101–114.
- Fernández-Pérez, V., García-Morales, V. J., & Bustinza-Sánchez, Ó. F. (2012). The effects of CEOs' social networks on organizational performance through knowledge and strategic flexibility. *Personnel Review*.
- Finkelstein, S., & Hambrick, D. C. (1990). Top-Management-Team Tenure and Organizational Outcomes: The Moderating Role of Managerial Discretion. *Administrative Science Quarterly*, 35(3), 484.
- Finkelstein, S., & Hambrick, D. C. (1996). *Strategic Leadership: Top Executives and Their Effects on Organizations*. St. Paul, MN: South-Western.
- Finkelstein, S., Hambrick, D. C., & Cannella, B. (2009). *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. Oxford University Press.
- Flickinger, M., Wrage, M., Tuschke, A., & Bresser, R. (2016). How CEOs protect themselves against dismissal: A social status perspective. *Strategic Management Journal*, 37(6), 1107-1117.
- Fox, J., Kleiber, C., & Zeileis, A. (2020). ivreg: Two-Stage Least-Squares Regression with Diagnostics. *R package version 0.5-0*.
- Friedman, S. D., & Saul, K. (1991). A Leader's Wake: Organization Member Reactions to CEO Succession. *Journal of Management*, 17(3), 619–642.
- Georgakakis, D., & Ruigrok, W. (2017). CEO Succession Origin and Firm Performance: A Multilevel Study. *Journal of Management Studies*, 54(1), 58–87.

- Ghazzawi, I. (2018). Organizational decline: A conceptual framework and research agenda. *International Leadership Journal*, 10(1), 37-80.
- Gong, Y., Kim, T. Y., & Liu, Z. (2020). Diversity of social ties and creativity: Creative self-efficacy as mediator and tie strength as moderator. *Human Relations*, 73(12), 1664-1688.
- Goodstein, J., Gautam, K., & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic management journal*, 15(3), 241-250.
- Granovetter, M. S. (1973). The strength of weak ties. *American journal of sociology*, 78(6), 1360-1380.
- Granovetter, M. S. (1983). The strength of weak ties: A network theory revisited. *Sociological theory*, 201-233.
- Granovetter, M. S. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, 91: 481-510.
- Gulati, R., Nohria, N., & Zaheer, A. (2000). Strategic networks. *Strategic management journal*, 21(3), 203-215.
- Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of management review*, 32(2), 334-343.
- Hambrick, D. C., Geletkanycz, M. A., & Fredrickson, J. W. (1993). Top executive commitment to the status quo: Some tests of its determinants. *Strategic Management Journal*, 14(6), 401-418.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, 9(2), 193-206.
- Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative science quarterly*, 44(1), 82-111.
- Haynes, K. T., & Hillman, A. (2010). The effect of board capital and CEO power on strategic change. *Strategic management journal*, 31(11), 1145-1163.
- Henderson, A. D., Miller, D., & Hambrick, D. C. (2006). How quickly do CEOs become obsolete? Industry dynamism, CEO tenure, and company performance. *Strategic Management Journal*, 27(5), 447-460.
- Heavey, C., Simsek, Z., & Fox, B. C. (2015). Managerial social networks and ambidexterity of SMEs: The moderating role of a proactive commitment to innovation. *Human Resource Management*, 54(1), 201-221.
- Heyden, M. L. M., van Doorn, S., Reimer, M., Van den Bosch, F. A. J., & Volberda, H. W. (2013). Perceived environmental dynamism, relative competitive performance, and top management team heterogeneity: Examining correlates of upper echelons' advice-seeking. *Organization Studies*, 34(9): 1327-1356.
- Houghton, S. M., Smith, A. D., & Hood, J. N. (2009). The influence of social capital on strategic choice: An examination of the effects of external and internal network relationships on strategic complexity. *Journal of Business Research*, 62(12), 1255-1261.
- Jack, S. L. (2005). The role, use and activation of strong and weak network ties: A qualitative analysis. *Journal of management studies*, 42(6), 1233-1259.

- Jonczyk, C. D., Lee, Y. G., Galunic, C. D., & Bensaou, B. M. (2016). Relational changes during role transitions: The interplay of efficiency and cohesion. *Academy of Management Journal*, 59(3), 956-982.
- Karaevli, A. (2007). Performance Consequences of New CEO “Outsiderness”: Moderating Effects of Pre- and Post-succession Contexts. *Strategic Management Journal*, 28(7), 681–706.
- Karaevli, A. (2016). The “Turnaround Trap” of outsider CEOs. *Organizational Dynamics*, 4(45), 278-282.
- Karaevli, A., & Zajac, E. J. (2013). When Do Outsider CEOs Generate Strategic Change? The Enabling Role of Corporate Stability. *Journal of Management Studies*, 50(7), 1267–1294.
- Keil, T., Lavie, D., & Pavićević, S. (2022). When Do Outside CEOs Underperform? From a CEO-Centric to a Stakeholder-Centric Perspective of Post-Succession Performance. *Academy of Management Journal*, 65(5), 1424-1449.
- Kijkuit, B., & Van Den Ende, J. (2007). The organizational life of an idea: Integrating social network, creativity and decision-making perspectives. *Journal of Management Studies*, 44(6), 863-882.
- Lazer, D., & Friedman, A. (2007). The network structure of exploration and exploitation. *Administrative science quarterly*, 52(4), 667-694.
- Liang, X., Barker, V. L., & Schepker, D. J. (2018). Chief executive cognition, turnaround strategy and turnaround attempts of declining firms. *Journal of Change Management*, 18(4), 304-326.
- Lin, N. 2001. *Social capital: A theory of social structure and action*. New York, NY: Cambridge University Press.
- Ma, S., Kor, Y.Y., & Seidl, D. (2020). CEO Advice Seeking: An Integrative Framework and Future Research Agenda. *Journal of Management*, 46(6), 771-805.
- Ma, X., Yao, X., & Xi, Y. (2009). How do interorganizational and interpersonal networks affect a firm's strategic adaptive capability in a transition economy?. *Journal of Business Research*, 62(11), 1087-1095.
- Mansfield, E. R., & Helms, B. P. (1982). Detecting Multicollinearity. *The American Statistician*, 36(3), 158.
- McDonald, M. L., & Westphal, J. D. (2003). Getting by with the advice of their friends: CEOs' advice networks and firms' strategic responses to poor performance. *Administrative science quarterly*, 48(1), 1-32.
- Mintzberg, H. (1973). Nature of managerial work.
- Mors, M.L., Rogan, M., & Lynch, S. E. (2018). Boundary spanning and knowledge exploration in a professional services firm. *Journal of Professions and Organization*, 5(3), 184-205.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of personality and social psychology*, 89(6), 852-863.

- O’Kane, C., & Cunningham, J. (2014). Turnaround leadership core tensions during the company turnaround process. *European Management Journal*, 32(6), 963-980.
- O’Riordan., C., Kelliher, F., Flood, P.C., & Higgs, M. (2019). *Outsider Leadership: Insights and interviews from business leader*. Springer.
- Oehmichen, J., Schrapp, S., & Wolff, M. (2017). Who Needs Experts Most? Board Industry Expertise and Strategic Change—A Contingency Perspective. *Strategic Management Journal*, 38(3), 645–656.
- Opper, S., & Burt, R. S. (2021). Network Structure and Temporal Myopia. *Academy of Management Journal*, 64(3), 741-771.
- Pearce, J. A., & Robbins, K. (1993). Toward Improved Theory and Research on Business Turnaround. *Journal of Management*, 19(3), 613–636.
- Perry-Smith, J. E. (2006). Social yet creative: The role of social relationships in facilitating individual creativity. *Academy of Management journal*, 49(1), 85-101.
- Perry-Smith, J. E., & Mannucci, P. V. (2017). From creativity to innovation: The social network drivers of the four phases of the idea journey. *Academy of Management Review*, 42(1), 53-79.
- Reagans, R., & McEvily, B. (2003). Network structure and knowledge transfer: The effects of cohesion and range. *Administrative science quarterly*, 48(2), 240-267.
- Schendel, D., Patton, G. R., & Riggs, J. (1976). Corporate Turnaround Strategies: A Study of Profit Decline and Recovery. *Journal of General Management*, 3(3), 3–11.
- Schepker, D. J., Kim, Y., Patel, P. C., Thatcher, S. M., & Campion, M. C. (2017). CEO succession, strategic change, and post-succession performance: A meta-analysis. *The Leadership Quarterly*, 28(6), 701-720.
- Schmitt, A., & Raisch, S. (2013). Corporate turnarounds: The duality of retrenchment and recovery. *Journal of Management Studies*, 50(7), 1216-1244.
- Schweizer, L., & Nienhaus, A. (2017). Corporate Distress and Turnaround: Integrating the Literature and Directing Future Research. *Business Research*, 10(1), 3–47.
- Seshadri, S., & Shapira, Z. (2001). Managerial allocation of time and effort: The effects of interruptions. *Management science*, 47(5), 647-662.
- Shen, W., & Cannella, A. A. (2002). Revisiting the Performance Consequences of CEO Succession: The Impacts of Successor Type, Postsuccession Senior Executive Turnover, and Departing CEO Tenure. *Academy of Management Journal*, 45(4), 717–733.
- Shen W. (2003). The dynamics of the CEO-board relationship: an evolution perspective. *Academy of Management Review*, 28(3): 466–476.
- Song, Y., Fang, Y., Wang, M., & Shi, J. (2020). A multiplex view of leadership structure in management teams. *Personnel Psychology*, 73(4), 615-640
- Trahms, C. A., Ndofor, H. A., & Sirmon, D. G. (2013). Organizational Decline and Turnaround: A Review and Agenda for Future Research. *Journal of Management*, 39(5), 1277–1307.

- Xiao, Z., & Tsui, A. S. (2007). When brokers may not work: The cultural contingency of social capital in Chinese high-tech firms. *Administrative Science Quarterly*, 52(1), 1-31.
- Weng, D. H., & Lin, Z. (2014). Beyond CEO tenure: The effect of CEO newness on strategic changes. *Journal of Management*, 40(7), 2009-2032.
- Westphal, J. D. (1999). Collaboration in the boardroom: Behavioral and performance consequences of CEO-board social ties. *Academy of management Journal*, 42(1), 7-24.
- Westphal, J. D., & Fredrickson, J.W. (2001). Who directs strategic change? Director experience, the selection of new CEOs, and change in corporate strategy. *Strategic Management Journal*, 22(12), 1113-1137.
- Westphal, J. D., Boivie, S., & Ming Chng, D. H. (2006). The strategic impetus for social network ties: Reconstituting broken CEO friendship ties. *Strategic Management Journal*, 27(5), 425-445.
- Westphal, J. D., & Zhu, D. H. (2019). Under the radar: How firms manage competitive uncertainty by appointing friends of other chief executive officers to their boards. *Strategic Management Journal*, 40(1), 79-107.
- Wiersema, M. F. (1992). Strategic consequences of executive succession within diversified firms. *Journal of Management Studies*, 29(1), 73-94.
- Wong, S. S., & Boh, W. F. (2014). The contingent effects of social network sparseness and centrality on managerial innovativeness. *Journal of Management Studies*, 51(7), 1180-1203.
- Zajac, E. J., & Westphal, J. D. (1996). Who shall succeed? How CEO/board preferences and power affect the choice of new CEOs. *Academy of Management Journal*, 39(1), 64-90.
- Zhang, Y., & Rajagopalan, N. (2003). Explaining New CEO Origin: Firm versus Industry Antecedents. *Academy of Management Journal*, 46(3), 327-338.
- Zhang, Y., & Rajagopalan, N. (2004). When the known devil is better than an unknown god: An empirical study of the antecedents and consequences of relay CEO successions. *Academy of management journal*, 47(4), 483-500.
- Zhang, Y., & Rajagopalan, N. (2010). Once an Outsider, Always an Outsider? CEO Origin, Strategic Change, and Firm Performance. *Strategic Management Journal*, 31(3), 334-346.
- Zhu, Q., Hu, S., & Shen, W. (2020). Why do some insider CEOs make more strategic changes than others? The impact of prior board experience on new CEO insiderness. *Strategic Management Journal*, 41(10), 1933-1951.

Appendix

Stage 1 – Probit model of CEO succession event

Variables	Coefficient	S.E.
Intercept	-1.51 ***	0.22
Time since last CEO replacement event	0.01 ***	0.00
Number of prior CEO replacement events	-0.08 ***	0.01
Firm size	0.06 ***	0.01
Firm prior performance	-0.34 ***	0.06
Industry munificence	-0.09	0.12
Industry turbulence	-0.48	0.44
Chi-square	894.12	
Pseudo-R ²	0.05	

*Note: Year dummies and industry dummies are not reported. N=38999; * p<0.05; ** p<0.01; *** p<0.001.*

Article 2: Reap what you sow: Who benefits from business networks

Abstract

Extant research has well established the benefits of social networks for entrepreneurs and new ventures; knowing that, entrepreneurs join business networking organizations where they are granted access to resources and opportunities embedded in the established network. We study the networking behaviors of entrepreneurs in a large business networking organization and examine their effects on obtaining tangible benefits in terms of the number of business referrals entrepreneurs gain from the network. We further explore the antecedents for different networking behaviors and their effectiveness. Our empirical study of 1858 entrepreneurs identifies their networking behaviors for deepening, broadening, and brokering relations with other entrepreneurs. We find that network-brokerage behaviors are more effective than others for receiving business referrals from other members. We also find that female and male entrepreneurs tend to adopt different networking behaviors, and the effectiveness of network-brokerage behaviors in gaining benefits is also gendered. In the supplementary analysis, we further explore how the entrepreneurial context regarding the sector of business activities favors or constrains entrepreneurs' networking behaviors. Our work highlights the role of network agency in generating tangible benefits for actors. It contributes to the literature on social networks and entrepreneurship and generates practical implications for entrepreneurs and business networking organizations aiming to support entrepreneurial activities.

Keywords: Social networks, networking behaviors, entrepreneurs, business networks, female entrepreneurs

1. Introduction

Extant research has demonstrated the benefits of social networks for individuals, such as their job performance (e.g., Brennecke & Stoemmer, 2018), professional advancement (e.g., Kiazad, Kraimer, Seibert, & Sargent, 2020), entrepreneurial activities (e.g., Wang, 2020), and venture performance (e.g., Patel & Terjesen 2011). Knowing that, increasing numbers of networking organizations have been established and attracted many members. Potentially rich resources and opportunities are embedded in such networks (Granovetter, 1973; Granovetter, 1985; Hoang & Antoncic, 2003), and being a member of these networks grants individual access to these resources (Abraham, 2020; Gulati, Nohria, & Zaheer, 2000). However, many of these networking organizations – as well as the network research – have overlooked the importance of how individuals take action to transform these potential opportunities into real benefits (Ahuja, Soda, & Zaheer, 2012; Tasselli & Kilduff, 2021; Burt, Kilduff, & Tasselli, 2013).

Network researchers have long been studying why some individuals benefit more than others from their networks (e.g., Burt et al., 2013). The majority of the relevant work has discussed this question from a network structure perspective (e.g., Burt, 1992; Carpenter, Li, & Jiang, 2012, Borgatti, Mehra, Brass, & Labianca, 2009), arguing that some individuals have more advantageous position in a network structure (e.g., Vissa & Chacar, 2009; Batjargal, Hitt, Tsui, Arregle, Webb, & Miller, 2013; Ho & Pollack, 2014). However, the network structure perspective can only partly explain the phenomenon that individuals in the same network generate different degrees of benefits. This indicates much remains to be learned about how network benefits are created and reaped. An emerging body of literature has begun to point to the agency role of individuals in their networks (e.g., Tasselli & Kilduff, 2021; Tasselli, Kilduff, & Menges, 2015; Hallen, Davis, & Murray, 2020), positing that individuals carry out networking behaviors and deliberate strategies to realize such benefits. Recent work has

identified networking behaviors about getting connected to target contacts (e.g., Nai, Lin, Kotha, & Vissa, 2022), disconnecting with redundant contacts (e.g., Jonczyk, Lee, Galunic, & Bensaou, 2016), expanding networks (e.g., Bensaou, Galunic, & Jonczyk, 2014), and bridging unconnected individuals (i.e., network brokerage, e.g., Kwon, Rondi, and Levin, 2020). However, these studies have not yet fully addressed their derived tangible benefits. We draw on the agency to solve the riddle of why individuals benefit differently from the same networks by focusing on their networking behaviors. In particular, we explore how respective benefits can be achieved through individuals' active networking behaviors and what antecedents may constrain individuals from carrying out more beneficial networking behaviors.

We study the networking behaviors of entrepreneurs in established networks of a large business networking organization in Switzerland and examine how entrepreneurs achieve tangible benefits for their business (i.e., receiving business referrals) through their networking behaviors. We argue that active networking behaviors for deepening and broadening network relations have a positive impact on gaining benefits from the network. Network-deepening behaviors facilitate strong ties and cohesive networks, enhancing the relational embeddedness of individuals in the network (Carpenter et al., 2012) and encouraging resource exchanges (Granovetter, 1992). Network-broadening behaviors expand the amount of potential resources in the network. Network-brokerage behaviors allow individuals to take structural advantages as network brokers for *tertius iungens* (Obstfeld, 2005) and promote reciprocal exchanges (Cropanzano & Mitchell, 2005). We further explore the two antecedents of networking behaviors: the entrepreneur's gender and the context of his or her business activities (i.e., sector). Network research has shown that women and men tend to have different social networks and behave differently in their networks (Brands, Ertug, Fonti, & Tasselli, 2022; Woehler, Cullen-Lester, Porter, & Frear, 2021; Fang, Zhang, & Shaw, 2021). As a result, gender has an impact on who benefits from networks – reflected as gender inequality in various

fields – and on how they obtain benefits (Woehler et al., 2021). Our study considers gender as one of the key antecedents of networking behaviors and their derived benefits. In addition, with business activities in different sectors, each entrepreneur is embedded in the broader business context, which may facilitate or constrain the networking behaviors she or he can adapt. Combining these points, we propose a model for the relationship between networking behaviors and benefits, as well as gender and business context.

We test the model through a quantitative empirical study on 1858 active entrepreneurs in a large business networking organization in Switzerland. We find that while all types of active networking behaviors help individuals gain tangible benefits, individuals carrying out more active network-brokerage behaviors get the highest marginal returns. We further find that female and male entrepreneurs tend to adopt different networking behaviors, and the effectiveness of network brokerage behaviors in deriving benefits is also gendered. In addition, we find that the entrepreneurial context could constrain entrepreneurs' active networking behaviors, particularly the valuable network-brokerage behaviors for female entrepreneurs.

Our study contributes to the literature on social networks and entrepreneurship in multiple aspects. First, we make major contributions to the ongoing conversation in the network literature about the role of network agency (Tasselli & Kilduff, 2021; Ahuja et al., 2012) by offering a more fine-grained understanding of networking behaviors and the derived network benefits. Holding the immediate network structure constant by studying the individuals in the same business networks, we focus on individuals' networking behaviors and show how these behaviors lead to outcomes in terms of tangible benefits, which is the ultimate purpose of network agency (Burt et al., 2013). Second, by exploring how networking behaviors are “gendered”, our study provides new insights into the role of gender in networks (Brands et al., 2022; Fang et al., 2021) and entrepreneurship studies (Hallen et al., 2020). We thereby inform network research on factors determining different network benefits and mechanisms for

achieving network benefits for disadvantaged groups (Woehler et al, 2021; Brands et al., 2022). Third, by considering the context of entrepreneurs' behaviors, we respond to the call in the entrepreneurship literature for a better understanding of the role of context – especially the interaction between entrepreneurial context and entrepreneurial actions (Patriotta & Siegel, 2019). We also contribute to the ongoing debate on the relationship between structure and agency (Tasselli et al., 2021; Hallen et al., 2020; Patriotta & Siegel, 2019) by studying how actors' networking behaviors are enabled or constrained by broader overall structures of the business contexts. Based on our findings, we further develop practical insights for business networking organizations, which aim to support entrepreneurs and small and medium-sized enterprises (SMEs) on how they could promote business networking among entrepreneurs and help their businesses more effectively. We also offer practical recommendations for entrepreneurs and particularly disadvantaged groups who benefit less from networks and networking on how they could make better use of their networks for business development.

2. Theory and hypotheses

2.1. Entrepreneurial networks and networking

Extent research has demonstrated that entrepreneurs benefit from their networks due to rich resources and opportunities embedded in networks (Granovetter, 1973; Granovetter, 1985; Hoang & Antoncic, 2003). For example, social networks grant entrepreneurs access to investment (e.g., Hallen, 2008) and strategic advice (e.g., Vissa & Chacar, 2009), which are crucial for further development of their businesses. Studies on entrepreneurial networks have revealed the advantage of particular network structures and entrepreneur's position in the network – such as structural holes (e.g., Batjargal et al., 2013; Vissa & Chacar, 2009), network centrality (e.g., Ho & Pollack, 2014), tie strength (e.g., Patel & Terjesen 2011; Luo, Mai, & Ye, 2023) and network range (e.g., Patel & Terjesen 2011) – on their business growth and

venture performance.

Entrepreneurs – appreciating social networks and advantageous network structures – play an active role in shaping their networks through deliberate networking behaviors and strategies. Hallen and colleagues (2020) have summarized three key features of entrepreneurs' agentic networking behaviors in their integrative review paper: 1) intentional, 2) instrumental, and 3) challenging. Seeing the agency role in entrepreneurs' networks, an emerging body of literature explores entrepreneurs' networking behaviors. Influenced by the strength of weak ties theory (Granovetter, 1973), some studies explore how entrepreneurs take actions to build strong ties or to add new weak ties. Hallen and Eisenhardt (2012) identify two types of networking strategies adopted by entrepreneurs in the US: 1) leveraging existing strong ties, and 2) catalyzing strategies through creating new ties with opportunities; they find that both strategies help to build inter-organizational ties effectively. Similarly, Vissa (2012) studies entrepreneurs in India and classifies their networking styles into two types: one focusing on network-broadening actions (e.g., reaching out to new alters and establishing interpersonal knowledge to new alters) and the other focusing on network-deepening actions (e.g., time-based interaction pacing with existing alters, relational embedding with existing alters, and network preserving with existing alters). He finds that entrepreneurs more engaged in network-broadening actions tend to rely less on referrals to find new business partners than those more engaged in network-deepening actions (Vissa, 2012). Vissa and Bhagavatula (2012) further study the impact of these networking actions on the entrepreneurs' network churn (i.e., the change in network composition) and find that entrepreneurs more involved in establishing relationally embedded ties with existing alters experience lesser network churn, while entrepreneurs more involved in time-based interaction pacing with existing alters experienced greater network churn. Engagement in networking with strong ties and weak ties also shows different benefits for entrepreneurs. Klyver and Arenius (2022) studied nascent entrepreneurs

and found that while the impact of entrepreneurs' networking with strong ties on launching new business depends on their social skills, the benefit of weak ties is unconditional. Soetanto, Huang, and Jack (2018) studied how entrepreneurs could overcome entrepreneurial obstacles through networking and found that weak ties help overcome obstacles from internal sources while strong ties are helpful for overcoming obstacles from external sources. Drawing on the structural hole theory (Burt, 1992), a group of network researchers examine how individuals behave as a network broker when spanning across the unconnected individuals by keeping them apart (i.e., *tertius gaudens*) or introducing them to each other directly (i.e., *tertius iungens*) (Kwon et al., 2020; Obstfeld, 2005; Burt, 1992) – this aspect has received minor attention in entrepreneurial networking studies. Stam (2010) studied entrepreneurs' participation in industry conferences and found that attending heterogeneous conferences and getting connected to different participants in these conferences provide great opportunity for entrepreneurs to become network brokers in the industry. Ebbers (2014) examined entrepreneurs' *tertius iungens* behaviors focusing on connecting others besides their self-oriented networking behaviors focusing on their personal ties. He found that both types of behaviors increase the number of business partners to whom the entrepreneurs give business assignments but do not affect the number of business partners from whom they receive business assignments (Ebbers, 2014). A small number of studies have adopted a dynamics lens to examine how entrepreneurs' networking behaviors change along the stage of their ventures. Gerges-Yammine, Ter Wal, and Malhotra (2020) observe entrepreneurs' networking behaviors over time and find that they develop their social networks by first combining spontaneous and strategic networking behaviors in unbounded arenas and then gradually deepen more focused relationships in bounded arenas.

Entrepreneurs' networking behaviors are however not fully decided by their subjective initiative; they can be constrained by multiple individual and network level factors (Tasseli &

Kilduff, 2021). Integrating the structural perspective and agentic perspective on entrepreneurial network evolution, Hallen and colleagues (2020) highlight that an entrepreneur's established networks play a crucial role for their subsequent networking behaviors. For example, Hallen (2008) found that the success of business networking depends on entrepreneurs' personal ties and human capital at the early venture stage. This puts some entrepreneurs into a disadvantageous situation compared to others from an early time.

Numerous business networking organizations have been established – such as networking groups, business associations, and incubators – where the members are supposed to interact and exchange resources for business purposes. By granting equal access to potential resources embedded in the networks to the members, business networking organizations aim to support business growth of their members and weaken the impact of their initial network structure. These membership-based business networks deserve specific attention because they are differentiated from entrepreneur's personal networks. First, they consist of many active and ambitious entrepreneurs active in different businesses; there are massive resources and collaborative opportunities in these networks to exploit. Second, with a clear business purpose, they have an instrumental nature, and it helps to reduce the personal hesitation of the members – especially the female entrepreneurs – to ask for favors (Greguletz, Diehl, & Kreutzer, 2019). Third, their structure allows us to consider them as closed and stable networks, while facilitating trust, require citizenship behaviors and networking actions to obtain benefits (Burt, 2001). Our knowledge on individuals' personal social networks is not sufficient to explain numerous phenomena of these business networks. Moreover, studying these membership-based business networks enables us to explore more unanswered questions in the network literature and advance network theory.

A small group of scholars started to explore the structure and outcomes of business networks. Zhang and Guler (2020) study how a newcomer can be included in established

collaboration networks of venture capital syndicates in the US and find that the newcomer's embeddedness with the incumbent members' network matter. Ho and Pollack (2014) study a business network of entrepreneurs in the US and find that members with higher out-degree centrality in their network groups tend to generate higher business income. Further exploring this business network, Pollack, Rutherford, Seers, Coy, and Hanson (2016) find that a member's frequency of interactions with other members in the same network group is positively associated with the number of referrals he or she gives and receives. In their qualitative study of a business association of SMEs with its business matchmaking mission in the US, Giudici, Reinmoeller, and Ravasi (2018) find that the benefits of business networks for each member depend on the engagement and contribution of all the other members, which involve co-creating an interactional network context. Busch and Barkema (2021) studied an incubator in the emerging market and found that entrepreneurs also benefit from untargeted networking behaviors – i.e., building relationships with other entrepreneurs when the potential benefit from them was unknown. However, closer relationships with some of the members in business networks are not always beneficial. For example, Hasan and Koning (2019) studied an entrepreneurship bootcamp and found that entrepreneurs with pre-established ties with some members were less likely to interact with other members, which has unfavorable impact on performance. Also, a closed business network of entrepreneurs suffers from network inertia which makes the members less adaptive to new institutional environment (Zhang, Tan, and Tan, 2016). To break the inertia, entrepreneurs leverage their personal networks to play a broker's role to introduce external contact to network members. Abraham (2020) found that a gender bias in network-brokerage behavior: entrepreneurs tend to introduce external contacts to a male member over a female member. Such gender bias can be found in more studies on social networks and entrepreneurship. For example, Milanov, Hana, Justo, Rachida, Bradley, and Steven (2015) study the microcredit entrepreneurs in Kenya and find that the business

performance of male entrepreneurs benefits more from within-group ties than that of female entrepreneurs. Whether female entrepreneurs are disadvantaged in business networks and how could their active networking behaviors help them overcome disadvantages need to be further explored.

2.2. Networking behaviors and benefits

Membership-based business network is formed by a group of individuals with registered membership and characterized as a closed network. Although there are newcomers joining and old members leaving, the setup and the organization of the network remain unchanged. Embedded in business networks, members get access to resources (Granovetter, 1973; Nahapiet & Ghoshal, 1998). To turn these potential benefits into real ones, members carry out networking behaviors, interact with each other, shape the network structure, and take advantageous positions in the network (Tasselli & Kilduff, 2021; Burt et al., 2013). We argue that the networking behaviors enabling them to improve relational embeddedness and structural advantages (Carpenter et al., 2012) bring benefits to entrepreneurs.

Relational embeddedness refers to strong ties and cohesive networks (Carpenter et al., 2012). Strong ties – characterized by frequent interaction and long duration relationships (Carpenter et al., 2012; Granovetter, 1973) – foster trust and reciprocity between individuals, facilitate mutual support, and encourage resource exchange (Granovetter, 1992; Uzzi, 1997; Coleman, 1988). Borgatti and Cross (2003) suggest individuals understanding of each other's expertise facilitate their information exchange; frequent interactions keep updating information of each other's new resources. In closed and cohesive networks, individuals share information and resources through their dense and direct ties. Closed networks benefit from the “refinement and improvement of current knowledge” (Opper & Burt, 2021: 764) and tend to focus more on exploiting existing network resources rather than exploring new resources from outside the network (Burt & Soda, 2017). Members of a closed network are cautious in terms of protecting

their reputation while also feeling protected from the bad behaviors of others which enhances their willingness to cooperate with network members. Network-deepening behaviors, characterized by enhancing the interaction with one or more other members, help to increase tie strength and network cohesion, and strengthen relational embeddedness. A larger network with more members contains more resources and opportunities to explore (Granovetter, 1973). Individuals engaged in network-broadening behaviors, by introducing a contact in their personal networks to the business network as a potential new member, helps extend the range of the dense network and bring new resources and opportunities possessed by the member to the network.

Structural advantages refer to individual's brokerage position, allowing them to get access to unique resources (Burt, 1992). Individuals with a brokerage position bridge two or more individuals who are otherwise not connected (Burt, 1992). Connecting to unconnected individuals, individuals get non-redundant resources and have the power to control the information flow (Burt, 1992). Individuals carrying out network-brokerage behaviors, by connecting the contact of their personal networks and the members in the business network, take the structural advantage as network brokers for *tertius iungens* (Kwon et al., 2020; Obstfeld, 2005). Network-brokerage behaviors create triads which strengthen the individual's relation with the other two. Studies find that *tertius iungens* behavior is effective in a cooperative network by integrating diverse resources (Kwon et al., 2020).

Following social exchange theory, social interactions are characterized by reciprocal exchanges (Greguletz et al., 2019; Cropanzano & Mitchell, 2005). Reciprocity is "the moral nature of reciprocal obligations" where imbalance between receiving and giving favors is socially undesirable (Greguletz et al., 2019: 1235; Uehara, 1995). Through network-broadening and network-brokerage behaviors, individuals provide additional resources to other members and can thus expect a return of favors.

Hypothesis (H1). *Members who are more active in a) network-deepening, b) network-broadening, and c) network-brokerage behaviors in the business network tend to obtain more benefits from the network, i.e., receiving more business referrals from other members.*

2.3. Gender, networking behaviors, and benefits

Network studies are interested in how gender plays a role in networks and networking. Literature shows that women and men tend to have different networks, behave differently in their networks, and benefit differently from their networks (e.g., Brands et al., 2022; Fang et al., 2021; Woehler et al., 2021). Women are less agentic than men in networking (Fang et al., 2021; Woehler et al., 2021). The main reason is the moral concern which constrains instrumental networking behaviors (Casciaro, Gino, & Kouchaki, 2014) and women are more likely than men to perceive instrumental networking as immoral (Greguletz et al., 2019). In Greguletz and colleagues' (2019) interview study of 37 high-profile female leaders, they found that moral concerns of initiating social interactions partially explains why women build less effective networks than men. Fang and colleagues (2021) found that women are less engaged in cross-department networking behaviors, and that explains why women are less likely to hold a brokerage position in their networks. The gendered agentic networking behaviors get self-reinforcing following the through the gender role expectations (Woehler et al., 2021) where both women and men tend to socially internalize and adhere to the stereotype that women are less agentic (Woehler et al., 2021; Rudman & Phelan, 2008).

The gendered networking behaviors also have a structural origin (Woehler et al., 2021). Networking interactions follow homophily, namely individuals with shared characteristics tend to build relations (McPherson, Smith-Lovin, & Cook, 2001), such as same-gender relations. Since there are fewer female entrepreneurs than male entrepreneurs (Klyver & Grant, 2010), women have fewer opportunities than men to carrying out the preferable same-gender

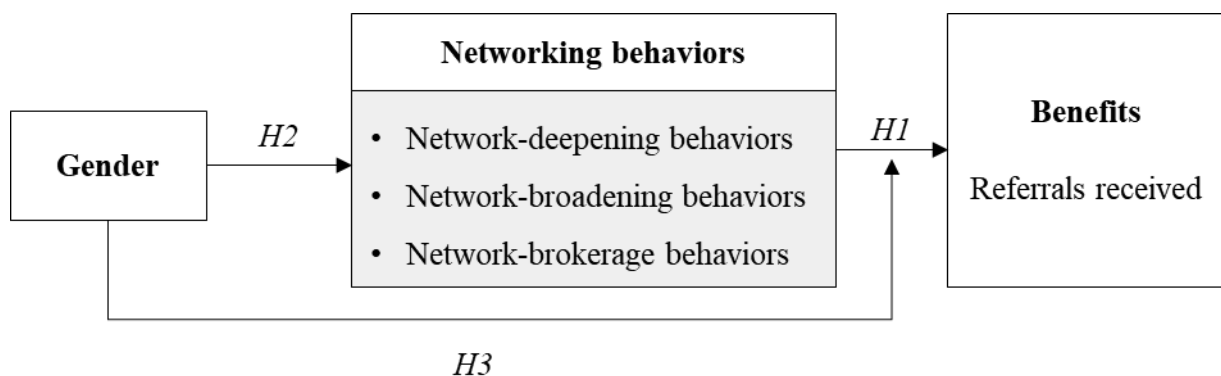
networking (Woehler et al., 2021). In addition, the gender different in social preferences create obstacles for women in men-dominating networking groups when the favorable ways of networking follow the majority (Brands et al., 2022). For example, networking events in the evening or on weekend are more difficult for women to join due to the work-family conflict (Greguletz et al., 2019).

Hypothesis (H2). *Male members tend to be more active than female members in a) network-deepening, b) network-broadening, and c) network-brokerage behaviors in the business network.*

The effectiveness of networking behaviors on gaining benefits are also gendered. There is another gender stereotype that women are less competent and lower in status (Woehler et al., 2021; Rudman & Phelan, 2008). Women’s active networking behaviors therefore tend to be less well received by the recipients than men’s (Brands et al., 2022; Rudman & Phelan, 2008). Individuals are more in favors of triadic exchanges with male contacts (Abraham, 2020). Besides, women tend to feel less legitimate to request benefits from their contact (Woehler et al., 2021) and have moral concerns about over-benefit (Greguletz et al, 2019). Therefore, even for women carrying out active networking behaviors, they tend to benefit less than men.

Hypothesis (H3). *When adopting the same active networking behaviors, female members tend to benefit less from the network than their male peers.*

Figure 1: Conceptual model of networking behaviors and hypotheses



3. Methods

3.1. Research context and sample

We conduct our study on a large international business association of entrepreneurs. This international organization aims to systematically foster networking contacts among local entrepreneurs and SMEs to generate revenues for their members. We collect the data from its Swiss branch, established in 2005. In Switzerland, there are more than 2000 active individual members in 87 local business networks (i.e., chapters). Each chapter consists of members doing business in different sectors in the same geographical area, where it arranges network meetings and other networking activities regularly to facilitate interactions between members and encourages them to refer business opportunities to each other. In particular, network meetings are organized at a local meeting point once a week, usually between 6:30 am and 8:30 am before regular working hours, where the members share updates on their businesses and discuss potential business referrals. For example, a member doing construction work may have a client looking for architecture for another project. He or she could refer the client to the architecture in the chapter. A member operating a restaurant may know a guest who wants to buy a new car and would refer the guest to the car dealer in the chapter. It is worth mentioning that in the same chapter, each member does different business – though sometimes related – so that there is no direct competition for the same business referral, leading to a collaborative culture in the chapter. The network meetings allow the members to become familiar with each other's businesses and exchange timely business opportunities. Besides, members with more to discuss could schedule one-to-one meetings at other times and explore more opportunities in detail. To help the members integrate into the chapter and support their business growth, the business association provides training on how to present their businesses, network with other members, and make business referrals. Members are encouraged to bring visitors to the chapter's network meeting who are interested in knowing more about the business association and may join the

chapter as a new member.

The 87 chapters are managed by local directors who organize these activities and record the attendance and business referrals given and received by the members of the chapter. These records serve as unique and rich longitudinal data. We get access to the archival data and the profile of members and chapters from 2010 and 2022. In particular, our data covers 1) each member's personal and business profile, including the gender, membership status, business activities, and business sector; 2) the member's participation in network meetings, targeted one-to-one meetings, and training sessions; 3) the business referrals, including the number of business referrals a member gives to other members, the total revenues other members generate through these business referrals, and the number of business referrals a member receives from other members, 4) the number of visitors a member introduces to the chapter, and 5) the profile of the chapter, including the year of establishment, the time and location of the regular network meeting, the overall performance of the chapter evaluated by the business association.

Our full sample includes 1858 active individual members in the 87 Swiss chapters. There are 280 female members and 1578 male members doing business in 26 different sectors. We observe their networking behaviors and derived benefits from 2011 to 2022, which brings us to 7391 multi-year observations.

Table 1: Members by sector and by gender

	# Members	# Female	# Male	% Female
Architecture & house & garden	119	11	108	9%
Auto & motorbike	95	4	91	4%
Construction & crafts	500	31	469	6%
Consulting	19	5	14	26%
Computer & programming	78	0	78	0%
Food & drink	73	15	58	21%
Event & business service	19	10	9	53%
Specialist & retail	122	24	98	20%
Finance & insurance	168	20	148	12%
Health & wellness	67	26	41	39%
Manufacturing	7	1	6	14%
Real estate services	113	22	91	19%
Arts & entertainment	6	1	5	17%
Agriculture	3	0	3	0%
Organization & miscellaneous	5	0	5	0%
Human resources	57	20	37	35%
Personal services	15	5	10	33%
Legal & accounting	81	21	60	26%
Travel	9	2	7	22%
Repairs	2	0	2	0%
Security & investigations	28	1	27	4%
Sports & recreation	4	1	3	25%
Telecommunications	1	0	1	0%
Training & coaching	44	18	26	41%
Transport & shipping	12	1	11	8%
Advertising & marketing	211	41	170	19%
Total	1858	280	1578	15%

3.2. Variables

Referrals received

The dependent variable *referral received* is measured as the total number of business referrals the member received from all the others in the chapter in the focal year. It indicates the tangible benefits the member gained from the network.

Networking behaviors

We categorize members' networking behaviors into 1) network-deepening behaviors, by enhancing the interactions with one or more members in the network; 2) network-broadening behaviors, regarding introducing new members to the network; and 3) network-brokerage behaviors, namely connecting third parties to specific members in the network.

We consider three aspects of network-deepening behaviors. First, *participation in network meetings* is measured by the number of weekly network meetings organized by the chapter the member attended in a focal year. Second, *one-to-one meetings* shows the total number of one-to-one meetings the member had taken part in in the focal year. Third, *training* is measured as the percentage of the member's attendance in the total number of training sessions the business association provides in a focal year. All three variables show the member's active engagement, which enables them to connect better with other network members. While one-to-one meetings are targeted, where a member interacts with one another, participation in network meetings and training are untargeted, where a member interacts with all the other members. We look at one specific network-broadening behavior: *visitors*, measured as the number of visitors the member introduced to the network in the focal year. Two aspects of network-brokerage behaviors are included. *Referrals given* are measured by counting the number of business referrals the member gave to all the other members in the same chapter in the focal year. *Revenues given* are measured by the total revenues other

members generated through the business referrals given by the members in the focal year. Both variables capture *tertius iungens* behavior of a member between third parties and targeted members in the network. All the variables of networking behaviors are standardized (z-score, mean=0, standard deviation=1) and therefore comparable.

Other variables

Being interested in the role of member's gender and the sector of the business activities in the relationship between members' networking behaviors and benefits, we include the two variables. We code the *gender* dichotomously as 1 for male and 0 for female. *Sector* is coded as a categorical variable where each sector represents a category; we identify 26 sectors as shown in Table 1. Besides that, we include control variables at the individual level: *member tenure* is measured by the number of years since the member joined the chapter, and *newcomer* is coded as 1 for the first year and 0 otherwise. At the chapter level, we include the *chapter performance* evaluated by the business association every year, and we include the *chapter* as a categorical variable to control the differences between chapters. Since our observations cover the years from 2010 to 2022, we also include *year* as a categorical variable to control for the macro-level differences over time.

3.3. Analytical methods

Considering the nature of the longitudinal data where we observe individuals' networking behaviors and benefits over time, we adopt multilevel models to analyze the data in the main study. The time constitutes the first level and individuals constitutes the second level; we group the multi-year observations by individual and include the random effect of time in the models. To avoid the causality issue, we take the predictors of referrals received with one-year lag; in the other words, we observe the impact of networking behaviors in the year t on referrals received in the year $t+1$.

4. Results

Table 2 shows the descriptive statistics and correlations. We test our hypotheses 1 (a-c) employing multilevel models with referrals received ($t+1$) as the dependent variable and networking behaviors (t) as independent variables. Table 3 reports the results of the multilevel regression.

Table 2: Descriptive statistics and correlation matrix

	Mean	s.d.	1.	2.	3.	4.	5.
1. Referrals received	0.00	1.00					
2. Network meetings	0.00	1.00	0.3*				
3. One-to-one meetings	0.00	1.00	0.11*	0.32*			
4. Training	0.00	1.00	0.07*	0.42*	0.43*		
5. Referrals given	0.00	1.00	0.49*	0.37*	0.17*	0.12*	
6. Revenues given	0.00	1.00	0.03*	0.13*	0.1*	0.07*	0.17*
7. Visitor	0.00	1.00	0.09*	0.19*	0.3*	0.21*	0.14*
8. Gender	0.87	0.34	0.03*	0.03*	-0.1*	-0.1*	0.03*
9. Member tenure	2.53	2.78	0.18*	0.38*	0.01	0.08*	0.19*
10. Newcomer	0.24	0.42	-0.22*	-0.64*	-0.13*	-0.28*	-0.27*
11. Chapter performance	0.00	1.00	0.18*	0.05*	0.23*	0.09*	0.24*
	6.	7.	8.	9.	10.		
7. Visitor	0.09*						
8. Gender	0.05*	-0.07*					
9. Member tenure	0.12*	-0.01	0.04*				
10. Newcomer	-0.12*	-0.12	-0.05*	-0.47*			
11. Chapter performance	0.09*	0.07*	0.00	0.04*	-0.01		

*Note: N=5107; *p<0.05*

Model 0 reports the results of a null model including only the random effect of time where observations are grouped by individuals. The intraclass correlation (ICC) at 0.66 means that 66% of the total variance of the dependent variables – referrals received – is accounted for by the clustering and implies that multilevel models are more suitable for analyzing our data. Model 1 reports the results including the time-variant control variables at level 1 and time-invariant control variables at level 2. Model 2-7 adds the effect of networking behaviors separately and Model 8 includes all the six networking behavior variables. The results from Model 2-4 show a significant and positive correlation between referrals received and attendance in network meetings ($b=0.03, p<0.05$), one-to-one meetings ($b=0.03, p<0.05$), and training ($b=0.04, p<0.001$) respectively, indicating that members attending more networking activities tend to receive more business referrals in the second; they provide supports to H1(a). The results from Model 5-6 show a significant and positive association between referrals received and referrals given ($b=0.12, p<0.001$) and but an insignificant association with revenues given ($b=0.00, p>0.05$), meaning that members giving more business referrals to other members tend to receive more business referrals from the network in the second year, regardless the size the referrals. The results from Model 7 present a significant and positive relationship between referrals received and bringing visitors ($b=0.04, p<0.001$), indicating that members bringing more visitors to the business network tend to receive more business referrals in the second year, which support our H1(b). Comparing these results, we see that giving referrals plays a more important role in helping members receive referrals in the second year because Model 5 shows a better fit to the data (AIC=9903, Log-likelihood=-4689, both are lower than that of the other models) and a more significant coefficient (higher estimate and lower p-value than that of the other networking behavior variables). Results from Model 8 shows that when all the other networking behaviors are controlled, attending training ($b=0.03, p<0.05$), giving referrals ($b=0.12, p<0.001$), and bringing visitors ($b=0.03, p<0.001$) still have

a positive impact on receiving referrals.

We test our hypotheses 2 by grouping the members by gender and comparing their networking behaviors. Table 4 shows the summary of the statistics and we run t-test to compare the mean of the female sample and male sample. The results show that male members are more active in attending network meetings (mean=32.84, t-statistics=2.63, $p<0.01$), giving business referrals (mean=17.04, t-statistics=2.24, $p<0.05$), and giving revenues (mean=122278.5, t-statistics=6.98, $p<0.001$), while female members are more active in attending one-to-one meetings (mean=23.93, t-statistics=-7.50, $p<0.001$), training (mean=0.59, t-statistics=-8.66, $p<0.001$), and bringing visitors ($b=2.66$, t-statistics=-5.69, $p<0.001$). These results do not provide support to our hypothesis 2 which predicts that male members are more active in network-deepening and network-broadening behaviors. Instead, the results show that male and female members tend to adopt different networking behaviors and the distinction is significant.

To test our hypotheses 3, we extend the multilevel models we employ for hypotheses 1 by adding the interaction between gender and respective networking behaviors. The results are reported in Table 5. Model 12 shows that gender has a moderating effect on the relationship between giving referrals and receiving referrals (Referrals given X Gender: $b=0.09$, $p<0.01$). Figure 2 illustrates the moderating effect of gender. For male members, giving referrals leads to receiving more referrals than for female members. The results regarding referrals given do provide support for our hypotheses 3, which predict female members tend to benefit less from the network than their male peers when adopting the same active networking behaviors.

Table 3: Results of the multilevel analysis on referrals received

	Referrals received (t+1)								
	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-0.13*** (0.02)	0.40 (0.20)	0.39 (0.20)	0.42* (0.20)	0.39 (0.20)	0.37 (0.20)	0.40 (0.20)	0.37 (0.20)	0.35 (0.20)
Gender		-0.04 (0.05)	-0.04 (0.05)	-0.04 (0.05)	-0.03 (0.05)	-0.03 (0.05)	-0.04 (0.05)	-0.04 (0.05)	-0.02 (0.05)
Member tenure		0.02** (0.01)	0.02** (0.01)	0.03** (0.01)	0.03*** (0.01)	0.02** (0.01)	0.02** (0.01)	0.02** (0.01)	0.02** (0.01)
Newcomer		-0.06** (0.02)	-0.02 (0.03)	-0.05* (0.02)	-0.03 (0.02)	0.02 (0.02)	-0.06** (0.02)	-0.04* (0.02)	0.03 (0.03)
Chapter performance		0.19*** (0.00)	0.19*** (0.00)	0.19*** (0.00)	0.19*** (0.00)	0.17*** (0.00)	0.19*** (0.00)	0.19*** (0.00)	0.17*** (0.00)
<i>Networking behaviors</i>									
Network meetings			0.03* (0.01)						-0.01 (0.01)
One-to-one meetings				0.03* (0.01)					-0.01 (0.01)
Training					0.04*** (0.01)				0.03* (0.01)
Referrals given						0.12*** (0.01)			0.12*** (0.01)
Revenues given							0.00 (0.01)		-0.01 (0.01)
Visitor								0.04*** (0.01)	0.03*** (0.01)
<i>Random Effects</i>									
σ^2	0.29	0.24	0.24	0.24	0.24	0.23	0.24	0.24	0.23
τ_{00}	0.56 _{ID}	0.32 _{ID}	0.32 _{ID}	0.32 _{ID}	0.32 _{ID}	0.30 _{ID}	0.32 _{ID}	0.32 _{ID}	0.30 _{ID}
ICC	0.66	0.57	0.57	0.57	0.57	0.56	0.57	0.57	0.56
Marginal R ²	0.00	0.36	0.36	0.36	0.36	0.37	0.36	0.36	0.37
Conditional R ²	0.66	0.72	0.72	0.72	0.72	0.73	0.72	0.72	0.73
AIC	10893	10003	10006	10007	10000	9903	10012	9992	9931
log-Likelihood	-5441	-4746	-4743	-4743	-4740	-4689	-4746	-4735	-4680

Note: N=1497 groups (individuals), observations = 5107.

The standard deviations are reported in the parentheses * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Sector categories (#26), chapter categories (#87) and year categories (#23) are included but not reported.

Table 4: Networking behaviors by gender

	Female (Observations=969)		Male (Observations=6422)		T-test	More active
	Mean	s.d.	Mean	s.d.		
Network meetings	31.70	12.68	32.84	11.96	2.63**	Male
One-to-one meetings	23.93	21.02	18.59	18.17	-7.50***	Female
Training	0.59	0.36	0.49	0.35	-8.66***	Female
Referrals given	15.62	18.41	17.04	17.99	2.24*	Male
Revenues given	69901.3	189089.5	122278.5	362672.8	6.98***	Male
Visitor	2.66	3.92	1.90	3.47	-5.69***	Female

Note: in this table, the measures of networking behaviors are not standardized.
 * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Figure 2: Two-way interaction of gender and referrals given on referrals received

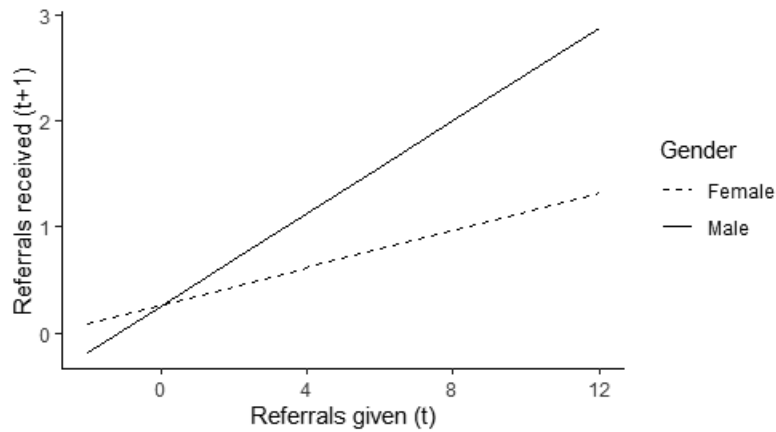


Table 5: Gender, networking behaviors, and benefits

	Referrals received (t+1)					
	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Intercept	0.81 *** (0.20)	0.85 *** (0.20)	0.83 *** (0.20)	0.79 *** (0.20)	0.84 *** (0.20)	0.81 *** (0.20)
Gender	-0.03 (0.05)	-0.03 (0.05)	-0.03 (0.05)	-0.02 (0.05)	-0.04 (0.05)	-0.04 (0.05)
Member tenure	0.02 ** (0.01)	0.03 ** (0.01)	0.03 *** (0.01)	0.02 ** (0.01)	0.02 ** (0.01)	0.02 ** (0.01)
Newcomer	-0.02 (0.03)	-0.05 * (0.02)	-0.03 (0.02)	0.02 (0.02)	-0.06 ** (0.02)	-0.04 * (0.02)
Chapter performance	0.19 *** (0.01)	0.19 *** (0.01)	0.19 *** (0.01)	0.17 *** (0.01)	0.19 *** (0.01)	0.19 *** (0.01)
<i>Networking behaviors</i>						
Network meeting	-0.01 (0.02)					
Network meeting X Gender	0.04 (0.01)					
One-to-one meeting		0.04 (0.03)				
One-to-one meeting X Gender		-0.01 (0.03)				
Training			0.05 (0.03)			
Training X Gender			-0.00 (0.03)			
Referrals given				0.04 (0.03)		
Referrals given X Gender				0.09 ** (0.03)		
Revenues given					0.02 (0.04)	
Revenues given X Gender					-0.02 (0.05)	
Visitor						0.01 (0.03)
Visitor X Gender						0.04 (0.03)
<i>Random Effects</i>						
σ^2	0.24	0.24	0.24	0.23	0.24	0.24
τ_{00}	0.32 _{ID}	0.32 _{ID}	0.32 _{ID}	0.30 _{ID}	0.32 _{ID}	0.32 _{ID}
ICC	0.57	0.57	0.57	0.56	0.57	0.57
Marginal R ²	0.356	0.356	0.356	0.372	0.355	0.357
Conditional R ²	0.724	0.723	0.724	0.727	0.724	0.725
AIC	10017	10021	10014	9908	10025	10004
log-Likelihood	-4741	-4743	-4740	-4684	-4746	-4734

Note: N=1497 groups (individuals), observations = 5107.

The standard deviations are reported in the parentheses * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Sector categories (#26), chapter categories (#87) and year categories (#23) are included but not reported.

5. Supplementary analysis

Observing the gendered networking behaviors, we conduct a supplementary analysis to explore the potential explanations for the association between gender, networking behaviors, and benefits. Business context plays a role in enabling and constraining individuals' networking behaviors (Hallen et al., 2020). Individuals are embedded in the relations and resources surrounding their business activities (Tasseli & Kilduff, 2021). To carry out network-broadening and network brokerage behaviors by introducing new members to network or connecting business contacts to existing members, individuals need to leverage their personal networks and identify suitable third parties; it is constrained by the resources and opportunities in the business context. For example, in some business sectors, individuals are more likely to know a large number of entrepreneurs who are interested in and suitable for getting connected to other entrepreneurs for potential resource exchanges (Hallen et al., 2020). Also, some sectors have a more cooperative culture where the *tertius iungens* behaviors are more effective (Kwon et al., 2020).

In the supplementary analysis, we categorize the business activities of each member into sectors and running regression of different networking behaviors on gender and sector categories. Table 6 in the Appendix reports the results of the regression. The results show that while male entrepreneurs are significantly associated with giving referrals, the correlation is no longer significant when sectors are controlled, indicating that male members' more active behaviors of giving business referrals is fully explained by the sectors of their business. Similarly, male entrepreneurs' significant association with attending network meetings and giving revenues is less significant when sectors are controlled, meaning that male members' activeness in these behaviors is partially explained by the sectors of their business.

6. Discussion

While the vast majority of network studies have focused on the impact of network structure and position on individual and organizational outcomes (e.g., Brennecke & Stoemmer, 2018; Kiazad et al., 2020; Patel & Terjesen 2011; Vissa & Chacar, 2009; Batjargal et al., 2013), we know much less about the interplay between organizational structure and networking behaviors (Tasseli & Kilduff, 2021; Tesseli et al., 2015), let alone how particular networking behaviors impact individual or organizational outcomes (e.g., Bensaou et al., 2014; Obstfeld, 2005).

Our findings demonstrate how networking behaviors impact network benefits while holding network structure constant. Our results allow us to tease out which types of networking behaviors impact these benefits in the context of a business networking organization. Our work shows how networking behaviors differ in their effectiveness in increasing networking benefits: While mere participation in networking events deepening the relations in the network grants benefits, it is less effective than giving referrals and bringing visitors which broaden the network and brokerage the unconnected contacts. It highlights the need for careful crafting and deliberateness in networking actions beyond participation. The more tangible contribution to the network a member makes, the more benefits he or she seems to derive, with the brokerage behaviors of giving referrals leading to the largest return in terms of receiving referrals from the network. We therefore observe the generalized reciprocity in the closed network of a business networking organization where the one giving favors to some members gets rewarded by others through reputation building (Baker & Bulkleyis, 2014).

Interestingly, we also find that these different networking behaviors are not gender neutral: While men engage more in network meeting participation and making referrals, females are more active in bringing visitors and deepening relationships with targeted members through one-to-one meetings and honing their skills through training. Further examining the

gendered nature of networking behaviors is beyond the scope of this paper. However, our supplementary analysis on the mediating role of business context provides a potential mechanism for explaining the gendered networking behaviors by considering the constraints of the broad structure of the business context, and further research can dive deeper in this direction. Based on the insights about gender differences in networking behaviors and attitudes (Greguletz et al., 2019; Brands et al., 2022; Woehler et al., 2021), we also suggest future research investigate different perceptions of networking behaviors of men and women (Brands et al., 2022; Tasseli et al., 2015).

Beyond the individual preferences for particular networking behaviors, we also find that the benefits derived from the same networking behaviors are gendered. While giving referrals is the most effective behavior to get benefits, women receive fewer business referrals than men even when they give as many referrals as men. It reveals that the disadvantages of female entrepreneurs in business networks cannot be fully compensated by their active networking behaviors. We thereby inform network research on different network benefits and mechanisms of achieving network benefits for disadvantaged groups (Woehler et al, 2021; Brands et al., 2022).

Overall, our study demonstrates how individual networking behaviors may directly impact network benefits. Based on our findings, we encourage entrepreneurs to behave actively in their business networks – beyond joining the networks. When possible, sharing resources and giving business referrals is the most beneficial behavior; the favors will be returned. Although the members share the mission to refer businesses to each other, getting better connected with other members through attending networking activities helps entrepreneurs build a positive citizenship reputation. Besides, it helps entrepreneurs understand each others' business activities and thereby enables them to introduce suitable businesses to each other. Besides introducing third parties through a business referral, entrepreneurs could also try to

include them in the business networks. With a larger business network, all the members can access broadened resources and would appreciate the introducer by giving more business referrals. We especially encourage female entrepreneurs to alleviate the concerns of instrumental networking since, in the membership-based business networks, all the members agree that the interactions are business-oriented. Seeing the challenges for female entrepreneurs, we draw the attention of the organizers and institutions to provide more support, such as training sessions to help them improve networking skills and female networking events.

References

- Abraham, M. (2020). Gender-role incongruity and audience-based gender bias: An examination of networking among entrepreneurs. *Administrative Science Quarterly*, 65(1), 151-180.
- Ahuja, G., Soda, G., & Zaheer, A. (2012). The genesis and dynamics of organizational networks. *Organization science*, 23(2), 434-448.
- Baker, W. E., & Bulkley, N. (2014). Paying it forward vs. rewarding reputation: Mechanisms of generalized reciprocity. *Organization science*, 25(5), 1493-1510.
- Batjargal, B. A. T., Hitt, M. A., Tsui, A. S., Arregle, J. L., Webb, J. W., & Miller, T. L. (2013). Institutional polycentrism, entrepreneurs' social networks, and new venture growth. *Academy of Management Journal*, 56(4), 1024-1049.
- Bensaou, B. M., Galunic, C., & Jonczyk-Sédès, C. (2014). Players and purists: Networking strategies and agency of service professionals. *Organization Science*, 25(1), 29-56.
- Borgatti, S. P., & Cross, R. (2003). A relational view of information seeking and learning in social networks. *Management science*, 49(4), 432-445.
- Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network analysis in the social sciences. *Science*, 323(5916), 892-895.
- Brands, R., Ertug, G., Fonti, F., & Tasselli, S. (2022). Theorizing Gender in Social Network Research: What We Do and What We Can Do Differently. *Academy of Management Annals*, forthcoming.
- Brennecke, J., & Stoemmer, N. (2018). The network-performance relationship in knowledge-intensive contexts – a meta-analysis and cross-level comparison. *Human Resource Management*, 57(1), 11-36.
- Burt, R. S. 1992. *Structural holes*. Cambridge, MA: Harvard University Press.
- Burt, R. S. (2001). Attachment, decay, and social network. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 22(6), 619-643.

- Burt, R. S., Kilduff, M., & Tasselli, S. (2013). Social network analysis: Foundations and frontiers on advantage. *Annual review of psychology*, *64*, 527-547.
- Burt, R. S., & Soda, G. (2017). Social origins of great strategies. *Strategy Science*, *2*(4), 226-233.
- Busch, C., & Barkema, H. (2021). From necessity to opportunity: Scaling bricolage across resource-constrained environments. *Strategic Management Journal*, *42*(4), 741-773.
- Carpenter, M. A., Li, M., & Jiang, H. (2012). Social network research in organizational contexts: A systematic review of methodological issues and choices. *Journal of management*, *38*(4), 1328-1361.
- Casciaro, T., Gino, F., & Kouchaki, M. (2014). The contaminating effects of building instrumental ties: How networking can make us feel dirty. *Administrative Science Quarterly*, *59*(4), 705-735.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, *94*, 95-120.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of management*, *31*(6), 874-900.
- Ebbers, J. J. (2014). Networking behavior and contracting relationships among entrepreneurs in business incubators. *Entrepreneurship Theory and Practice*, *38*(5), 1-23.
- Fang, R., Zhang, Z., & Shaw, J. D. (2021). Gender and social network brokerage: A meta-analysis and field investigation. *Journal of Applied Psychology*, *106*(11), 1630.
- Gerges-Yammine, R., Ter Wal, A. L., & Malhotra, N. (2020). How Entrepreneurs Navigate and Create Networking Arenas to Build Social Capital. *Academy of Management Proceedings*, *2020*(1), 19846.
- Giudici, A., Reinmoeller, P., & Ravasi, D. (2018). Open-system orchestration as a relational source of sensing capabilities: Evidence from a venture association. *Academy of Management Journal*, *61*(4), 1369-1402.
- Granovetter, M. S. (1973). The strength of weak ties. *American journal of sociology*, *78*(6), 1360-1380.
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American journal of sociology*, *91*(3), 481-510.
- Granovetter, M. (1992). Economic institutions as social constructions: a framework for analysis. *Acta sociologica*, *35*(1), 3-11.
- Greguletz, E., Diehl, M. R., & Kreutzer, K. (2019). Why women build less effective networks than men: The role of structural exclusion and personal hesitation. *Human Relations*, *72*(7), 1234-1261.
- Gulati, R., Nohria, N., & Zaheer, A. (2000). Strategic networks. *Strategic management journal*, *21*(3), 203-215.
- Hallen, B. L. (2008). The causes and consequences of the initial network positions of new organizations: From whom do entrepreneurs receive investments?. *Administrative Science Quarterly*, *53*(4), 685-718.
- Hallen, B. L., Davis, J. P., & Murray, A. (2020). Entrepreneurial network evolution: Explicating the structural localism and agentic network change distinction. *Academy of Management Annals*, *14*(2), 1067-1102.

- Hallen, B. L., & Eisenhardt, K. M. (2012). Catalyzing strategies and efficient tie formation: How entrepreneurial firms obtain investment ties. *Academy of Management Journal*, 55(1), 35-70.
- Hasan, S., & Koning, R. (2019). Prior ties and the limits of peer effects on startup team performance. *Strategic Management Journal*, 40(9), 1394-1416.
- Ho, V. T. & Pollack, J. M. (2014). Passion isn't always a good thing: Examining entrepreneurs' network centrality and financial performance with a dualistic model of passion. *Journal of Management Studies*, 51(3), 433-459.
- Hoang, H., & Antoncic, B. (2003). Network-based research in entrepreneurship: A critical review. *Journal of business venturing*, 18(2), 165-187.
- Jonczyk, C. D., Lee, Y. G., Galunic, C. D., & Bensaou, B. M. (2016). Relational changes during role transitions: The interplay of efficiency and cohesion. *Academy of Management Journal*, 59(3), 956-982.
- Kiazad, K., Kraimer, M. L., Seibert, S. E., & Sargent, L. (2020). Understanding organizational embeddedness and career success: Who and what you know. *Journal of Organizational Behavior*, 41(7), 678-693.
- Kwon, S. W., Rondi, E., Levin, D. Z., De Massis, A., & Brass, D. J. (2020). Network brokerage: An integrative review and future research agenda. *Journal of Management*, 46(6), 1092-1120.
- Klyver, K., & Arenius, P. (2022). Networking, social skills and launching a new business: A 3-year study of nascent entrepreneurs. *Entrepreneurship Theory and Practice*, 46(5), 1256-1283.
- Klyver, K., & Grant, S. (2010). Gender differences in entrepreneurial networking and participation. *International Journal of Gender and Entrepreneurship*.
- Luo, X. R., Mai, Y., & Ye, Z. (2023). When do close ties to service intermediaries lead to entrepreneurial improvisation?. *Strategic Entrepreneurship Journal*, forthcoming.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual review of sociology*, 27(1), 415-444.
- Milanov, H., Justo, R., & Bradley, S. W. (2015). Making the most of group relationships: The role of gender and boundary effects in microcredit groups. *Journal of Business Venturing*, 30(6), 822-838.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of management review*, 23(2), 242-266.
- Nai, J., Lin, Y., Kotha, R., & Vissa, B. (2022). A foot in the door: Field experiments on entrepreneurs' network activation strategies for investor referrals. *Strategic Management Journal*, 43(2), 323-339.
- Obstfeld, D. (2005). Social networks, the *tertius iungens* orientation, and involvement in innovation. *Administrative science quarterly*, 50(1), 100-130.
- Opper, S., & Burt, R. S. (2021). Social network and temporal myopia. *Academy of Management Journal*, 64(3), 741-771.
- Patel, P. C., & Terjesen, S. (2011). Complementary effects of network range and tie strength in enhancing transnational venture performance. *Strategic Entrepreneurship Journal*, 5(1), 58-80.

- Patriotta, G., & Siegel, D. (2019). The context of entrepreneurship. *Journal of Management Studies*, 56(6), 1194-1196.
- Pollack, J. M., Rutherford, M. W., Seers, A., Coy, A. E., & Hanson, S. (2016). Exploring entrepreneurs' social network ties: Quantity versus quality. *Journal of Business Venturing Insights*, 6, 28-35.
- Rudman, L. A., & Phelan, J. E. (2008). Backlash effects for disconfirming gender stereotypes in organizations. *Research in organizational behavior*, 28, 61-79.
- Soetanto, D., Huang, Q., & Jack, S. (2018). Obstacles, networking approaches and entrepreneurial network changes. *European Management Review*, 15(2), 171-189.
- Stam, E. (2010). Entrepreneurship, evolution and geography. In *The handbook of evolutionary economic geography*. Edward Elgar Publishing.
- Tasselli, S., & Kilduff, M. (2021). Network agency. *Academy of Management Annals*, 15(1), 68-110.
- Tasselli, S., Kilduff, M., & Menges, J. I. (2015). The microfoundations of organizational social networks: A review and an agenda for future research. *Journal of Management*, 41(5), 1361-1387.
- Uehara, E. S. (1995). Reciprocity reconsidered: Gouldner's moral norm of reciprocity and social support. *Journal of Social and Personal Relationships*, 12(4), 483-502.
- Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative science quarterly*, 35-67.
- Vissa, B. (2012). Agency in action: Entrepreneurs' networking style and initiation of economic exchange. *Organization Science*, 23(2), 492-510.
- Vissa, B., & Bhagavatula, S. (2012). The causes and consequences of churn in entrepreneurs' personal networks. *Strategic Entrepreneurship Journal*, 6(3), 273-289.
- Vissa, B., & Chacar, A. S. (2009). Leveraging ties: the contingent value of entrepreneurial teams' external advice networks on Indian software venture performance. *Strategic Management Journal*, 30(11), 1179-1191.
- Wang, D. J. (2020). When do return migrants become entrepreneurs? The role of global social networks and institutional distance. *Strategic Entrepreneurship Journal*, 14(2), 125-148.
- Woehler, M. L., Cullen-Lester, K. L., Porter, C. M., & Frear, K. A. (2021). Whether, how, and why networks influence men's and women's career success: Review and research agenda. *Journal of Management*, 47(1), 207-236.
- Zhang, L., & Guler, I. (2020). How to join the club: Patterns of embeddedness and the addition of new members to interorganizational collaborations. *Administrative Science Quarterly*, 65(1), 112-150.
- Zhang, C., Tan, J., & Tan, D. (2016). Fit by adaptation or fit by founding? A comparative study of existing and new entrepreneurial cohorts in China. *Strategic Management Journal*, 37(5), 911-931.

Appendix

Table 6: Gender, sector, and networking behaviors

	Network meeting		One-to-one meetings		Training	
	Model 15	Model 16	Model 17	Model 18	Model 19	Model 20
(Intercept)	-0.08 *	-0.17 ***	0.25 ***	0.14 **	0.26 ***	0.25 ***
Gender [male]	0.09 **	0.07 *	-0.29 ***	-0.18 ***	-0.30 ***	-0.28 ***
Sectors:						
Architecture & House & Garden		0.04		0.01		-0.02
Auto & Motorbike		0.22 ***		-0.05		0.01
Construction & Crafts		0.15 ***		-0.13 **		-0.06
Consulting		0.12		0.40 ***		0.10
Computer & Programming		0.16 *		0.03		-0.01
Food & Drink		0.17 *		-0.07		-0.06
Event & Business Service		-0.07		0.01		0.13
Specialist & Retail		0.05		0.11 *		0.12 *
Finance & Insurance		0.07		-0.01		0.01
Health & Wellness		0.12		0.34 ***		0.15 *
Manufacturing		-0.58 *		-0.21		0.18
Real Estate Services		-0.04		0.05		-0.10
Arts & Entertainment		-0.49		-0.17		-0.27
Agriculture		0.22		-0.14		0.17
Organization & Miscellaneous		-0.17		0.20		0.14
Human Resources		0.02		-0.19 **		-0.18 **
Personal Services		-0.06		-0.15		-0.28 *
Legal & Accounting		0.09		-0.18 **		-0.02
Travel		0.19		-0.19		-0.10
Repairs		-0.73 *		0.23		-0.25
Security & Investigations		-0.10		0.17		0.28 *
Sports & Recreation		-0.09		-0.69 **		-0.39
Telecommunications		0.62 *		-0.45		0.20
Training & Coaching		0.01		0.68 ***		-0.10
Transport & Shipping		-0.09		0.12		0.28 *
R ² adjusted	0.00	0.01	0.01	0.04	0.01	0.02
F-statistics	7.53**	2.54***	69.69***	12.68***	76.88***	5.39***

*Note: observations = 7391; * p<0.05; ** p<0.01; *** p<0.001.*

Table 6: Gender, sector, and networking behaviors (continued)

	Referrals given		Revenue given		Visitors	
	Model 21	Model 22	Model 23	Model 24	Model 25	Model 26
(Intercept)	-0.07 *	-0.06	-0.13 ***	-0.16 ***	0.19 ***	0.15 **
Gender [male]	0.08 *	0.01	0.15 ***	0.10 **	-0.21 ***	-0.14 ***
Sectors:						
Architecture & House & Garden		-0.08		0.43 ***		-0.12 *
Auto & Motorbike		0.15 **		0.02		-0.05
Construction & Crafts		0.30 ***		0.18 ***		-0.10 *
Consulting		0.34 **		0.09		0.21
Computer & Programming		-0.16 *		-0.14 *		0.05
Food & Drink		0.09		-0.10		-0.23 ***
Event & Business Service		-0.19		-0.06		-0.09
Specialist & Retail		0.09		-0.06		-0.03
Finance & Insurance		-0.21 ***		0.04		-0.00
Health & Wellness		-0.03		-0.11		0.11
Manufacturing		-0.60 *		-0.10		-0.33
Real Estate Services		0.09		0.39 ***		0.00
Arts & Entertainment		-0.59 *		-0.20		-0.08
Agriculture		0.85 *		0.04		0.59
Organization & Miscellaneous		0.47 *		-0.02		0.18
Human Resources		-0.06		-0.04		0.07
Personal Services		-0.04		-0.12		-0.36 **
Legal & Accounting		-0.21 ***		0.10		-0.13 *
Travel		-0.12		-0.11		-0.11
Repairs		0.27		-0.12		-0.37
Security & Investigations		-0.09		0.07		0.06
Sports & Recreation		-0.22		-0.11		-0.34
Telecommunications		0.48		0.05		0.33
Training & Coaching		-0.14		-0.11		0.74 ***
Transport & Shipping		-0.34 **		0.08		-0.08
R ² / R ² adjusted	0.00	0.04	0.00	0.03	0.01	0.03
F-statistics	5.20*	11.73***	19.79***	8.63***	38.65***	8.14***

Note: observations = 7391; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Article 3: Take a relational stance: How social network studies can advance strategic human resource management

Abstract

Strategically managing human resources has increasingly become a source of competitive advantage for organizations. Social network studies have gained traction in the field of strategic human resources management (SHRM) as a means of revealing otherwise hidden relational patterns and dynamics among employees, managers, and organizations. This conceptual work explore and discusses the role of social networks in SHRM. Based on a systematic literature review on social network studies in the context of SHRM, it offers insights on 1) how social networks contribute to strategic outcomes of SHRM, including performance, knowledge management and innovation, adaptation and implementation of organizational change, interunit integration and international operations, and diversity, equity, and inclusion in organizations, and 2) how human resource (HR) practices support SHRM outcomes through influencing and shaping social networks in organizations. Integrating ongoing conversations in social networks and SHRM research, we propose a conceptual framework at the intersection to model the multiple interactions among HR practices, social networks, and SHRM outcomes, as well as the contingencies that may affect these interactions. We provide a research agenda focusing on the role of social networks in SHRM process, considering contingencies when leveraging social networks, and integrating various perspectives in social network theory into SHRM, such as network dynamics, network agency, and network cognition.

Keywords: Strategic human resource management, social networks, HR practices, competitive advantages

1. Introduction

Strategic human resource management (SHRM) – “the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals” (Wright & McMahan, 1992: 298) – represents one of the most important domains of management research (Lengnick-Hall, Lengnick-Hall, Andrade, & Drake, 2009), which focuses on explaining how people-focused policies and practices inform the achievement of strategic goals and ultimately organizational success (Wright & Ulrich, 2017). Human resource (HR) policies and practices which are aligned to strategic goals ensure that the workforce has the ability, motivation, and opportunity to support the organization's objectives (Jiang, Lepak, Hu, & Baer, 2012). Alignment of HR practices with organizational strategy is achieved not only through practices intended by design, but also the way that they are implemented within the organization (Nishii & Wright, 2008; Woodrow & Guest, 2014; Wright & Nishii, 2013). Because HR practices are designed and implemented by multiple actors in organizations (Hewett & Shantz, 2021), value creation arising from SHRM ultimately takes place in a web of social networks within and outside organizations.

Organizations consist of human resources and human activities that are created, developed, and constrained by formal and informal relations and networks among individuals within or across organizations (Jacobsen, Stea, & Soda, 2022; Carpenter, Li, & Jiang, 2012; Kilduff & Brass 2010). Studying these relations and networks provides an understanding of social and organizational phenomena from a more holistic and relational rather than an isolated view (Marin & Wellman, 2011). Social network studies (SNS) in management research focuses on empirically and theoretically explaining social networks in organizational contexts, their antecedents, development, characteristics, and effects on individuals, teams, and organizational outcomes (see e.g., Kilduff & Brass, 2010). This stream of work is distinct from research which focuses mainly on individual (e.g., race, gender, personality) or organizational (e.g., size,

industry) attributes and can thus supplement the study of SHRM (Brass, 1995). A focus on organizational networks reveals previously hidden mechanisms which can be a barrier to successful performance and implementation of managerial practices (Subramaniam & Youndt, 2005; Kaše, Paauwe, & Zupan, 2009; Kim, Su, & Wright, 2018). Adopting a relationship-oriented approach to SHRM can also be an alternative and potentially complementary approach to supporting employee capabilities, motivation, and behaviors (Kehoe & Collins, 2017).

The importance and relevance of the relations and interactions between individuals in organizations have long been recognized in the field of SHRM. In his early work, Evans (1986) considered “equity and human relations” as one of the four key strategic outcomes for SHRM, which contributes to the internal environment of organizations and affects collective action. Leana and Van Buren (1999) proposed that organizational social capital plays an important role in SHRM. Defining organizational social capital as “a resource reflecting the character of social relations within the organization” (Leana & Van Buren, 1999: 538), they suggested that employment practices facilitating stable relationships, strong norms, and specified roles improve organizational social capital, which further leads to organizational outcomes. With an introduction to social networks, Brass (1995) suggested that a social network perspective shall be applied to human resource management (HRM) topics, because individuals influence each other through networks. More recently, Hollenbeck and Jamieson (2015) provide a comprehensive introduction of social network analysis (SNA) as an analytical method to SHRM. They argue that conducting SNA offers a better understanding of human capital and supports the field of SHRM by revealing “complex relationships that are driving organizations” (Hollenbeck & Jamieson, 2015: 370). Soltis, Brass, and Lepak (2018) provide an excellent overview of the value of SNA for typical HR activities such as recruitment and selection, training and development, performance management, as well as HR systems, which offers implications for how to manage employees for competitive advantage. Lengnick-Hall,

Lengnick-Hall, Neely, and Bonner (2021) argued for an explicit integration of social capital and social network factors into strategic HRM frameworks. While there has been growing interest in understanding the role of social networks in the context SHRM research, this body of work has grown piecemeal, and we lack a holistic picture, especially when involving the dynamic interactions between social network and SHRM topics.

This paper systematically reviews and analyses how SNS offers different opportunities for SHRM regarding how HR practices support the achievement of strategic goals. The main purpose of this paper is to examine and discuss the multiple roles of social networks in the relationship between HR practices and SHRM outcome. First, social networks play a role as an antecedent of various strategic outcomes for SHRM (Cullen-Lester, Porter, Trainer, Solanelles, & Carter, 2021). Second, social networks – because of their dynamic nature (Ahuja, Soda, & Zaheer, 2012) – are influenced by HR practices. This aspect, if a strategic focus of the HR practices is not employed, is less relevant to SHRM and thus lies out of the scope of this review. Nonetheless, Bannya, Bainbridge, and Chan-Serafin (2023) provided a systematic review on HR practices and interpersonal relationships, and Methot, Rosado-Solomon, and Allen (2018) proposed a set of network-modifying HR practices focusing on how HR practices can be designed to change the composition, configuration, and content of networks. Third, HR practices influence social networks and thus contribute to organizational outcomes (e.g., Leana & Van Buren, 1999), where social networks play a role as a mediator between HR practices and SHRM outcomes. Considering the multiple roles of social networks, we focus in this review on three questions: *1) How do social networks affect strategic outcomes of SHRM? 2) How do HR practices support SHRM outcomes through influencing and shaping social networks in organizations? and 3) What are the other roles social networks play in SHRM?*

We address these questions by a systematic review of empirical research as well as theoretical works applying SNS to SHRM. We identified and included 318 relevant articles,

among which 63 articles are of high relevance. We examine how the three topics – social networks, SHRM outcomes, and HR practices – and their relationships are studied. First, we follow the SHRM literature (e.g., Evans, 1986; Wright & McMahan, 1992; Lengnick-Hall & Lengnick-Hall, 2003) to identify five areas of SHRM outcomes and categorize these articles accordingly: 1) organizational performance, 2) knowledge management and innovation, 3) adaptation and implementation of organizational change, 4) interunit integration and international operations, and 5) diversity, equity, and inclusion in organizations. Second, we examine what aspects of social networks have been studied in these articles. We identify and summarize the content (i.e., types of relation and network; Shipilov, Gulati, Kilduff, Li & Tsai, 2014; Kilduff & Brass, 2010; Granovetter, 1973) and structure (i.e., structural patterns and constructs; Kilduff & Brass, 2010; Burt, 1992; Granovetter, 1985) of networks studied in the reviewed articles. Following the ongoing conversation in the social network literature on network cognition, focusing on individuals' subjective perception of their and others' relationships and networks around them (Brands, 2013; Byron & Landis, 2020), network dynamics, regarding the evolution, development, and change of networks over time (Chen, Mehra, Tasselli, & Borgatti, 2022; Jacobsen et al., 2022), and network agency, highlighting the active role of purposive individuals in shaping their networks through deliberate networking behaviors and strategies (Tasselli & Kilduff, 2021, Tasselli, Kilduff, & Menges, 2015), we further examine how these aspects have been studied or discussed in the reviewed articles. Third, for the articles studying the strategic aspects HR practices, we identify which types of HR practices or systems are studied and whether they have a specific focus on the relationship-oriented HR practices or systems (e.g., Kehoe & Collins, 2017; Methot et al., 2018), which are designed to shape networks.

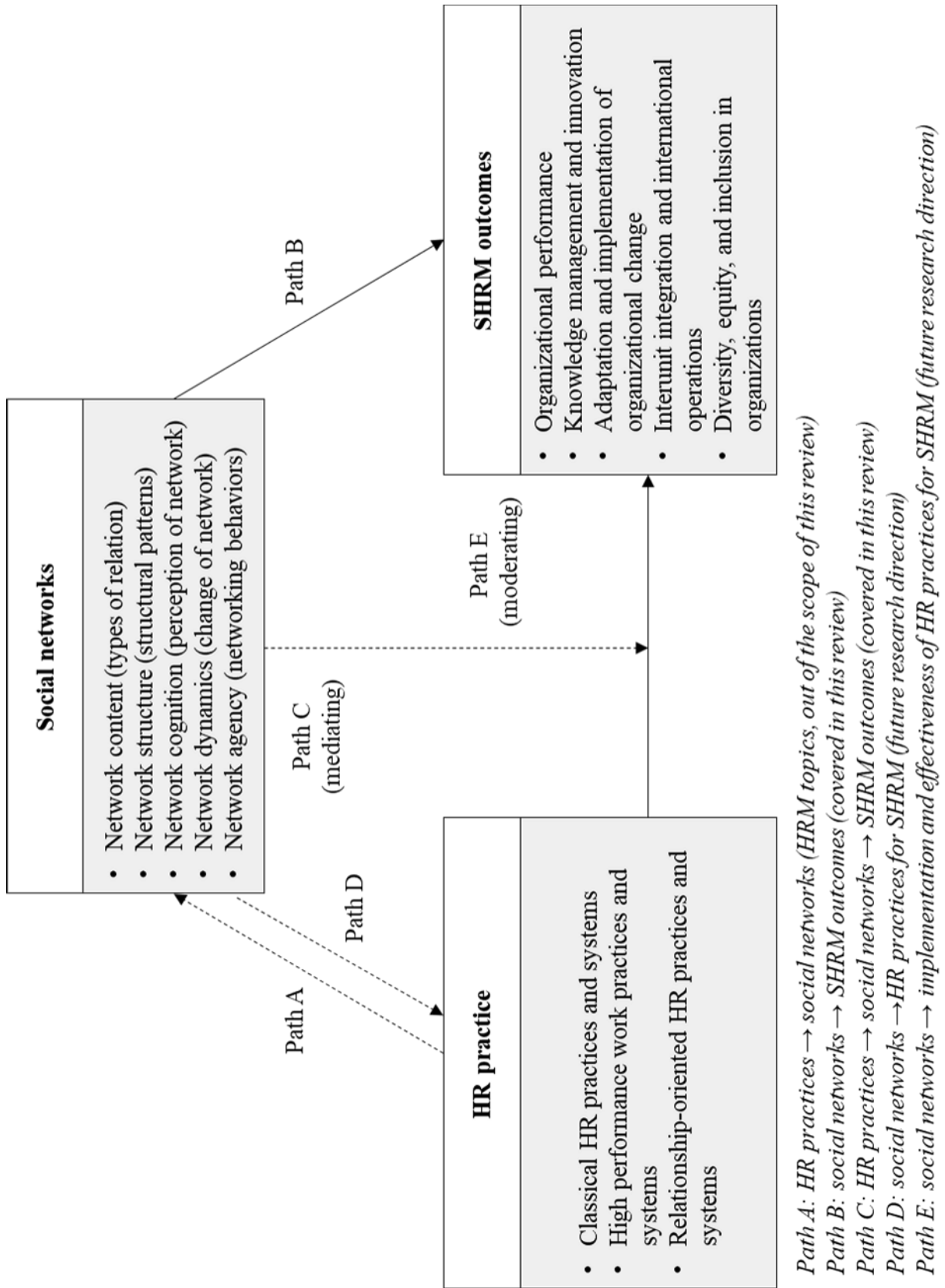
The findings of the review allow me to identify how HR strategies and practices may facilitate or hinder networks to effectively support the strategic goals of organizations. In turn,

this enables the identification of critical social network issues related to organizational efforts regarding how organizations can leverage their human resources and their relationships to achieve competitive advantage. Based on the review of the literature, we propose a conceptual framework at the intersection to model the multiple interactions among HR practices, social networks, and SHRM outcomes, as well as the contingencies that may affect these interactions, as shown in Figure 1. We suggest some directions for future research at the intersection between SNS and SHRM. We argue that there is a need to delve deeper into the process of SHRM and explore the dynamic interactions between social networks and the designed, implemented, perceived HR practices for SHRM (Hewett & Shantz, 2021; Woodrow & Guest, 2014). We recognize that HR practices are not static but evolve in response to organizational changes, societal shifts, and technological advancements (Ahlstrom, Arregle, Hitt, Qian, Ma, & Faems, 2020). Likewise, social networks are dynamic and continuously evolving entities (Jacobsen et al., 2022). We also discuss how integrating the ongoing conversations of some network topics – such as network cognition, network dynamics, and network agency – can advance SHRM literature.

This paper contributes to literature in three ways. First, the comprehensive overview of recent work on social networks in the field of SHRM provides a better understanding of how SNS contribute to SHRM research. It provides insights into how social networks influence SHRM outcomes and how HR practices shape and influence networks for achieving strategic goals. Second, based on the multiple roles social networks can play in SHRM, we propose a conceptual framework at the intersection between social networks and SHRM to model the multiple interactions among HR practices, social networks, and SHRM outcomes, as well as the contingencies that may affect these interactions. Third, integrating the ongoing conversations in social networks and SHRM research, we propose a research agenda and highlight the potential benefit of integrating various aspects of social network, such as network

dynamics, network agency, and network cognition into SHRM research. The dynamic nature of organizational networks provides the premise to explore how individuals as well as HR practices can play a role in shaping networks. An increasing number of SNS have started to explore how individuals actively adopt networking behaviors and strategies to build their networks for advantages (Tasselli & Kilduff, 2021; Hallen, Davis, & Murray, 2020). For example, some individuals are highly active in connecting to specific targets while others are passive and get connected to random people around them (Bensaou, Galunic, & Jonczyk-Sedes, 2014). Understanding why some individuals are more active in networking and how their behaviors affect networks in organizations informs SHRM on how HR practices could encourage employees to network. Besides, to understand how HR professionals might intervene to change networks and adjust them to the organization's needs, we suggest the need for more action research. Individuals' perception of relationships and networks can differ from the actual ones (Brands, 2013; Byron & Landis, 2020). Since individuals are jointly involved in the implementation of HR practices (Hewett & Shantz, 2021), we suggest that understanding the impact of the difference between network perception and actual networks help organizations and their HR managers to better implement management practices for strategic goals.

Figure 1: Conceptual framework at the intersection between social networks and SHRM



2. Methods

This study evaluates SNS in the context of SHRM based on a systematic literature review on empirical and theoretical works in this area. The focus is on scientific publications found in the international English-speaking academic outlets. Thus, we are interested in identifying the state of the art of SNS in relation to SHRM and providing recommendations for future research in this field. To examine *where* and *how* social networks are studied in SHRM, we review work on both social networks and HRM as a broader field across wide range of disciplines and theoretical traditions.

2.1. Data collection

To prepare this article, we conducted a systematic literature review and adopted the following steps to identify our review sample (Tranfield, Denyer, & Smart, 2003). First, we prepared a list of search terms and identified key publications to carry out a primary literature search. We searched Business Source Premier for articles published in the top management journals (included in the FT 50 journal list) and leading HRM journals that include a combination of search terms in relation to social networks (“network”, “networking”, or “social capital”) AND strategic human resource management (“human resource”, “human resource management”, “strategic human resource management”). The following top peer-reviewed journals in general management: 1) *Academy of Management Journal*, 2) *Academy of Management Review*, 3) *Administrative Science Quarterly*, 4) *Harvard Business Review*, 5) *Human Relations*, 6) *Human Resource Management*, 7) *Journal of Applied Psychology*, 8) *Journal of Management*, 9) *Journal of Management Studies*, 10) *Management Science*, 11) *Organization Science*, 12) *Organizational Studies*, 13) *Sloan Management Review*, and 14) *Strategic Management Journal*, and the following leading HRM journals: 15) *Human Resource Management Journal*, 16) *Human Resource Management Review*, and 17) *Personnel Psychology*. While social network theory has been long exploited by scholars in management

and organizational studies, Brass (1995) was one of the first few scholars pointing to the advantages from applying a social network lens to study HRM. Therefore, our sample covers the period 1995 to 2022. This search was performed for any part of the article and yielded 3134 matches. Although this search leads to a larger sample of articles including a lot of non-relevant ones, we could avoid missing relevant papers.

Second, we screened the full text and excluded the non-relevant articles. Our exclusions criteria were the following: 1) If the search terms only appeared in references or footnotes; 2) If the search terms were mentioned only once in the discussion or introduction; or 3) If the term “network” referred to some other concept than social network (e.g., nomological network), the article was excluded.

Third, we reviewed the full text to assess its relevance for the broad scope of our review. Our inclusion criteria were the following: 1) Social capital or social networks should be studied in the organizational contexts or generate implications to management; 2) The SNS should focus on or provides implications to interpersonal relations and networks, where actors include top managers, line managers, and employees; 3) The articles should study or provide insights on HRM. Applying these exclusion and inclusion criteria reduced the sample to 318 papers.

2.2. Data analysis

We systematically reviewed and summarized the 318 articles following four steps. First, we summarized the sample articles: 1) research focus, 2) research question, 3) research background, 4) research methods, 5) research context for empirical studies, 6) findings, 7) theoretical implications, and 8) practical implications.

Second, we evaluated the relevance of each article to the three themes: social networks, SHRM outcomes, and HR practices. see Table 2 for an overview. In terms of relevance to social networks, we classified research on organizational networks (e.g., network structure and position, individual’s networking behaviors and strategies) as high relevance, study of network

related elements (e.g., social capital, interactions, and exchanges between employees) as medium relevance, and discussions of social networks from only a theoretical perspective as low relevance. To assess relevance to SHRM outcomes, we considered investigation of strategic outcomes of SHRM (e.g., organizational performance, knowledge management and innovation, adaptation and implementation of organizational change, interunit integration and international operations, and diversity, equity and inclusion in organizations) as high relevance, investigation of a SHRM related issue or generation of relevant implications for SHRM as medium relevance, and general discussion about a SHRM related issue without relevant findings or focus on individual level outcomes as low relevance. We also identified whether HR practices have been studied or discussed in the articles. Combining all the three aspects, we classify five levels of relevance: 1) high (23 studies), 2) medium-to-high (40 studies), 3) medium (39 studies), 4) low-to-medium (122 studies), low (94 studies), as summarized in Table 1. In the Results section, we focus on the 63 studies categorized as medium-to-high and high relevance; we consider that the remaining categories either do not study organizational networks or do not focus on SHRM topics. Nonetheless, some of these articles provide relevant insights for future research and will be discussed in the Discussion section.

Third, we analyzed what aspects of the three themes are studied. Following the SHRM literature (e.g., Evans, 1986; Wright & McMahan, 1992; Lengnick-Hall & Lengnick-Hall, 2003), we classified the reviewed articles into the five SHRM outcomes: 1) organizational performance, 2) knowledge management and innovation, 3) adaptation and implementation of organizational change, 4) interunit integration and international operations, and 5) diversity, equity and inclusion in organizations, as summarized in Table 2 for an overview. The Results session is structured by this categorization.

Table 1: Classification framework for reviewed articles

Relevance	Definition	Count	Example articles
High	Addressing a central SHRM issue by studying organizational networks	23	Collins & Clark (2003) Fu (2015) Gittell, Seidner, & Wimbush (2010)
Medium-to-high	Addressing a central SHRM issue by studying a network related element in the organization OR addressing a SHRM related issue by studying organizational networks	40	Friedmnan & Holtom (2002) Kaše, Paauwe, & Zupan (2009) Song, Fang, Wang, & Shi (2020)
Medium	Addressing a SHRM related issue by studying a network related element in the organization	39	Abrahamson & Rosenkopf (1997) Centola & Lord (2018) Perry-Smith & Shalley (2014)
Low-to-medium	Addressing a SHRM related issue by discussing social network as a theoretical perspective OR discussing a SHRM topic as a general theme by studying a network related element in the organization	122	Ahuja, Galletta, & Carley (2003) Gubbins & Garavan (2016) Kim, Su, & Wright (2018)
Low	Discussing a SHRM topic as a general theme by discussing social network as a theoretical perspective	94	Adler & Kwon (2002) Burt (2007) Van Iddekinge, Arnold, Frieder, & Roth (2019)

Table 2: Social network studies in SHRM topics

SHRM topics	Highly relevant reviewed articles
Organizational performance	Andrews (2010), Buller & McEvoy (2012) ⁺ , Collins & Clark (2003)*, Evans & Davis (2005)* ⁺ , Fonti & Maoret (2016), Gittell, Seidner, and Wimbush (2010)*, Ho & Pollack (2014), Kehoe & Collins, 2017*, Leana & Van Buren (1999)* ⁺ , McEvily, Jaffee, & Tortoriello (2012), Park, Grosser, Roebuck & Mathieu (2020) ⁺ , Shaw, Duffy, Johnson, & Lockhart (2005), Song, Fang, Wang, & Shi (2020), Zaheer & Soda (2009)
Knowledge management and innovation	Boussebaa (2009), Fu (2015)*, Grigoriou & Rothaermel (2014), Heavey, Simsel, & Fox (2015), Jiang & Liu (2015)* ⁺ , Kase, Paauwe, & Zupan (2009)*, Nahapiet & Ghoshal (1998) ⁺ , Pillemer & Rothbard (2018) ⁺ , Reagans & McEvily (2003), Smith, Collins, & Clark (2005), Soda, Stea, and Pederson, 2019; Tortoriello, McEvily, & Krackhardt (2014), Wei, Zheng, & Zhang (2011), Yamao, Cieri, & Hutchings (2009)*, Zhao, Anand, & Mitchell (2005),
Adaptation and implementation of organizational change	Battilana & Casciaro (2012), Battilana & Casciaro (2013), Centola & Lord (2018), Gargiulo & Benassi (2000), Kim, Oh, & Swaminathan (2006) ⁺ , Lengnick-Hall, Beck, & Lengnick-Hall (2011)* ⁺ , Pickering & King (1995) ⁺ , Soenen, Melkonian, & Ambrose (2017), Vardaman, Amis, Dyson, Wright, & Van de Graaff Randolph, (2012), Wu & Kane (2021)*, Wylie, Sturdy, & Wright (2014)*
Interunit integration and international operations	Bozkurt & Mohr (2011)*, Espedal, Gooderham, & Stensaker (2013)*, Farh, Bartol, Shapiro, & Shin, (2010) ⁺ , Gray, Bunderson, Boumgarden, & Bechara (2019), Guler & Guillen (2010), Hendry (1996) ⁺ , Kostova & Roth (2003) ⁺ , Levy, Lee, Jonsen, & Peiperl (2019) ⁺ , Mao and Shen (2015) ⁺ , Neeley & Reiche (2022), Pedersen, Soda and Stea (2019); Schotter, Mudambi, Doz, & Gaur (2017) ⁺ , Taylor (2007) ⁺ , Zhao, Anand, & Mitchell (2005)
Diversity, equity, and inclusion in organizations	Belliveau (2005), Bower (2019), De Klerk & Verreynne (2017), Friedman & Holtom (2002), Georgiadou & Syed (2021), Greguletz, Diehl, & Kreutzer (2019), Khat tab, Van Knippenberg, Pieterse, & Hernandez (2020), Leicht & Marx (1997), Lyness & Thompson (2000), Thomas (2001), Woehler, Cullen-Lester, Porter and Frear (2020), Uzzi (2019), Wu & Kane (2021)*

*Note: * articles empirically study or theoretically include the investigation of specific HR practices. ⁺ articles study social networks in SHRM theoretically.*

For social networks, we first summarized the network content and network structure studied in each article. For the former, we specified which type of relationship is studied, such as friendship, advice seeking and giving, and collaboration, as summarized in Table 3. For the latter, we identified network level (i.e., node, dyad, whole network) and the specific network constructs studied for the empirical papers. For example, network constructs at node level indicate the actor's position in the network (e.g., centrality, brokerage, structural equivalence), network constructs at the dyadic level indicate tie characteristics among the actors connected (e.g., identified by tie strength or multiplexity), and network constructs at the network level reflect the overall network structure (e.g., based on network size, density, or cohesion), as summarized in the Table 4. We then further identified which theoretical perspectives on networks were adopted in each article, regarding the mechanisms through which social networks play a role in organizations. Besides the *structural perspective* and the *relational perspective*, which are most widely adopted in SNS (Kilduff & Brass, 2010), the current conversation in the social network literature has been increasingly adopting and highlighting the *cognitive perspective* (Brands, 2013), the *dynamic perspective* (Jacobsen et al., 2022; Chen et al., 2022), the *agency perspective* (Tasselli & Kilduff, 2021). For example, some qualitative studies and case studies in the sample articles allowed us to identify some networking behaviors and strategies adopted by network actors, as summarized also in Table 4. Regarding HR practices, we distinguish between the general HR practice and systems from the relationship-oriented HR practices and systems (Kehoe & Collins, 2017; Method et al., 2018).

Fourth, we identified how the interaction of social networks, SHRM outcomes, and HR practices was studied in each sample article, namely to which path(s) in the framework the article contributed and advanced our knowledge.

Table 3: Types of relations (ties) studied in SHRM

Types of relation	Description	Example articles
Work relation	When one individual works in the same team or organization with the other	Li, Li, Li, & Li (2020) Zaheer & Soda (2009)
Collaboration	When one individual works / worked on the same project with the other	Grigoriou & Rothaermel (2014) Paruchuri & Eisenman (2012)
Communication	When one individual has regular / frequent contact with the other	Uzzi (2019) Kaše, Paauwe, & Zupan (2009)
Friendship	When one individual considers the other as a friend	Song, Fang, Wang, & Shi (2020) Reagans & McEvily (2003)
Information	When one individual share information with the other	Gray, Bunderson, Boumgarden, & Bechara (2019)
Advice	When one individual seeks advice from / gives advice to the other	Wei, Zheng & Zhang (2011) Vardaman, Amis, Dyson, Wright, & Van de Graaff Randolph (2012)
<i>Types of ties</i>		
Boundary spanning tie	Ties between individuals across boundaries (e.g., of teams / organizations / countries)	Tortoriello, Reagans, & McEvily (2012)
Homophilous tie	Ties between individuals in same race / gender / nationality	Belliveau (2005) Mollica, Gray, & Trevino (2003)
Negative tie	When one individual considers the other as a difficult or uncooperative co-worker	Merluzzi (2017)
Dissonant tie	A simultaneously positive and negative ties to a colleague	Brennecke (2020)

Table 4: Network constructs and networking behaviors studied in SHRM

Network constructs	Description	Example articles
<i>Node level constructs</i>		
Degree Centrality	Measured by the number of the node’s direct ties to others (Freeman, 1979)	Oliver & Montgomery (2008) Vardaman, Amis, Dyson, Wright, & Van de Graaff Randolph (2012)
Betweenness centrality	Measured by the number of shortest paths between other nodes through the node (Freeman, 1979)	Oliver & Montgomery (2008)
Closeness centrality	Measured by the average length of the shortest path between the node and the others in the network (Freeman, 1979).	Hansen (2002)
Structural hole	Reflecting network gaps between nodes in the network, measured by the ratio of non-redundant contacts to total contacts for the node (Burt, 1992)	Kumar & Zaheer (2019) Paruchuri & Eisenman (2012) Zaheer & Soda (2009)
Structural equivalence	Reflecting the extent to which two individuals occupy the same network position	Reagans & McEvily (2003) Wei, Zheng & Zhang (2011)
<i>Dyadic level constructs</i>		
Tie strength	Reflecting the strength of a tie between two nodes, measured by the frequency of the interaction, the duration of the relation, or the emotional closeness	Heavey, Simsel, & Fox (2015) Smith, Collins, & Clark (2005) Tortoriello, Reagans, & McEvily (2012)
Simmelian ties	A simmelian tie exists among three (or more) nodes when all of them are reciprocally connected (Krackhardt, 1998)	Vardaman, Taylor, Allen, Gondo, & Amis (2015)
Multiplexity	The extent to which two nodes are connected by multiple ties simultaneously	Song, Fang, Wang, & Shi (2020)

Table 4: Network constructs and networking behaviors studied in SHRM (continued)

Network constructs	Description	Example articles
<i>Network level constructs</i>		
Network size	Measured by the total number of the nodes in the network	Belliveau (2005) Collins & Clark (2003) Heavey, Simsel, & Fox (2015)
Network density	Measured by the proportion of existing ties in a network to the total number of possible ties	Song, Fang, Wang, & Shi (2020) Wei, Zheng & Zhang (2011) Reagans & McEvily (2003)
Network diversity	Reflecting the diverse function / nationality of the nodes in the network	Gong, Kim, & Liu (2019) Perry-Smith & Shalley (2014) Thomas (2001)
Network transitivity	Reflecting the tendency of the nodes to cluster	Oliver & Montgomery (2008)
Network stability	Reflecting the extent to which the composition of the network remains unchanged from one time period to the next	Kumar & Zaheer (2019)
Networking behaviors and strategies		Example articles
Inheritance networking: working with retiring partners Rainmaking networking: developing new clients		Briscoe & von Nordenflycht (2014)
Boundary-spanning networking: connecting to others across the boundary (e.g., in different unit / organization / country)		Bower (2019)

3. Results from SNS in the context of SHRM

The literature review examines how social networks play a role in SHRM. In this section, we provide a summary of the existing SNS in the context of SHRM and discuss the implications of these results. The section is structure according to the five SHRM topics: 1) organizational performance, 2) knowledge management and innovation, 3) adaptation and implementation of organizational change, 4) interunit integration and international operations, and 5) diversity, equity, and inclusion in organizations. In each topic, we address how the role of social networks have been studied and which interactions among social networks, SHRM outcomes, and HR practices have been investigated.

3.1. HR practices, social networks, and organizational performance

Organizational performance is one of the ultimate strategic goals for an organization and considered as a crucial outcome of SHRM (Evans, 1986). The reviewed articles in this section center on how social networks play a role in SHRM through influencing organizational performance. There are 14 reviewed articles studying the relationship between social networks and organizational performance, among which, five also look at HR practices and systems, including high-performance working system and network-oriented HR practices. Ten of them are empirical papers and four are theoretical. Regarding the social network, nine studies focus on network structure, five studies highlight network content, three studies adopt a network dynamic perspective, and only one study looks at networking behaviors.

In their study on top management team networks, Collins and Clark (2003) found that top managers' internal and external networks' size, range, and tie strength were positively associated with firm performance. Additionally, their study showed that top managers' networking behaviors, such as mentoring and feedback giving, are important actions to translate the advantages of network structures into performance outcomes. Specifically, the authors found that networking behaviors mediate the positive relationship between top

management team networks (size, range, and tie strength) and firm sales and stock price. They further found that network-building HR practices, such as training, performance assessment, and rewards designed to motivate top managers to build their networks, do help enlarge, extend, and strengthen the networks. In line with these findings, Song, Fang, Wang, and Shi's (2020) study on the multiplex network of the top management team (i.e., consisting of both leadership ties and friendship ties) found that the density of top management team's multiplex network had a positive effect on performance through improved management team cohesion. Ho & Pollack (2014) studied business networks in the US and found that managers with high out-degree centrality in the business network generated higher business income. McEvily, Jaffee, and Tortoriello (2012) show that bridging ties can have cumulative and long-lasting effects. In their study of partners in law firms they found the imprinting effect of ties formed in the early career stages were critical and had a long-lasting positive effect on the focal law firm growth rates even after the partner had left the firm.

Supporting and consulting leaders is one main task of SHRM (Lengnick-Hall et. al., 2021). The above analysis highlights that better performance is linked to the top management team (TMT) with strong and cohesive internal networks, wide external networks, positions in networks with structural holes which grant access to multiple different connections, information, and insights. While HR practices may be able to intervene in top executives' networks to only a limited extent, HR professionals can develop activities that shape these networks. Internal efforts to increase trust and cohesiveness and encourage development of multiplex ties are essential for the creation of dense TMT networks; HR could actively foster development of multiplex ties in diverse TMT through provision of training opportunities and encouragement of cross-unit projects and team working (Collins & Clark, 2003). HR could also support TMT engagement in external networks by highlighting the benefits for organizational performance and developing incentives to encourage networking activities out

of the organization (Collins & Clark, 2003).

At the team level, Zaheer and Soda (2009) studied the network structure of TV production work teams and found that teams spanning structural holes show superior performance in terms of greater viewership. Adopting a dynamic lens, they further found that structural holes spanned by teams result from the team's position in the network in the past; they higher centrality and more structural holes a team had in the past, the more structural holes it would have (Zaheer & Soda, 2009). Park, Grosser, Roebuck & Mathieu (2020)'s recent review paper systematically examined the SNS in the context of work teams, summarizing how various within-team-, and between-team-level network constructs affect team and organizational performance. In the light of the positive effects of within-team and between-team networks, organizations should invest in work related and social activities connecting employees in the same team and different teams and promoting formal and informal relations among employees, team members and across hierarchical levels. At the unit level, Kehoe and Collins (2017) studied HR systems of 128 units in a large knowledge-intensive firm and found that adopting relationship-oriented HR system has a positive impact on unit performance through enhanced knowledge exchanges within and across units. The relationship-oriented HR practices include "training and feedback on professional network development, frequent in- and out-of-work professional and social functions, and formal mechanisms enabling employees to share information, progress, and feedback with one another" (Kehoe & Collins, 2017: 1222).

Focusing on social capital and its implications on organizations, Nahapiet and Ghoshal (1998) suggested three dimensions of social capital: 1) structural dimension, including network ties, network configuration, and appropriable organization, 2) relational dimension, referring to trust, norms, obligations, and identification, and 3) cognitive dimension, regarding shared code and language and shared narratives. Following this categorization, Andrews (2010)'s study on organizations in the public sector showed that manager's perception of organization's

relational and cognitive dimensions of social capital are positively related to organizational performance, and organizational structure has complex and contradictory effects on the relationship between each dimension of social capital and organizational performance. Leana and Van Buren (1999) proposed that a set of relationship-enhancing HR practices, which are designed to facilitate stable relationships, strong norms, and specified roles, can improve organizational social capital and thus generating benefits for organizations. Buller and McEvoy (2012) conducted a literature review and proposed a theoretical framework connecting organization's strategy, HRM, and performance, considering the mediating role of human capital and social capital. They suggested that the alignment of HR practices with an organization's strategy generates human capital and social capital, which contributes to organizational performance (Buller & McEvoy, 2012). On the contrary, empirical evidence showed that losing social capital leads to worsened performance, especially when an organization's size of social capital is low; such curvilinear relationship is stronger when the firm's turnover rate is low (Shaw, Duffy, Johnson, & Lockhart, 2005).

Following Arthur (1994)'s early work on HR systems, a group of HRM scholars (e.g., Huselid, 1995; Becker & Gerhart, 1996; Posthuma, Campion, Masimova, & Campion, 2017) started to focus on high-performance working system (HPWS) and its impact on organizational performance, which contributes as a stream of SHRM (Lengnick-Hall et al., 2009). Evans and Davis (2005) explored the role of organizations' internal social structure in the relationship between HPWS and organizational performance in their theoretical work. They proposed a conceptual framework focusing on the mediating role of internal social structure; they argued that HPWS – as well as each category of HR practices – positively influence the internal social structure by facilitating bridging network ties, generalized norms of reciprocity, shared mental models, role making, and organizational citizenship behavior, and further affect organization's financial and sustainable performance (Evans & Davis, 2005). Gittell, Seidner, and Wimbush

(2010) proposed a relational model of HPWS. In their empirical study of patient care in hospitals, they found that HPWS improve organizational performance by enhancing relationships among employees, such as frequent communication and knowledge sharing (Gittell et al., 2010)

3.2. HR practices, social networks, and knowledge management and organizational innovation

Actual and potential resources are embedded within, available through, and derived from social networks (Adler & Kwon, 2002). Through them knowledge transfer and innovation capabilities can be coordinated and assisted through organizational networks. This section focuses on how social networks support knowledge transfer and innovative capabilities, and how HR practices can support or hinder the knowledge and innovation management efforts through facilitating relationship building and organizational social capital. There are 15 highly relevant reviewed articles studying the relationship between social networks and knowledge management and organizational innovation, among which, three also look at HR practices and systems, including high-performance working system and relationship-oriented HR practices. Three of them are theoretical papers and 12 are empirical. Regarding the social network, 11 studies focus on network structure or network position, four studies highlight network content, but none of the studies looks at network dynamics.

Social networks of managers, employees, and knowledge workers within an organization influence individuals' behaviors and affect their knowledge sharing and acquiring, which is crucial for organization's innovative performance. In their theoretical paper exploring the role of social capital in creating organizational advantages, Nahapiet and Ghoshal (1998) argued that structural, cognitive, and relational dimensions of social capital facilitate exchanges and enables combination of intellectual capital, defined as "the knowledge and knowing capability of a social collectivity, such as an organization" (Nahapiet & Ghoshal,

1998: 245). Heavey, Simsel, and Fox's (2015) empirical study on technology firms showed that the extensiveness of top managers' internal and external networks, measured by tie strength, has a positive effect on organizational ambidexterity, allowing organizations to explore and exploit knowledge simultaneously. Smith, Collins, and Clark (2005) found that the numbers of contacts that the firm's top managers and knowledge workers have within the firm and the strength of these ties have a direct impact on the firm's knowledge creation capabilities and indirect effects on the firm's innovation activity. In a study of the collaborative networks of inventors in global pharmaceutical firms, Grigoriou and Rothaermel (2014) identify integrators who have high-density collaborative networks as opposed to connectors who tend to occupy brokerage or spanning roles. They found that firms with either more integrators or more connectors show more and better innovation outputs derived from their access to other integrators and connectors. They also found that if the integrator or connector is a star inventor with multiple patents, the firm benefits even more (Grigoriou & Rothaermel, 2014).

Having access to a closed network with diverse knowledge increases the individual potential to become an innovation catalyst supporting, facilitating, and promoting knowledge sharing between colleagues (Tortoriello, McEvily, & Krackhardt, 2014). Empirical evidence from a large chemical company showed that occupying a brokerage position enhances an individual's knowledge acquisition when his or her network is less collaborative, while taking a closed position enhances his or her knowledge acquisition when the network is more collaborative (Soda, Stea, & Pederson, 2019). Reagans and McEvily (2003) studied the friendship and advice networks of employees in an R&D firm and showed that tie strength, social cohesion, and network range ease knowledge transfer among colleagues. Wei, Zheng, and Zhang (2011) studied employees' advice networks and found that the structural equivalence between knowledge seeker and knowledge provider has a positive effect on knowledge transfer while the relational distance between them has a negative effect. They

found also that team network density and learning culture had a moderating effect, which implies that HR practices that contribute to a learning-oriented culture and connect team members (e.g., through informal socialization opportunities, formal assignments, and team building events) encourage knowledge transfer within the organization (Wei et al., 2011). While the majority of the articles look at the positive side different types and patterns of networks have on organizational knowledge management and innovation, networks may also have drawbacks. Pillemer and Rothbard (2018) discussed the dark sides of friendship relations at workplace and proposed that they may inhibit intra-organizational knowledge sharing due to the identity-based cliques within an organization where the interactions between cliques are limited. It suggests that HR professionals should be aware of the risks of employees' forming network cliques when encouraging employees to build networks and implies the importance for HR managers to understand the network structure of employees. HR practices should be designed to foster interaction across formal groups and informal network cliques (Pillemer & Rothbard, 2018).

Kaše and colleagues (2009) examined the relationship between various relationship-facilitating HR practices, interpersonal relations among co-workers, and intrafirm knowledge transfer. In their study of knowledge-intensive firms, they found that both work design and training and development HR practices – which are designed for facilitating relationship building – promote interpersonal relations among co-workers and enhance knowledge transfer within the firm (Kaše et al., 2009). Empirical evidence from a study of professional service firms also shows that the firm's relational routines, such as regular networking activities, promote relational coordination regarding project-related communication between the firm's employees and managers, and enhance the firm's knowledge management capability and innovation performance (Fu, 2015). In their conceptual work, Jiang & Liu (2015) investigated how the HPWS affect knowledge transfer and organizational innovation through enhancing

social capital. They proposed that HPWS practices, such as staffing, self-managed teams, decentralized decision making, training, flexible work assignments, communication, and compensation, enhance the structural, relational, and cognitive dimensions of intra-organizational social capital, and thus have positive impact on intra-organizational knowledge transfer and organizational innovation (Jiang & Liu, 2015).

Knowledge transfer is less frequent between than within units (Tortoriello, Reagans, & McEvily, 2012), and close relationship and networks of employees in different units eases knowledge exchanges within organizations across units. Zhao, Anand, and Mitchell's (2005) multiple case study of international joint ventures involving Chinese and non-Chinese companies identifies mobility of multiple skilled individuals from the members of their domestic partners' networks and the creation of relationships with foreign partners facilitated international knowledge inflows. However, they found that mobility of a single individual involved in the domestic partner's network limited the international JV's absorption of foreign knowledge. In their examination of multinational enterprises (MNE) foreign subsidiaries, Yamao, Cieri, and Hutchings (2009) found that the subsidiary's HR configuration, specifically its development and collaboration practices played an important role in headquarters-subsidiary and cross-subsidiary knowledge transfer through relationships among employees in the MNE's subsidiaries, and knowledge transfer from the headquarters to subsidiaries.

Overall, we conclude that tie strength, network cohesion, and network range foster intra-organizational knowledge transfer within and between organizational units. HR practices encourage collaboration across diverse teams and units and that fostering individual, team, and organizational development could contribute to the formation of diverse weak and strong ties with internal and external organizational actors and thus facilitate knowledge transfer and enhance organizational innovation.

3.3. HR practices, social networks, and organizational change

The firm's overall strategy and ability to overcome the challenges it faces ensure its survival in the competitive and evolving business environment (By, 2005). All organizations need to make necessary changes to meet these challenges, increase their capabilities, and ensure long-term survival (Stouten, Rousseau, & De Cremer, 2018; Jones, Hesterly, Fladmoe-Lindquist, & Borgatti, 1998). HR professionals can support change either by acting as agents of change consulting top manager or help creating conditions for the implementation of strategic change (Baran, Filipkowski, & Stockwell, 2019; Den Hertog, Van Iterson, & Mari, 2010). This section focuses on how social networks can contribute to SHRM by considering and making use of individual networks among corporate change agents and supporting their change initiatives. There are 11 reviewed articles studying this topic, among which, three also look at HR practices and systems, including digital collaboration system. Three of them are theoretical papers and eight are empirical. Regarding the social network, five studies focus on network structure or network position, one study highlights the quality of relationship, and one studies adopt a network dynamic perspective though at the inter-organizational level.

Change agency has been part of SHRM activities for a long time, and Wylie, Sturdy, and Wright (2014) underscored the importance for HR practitioners to focus on and work with change agency. Individual employees' network can be utilized to facilitate organizational change by encouraging individual adoption of the change (Battilana & Casciaro, 2012). A study of an Italian subsidiary of a multinational computer manufacturer showed that the lower the cohesiveness of the manager's communication network, the higher that manager's ability to adapt to changes (Gargiulo & Benassi, 2000). Similarly, employees in a central position in the organizational network will be more likely to interpret change as controllable (Vardaman, Amis, Dyson, Wright, & Van de Graaff Randolph, 2012). It has been shown also that both the internal network and weak social ties to external networks (e.g., membership of a professional

or occupational community) influence acceptance of change (Pickering & King, 1995). We know also that the quality of organizational members' relationships affects their readiness to accept change and the level of their trust in their peers (Soenen, Melkonian, & Ambrose, 2017).

We know that a change agent's professional networks and their relationships to potential endorsers and resisters of the change initiative affect the likelihood of a successful organizational change process (Battilina & Casciaro, 2012; 2013). Through in-depth case studies, Battilina and Casciaro (2012) focused on the structure of change agents' networks and found that structural holes in their networks affect the initiation and adoption of changes. In particular, the effects are contingent on the divergence of change; fewer structural holes in change agents' networks help the adoption of divergent changes but hinder the adoption of less divergent changes (Battilina & Casciaro, 2012). Battilina and Casciaro (2013) further explored how change agents can leverage their strong ties to support the change and found that change agents are more likely to coopt potential "fence-sitters", with whom they have strong ties, and this cooptation helps a smoother adaption of change. Regarding strong ties with potential resisters, the effects on their adoption of change also depends on the divergence of the change; when a change leads to little divergence of practices, such strong ties play an effective role of influencing potential resisters to adopt the change (Battilina & Casciaro, 2013).

Centola and Lord (2018) highlighted the importance of the network context for the success rate of adopting major initiatives due to the influence on behaviors individuals have on each other through networks. In an empirical study on an information technology firm which was introducing digital transactive memory systems, Wu and Kane (2021) found that junior and female employees, and those with greater social capital, benefit more from adopting the digital tool. Digital collaboration tools help employees get connected to others and get access to richer resources, and thus can be considered as network-enhancing tools for HR managers to initiate and support. It also implies that some employees tend to accept and welcome

technical changes than others, who are likely to be the change agency, and HR manager can help identify these employees with a better understanding of not only their demographic characteristics but also their network characteristics (Wu & Kane, 2021). It is important that the selection of change agents considers the networks which the change agent potentially could tap into to support and accelerate the change. This means that subject expertise or simple availability on their own are insufficient for appointment to a key position in a process of organizational transformation. HR professionals can provide a mapping of the networks which include potential change agents. This can be achieved via interviews with internal candidates for inclusion in a change project or more informally in collaboration with the line function to ensure that embeddedness in appropriate networks is considered.

Kim, Oh, and Swaminathan (2006) argued that inertia is stronger in older and larger organizations as well as organizations with long-term or multiplex networks where network ties are less likely to change. Lengnick-Hall, Beck, and Lengnick-Hall (2011) suggest that the way that HR practices are configured (e.g., as cross-functional work assignments and development opportunities) contributes to the development of communication competencies and acquisition of and adaptations to learning skills by core employees which in aggregate at the organizational level increase the organization's resilience. Analyzing and understanding organizational networks including their strengths and weaknesses, provides insights into the processes of change and adaptation which enable more successful organizational adaptation.

3.4. HR practices, social networks, and interunit integration and international operations

Adapting to a new competitive landscape may require a different strategy including development and management of diverse business activities as well as operations abroad. Cuypers, Ertug, Cantwell, Zaheer, and Kilduff's (2020) recent review paper provides a good overview of how SNS advances our knowledge on international business. SHRM research in

this area focuses on managing human resources across business units of large enterprises and the overseas operations of MNEs, as well as the mobilities and movements of people around the world (Lengnick-Hall et al., 2009; McMahan, Bell, & Virick, 1998). The development and integration of international social capital in the organization and among its employees is recognized increasingly as a major SHRM responsibility (Lengnick-Hall & Lengnick-Hall, 2003). This section centers on how an organization's international networks and expatriate employees increase their organizational capabilities and how HR practitioners can influence these international networks to enhance company performance. There are 13 reviewed articles studying this topic, among which seven are theoretical papers.

Organizational networks matter for firms operating across borders. For instance, home country organizational networks can matter for the internationalization process (Guler & Guillen, 2010). International networks provide MNEs with several benefits: 1) a newly internationalizing firm benefits from its social capital and network position since its learning processes and information exchanges depend on personal interaction (Hendry, 1996); 2) Interactions among members of the foreign operation's networks and the MNE's network can facilitate the diffusion of R&D capabilities among international joint venture partners (Zhao et al., 2005); 3) A high level of social capital generally and structure-based social capital in particular are needed by MNEs to coordinate, integrate, and exchange resources among their foreign subsidiaries (Kostova & Roth, 2003). Gray, Bunderson, Boumgarden, and Bechara (2019) summarized two major ways for promoting cross-unit ties which HR managers can support: first is to bring together individuals from different business units by setting up formal cross-unit work groups which forms structural links across units; second is to support the cross-unit mobility for employees where they act as boundary spanners to connect the units they work sequentially.

Boundary spanning is critical for the coordination and management of MNEs'

international operations (Bozkurt & Mohr, 2011; Kostova & Roth, 2003). Schotter, Mudambi, Doz, and Gaur (2017) argue that boundary spanning should address “both bridging between groups as well as leveraging the diversity inherent in groups” (Schotter et al., 2017: 413). By connecting different groups, boundary spanners enable coupling and ensure focus alongside a certain level of independence and flexibility (Schotter et al., 2017). Boundary spanning is critical for MNEs to connect and co-ordinate subsidiaries and external stakeholders but the structure of the MNE can facilitate or impede these activities. Boundary spanning can be fostered or hindered by the MNE structure (Schotter et al., 2017). Taylor (2007) argued that social capital plays a critical role in supporting the implementation of global strategy for MNCs and highlighted the potential challenges for boundary spanners with different cultural background when building structural, relational, and cognitive social capital in organizations. For example, cultural similarity between the units – such as individualism versus collectivism – makes it easier for boundary spanners to enhance social capital while cultural differences hinder cross-unit exchanges (Taylor, 2007). Boundary spanners that choose not to share the advantages of their social capital can impede coordination and knowledge transfer (Kostova & Roth, 2003). It suggests that HR managers take into consideration the cultural differences between units and subsidiaries all over the world when selecting and supporting expatriates and international employees. Pedersen, Soda, and Stea (2019) stress the role of HR activities to promote active networking behaviors to develop boundary-spanning ties. They find that employees are more likely to be boundary spanners if they have mandates with a global impact, high levels of expertise, and a collaborative orientation in their networking behaviors. Such boundary-spanning ties (i.e., connecting with other people across subsidiaries and borders) are relevant for multinational enterprises aiming to mobilize knowledge transfer among subsidiaries.

Expatriates frequently act as boundary spanners between MNEs and their foreign units. The context, motivations, and needs of expatriates are likely to shape their networking behavior and creation of social capital (Farh, Bartol, Shapiro, & Shin, 2010). Social capital is as important as network relationships, and the position of global leaders in their network can act to create “downward deference” (Neeley & Reiche, 2022). MNE workplaces often include employees from different culture backgrounds which requires managers to consider social capital from several perspectives. For example, Mao and Shen (2015) argued that strong home-culture ties in expatriates’ networks lead to global disintegration while strong host-culture ties and network diversity facilitates cultural integration, which helps expatriation adjustment. Focusing on cosmopolitans, Levy, Lee, Jonsen, & Peiperl (2019)’s theoretical work suggested that cosmopolitans’ cultural embeddedness and cultural engagement play an important role in shaping their transcultural brokerage process. They proposed a typology of cosmopolitan brokers and categorize them into global connectors, global integrators, rooted operators, and rooted coordinators, where each type of cosmopolitans face different opportunities and challenges in transnational networking (Levy, Lee, Jonsen, & Peiperl, 2019).

HR managers can shape network developments. For example, global leadership development programs can enable acquisition of bridging and bonding social capital among managers in MNEs (Espedal, Gooderham, & Stensaker, 2013). Boundary spanning is essential to allow MNEs to coordinate and ensure exchanges among international units, and social networking allows HR managers to contribute actively to boundary spanning activities.

3.5. HR practices, social networks, and diversity, equity, and inclusion

Including and leveraging diverse workforce has increasingly become a crucial strategic topic for organizations (Lengnick-Hall & Lengnick-Hall, 2003). This section discusses the results for the types of networks and network dynamics that prevent women and minorities from achieving the same career advancement and performance outcomes as white males. This

is of concern to the individuals involved and should be prioritized by SHRM in order to understand the barriers to equal career achievement and full exploitation of individual talent. This section summarizes how networks of diverse employees have direct or indirect implications for an organization's competitive advantages. There are 13 reviewed articles studying this topic, among which, three are theoretical works. Regarding social networks, nine studies focus on networking behaviors and strategies. While most of the articles generate practical implications for HR functions, few of them explicitly examine the effect of HR practices or interventions.

A large body of HRM research is focused on diversity. Georgiadou & Syed (2021) argued that informal social networks play a crucial role in gender diversity and relevant management practices. A network perspective uncovers dynamics other than those involved in the dyadic employee-supervisor relationship faced by marginalized employees during the recruitment, socialization, and development processes. For example, a study of the recruitment process showed that more female than male professionals are likely to recommend job seekers for gender-typical jobs and both female and male job seekers are referred by the opposite genders to hierarchically lower positions (Leicht & Marx, 1997). Network composition matters for both job offers and salary levels. In her study of the gender composition of female advice networks, Belliveau (2005) found that women with a higher proportion of men in their advice network tended to get more job offers and higher salary offers. These studies indicate that networking works differently for and benefits employees from diverse backgrounds. We would suggest that when designing recruitment activities, policies, and processes organizations should consider the diversity of recruitment committee members and their network structures. At the same time HR professionals should also consider the networks in which candidates and new employees are already embedded and how they allow the organization to tap into distant, possibly unconnected information and knowledge.

Networks and networking play an important role in career advancement, but marginalized employees tend to face more barriers in building and enhancing networks and thus are disadvantaged (Woehler, Cullen-Lester, Porter, & Frear, 2021). For example, Lyness and Thompson (2000) show that exclusion of females from networks has its roots in the lack of mentoring provided to female executives and exclusion from informal networking activities including by other women in situations that are perceived as risky. This results in minorities being structurally more marginalized and less central in their networks and having less power in their social networks and fewer opportunities for career advancement. Briscoe and Von Nordenflycht (2014) show that female and racial minority lawyers have to adopt different networking strategies in order to be as successful as their male counterparts. In their study of legal professionals working towards partnership positions in law firms, they show that white male lawyers achieve promotion and additional clients through close working with partners close to retirement age (Briscoe & Von Nordenflycht, 2014) whereas female lawyers and racial minority lawyers are required to search for clients who are new to the firm. Other explanations for differences in career advancement white males and females and minorities range from women's lower self-confidence (De Klerk & Verreynne, 2017), a mix of structural exclusion from powerful homophile networks and personal hesitation to exploit social ties (Greguletz, Diehl, & Kreutzer, 2019).

Research shows also that the networks of successful minority employees differ significantly from the networks of less successful minority employees. Bower (2019) found that successful female networkers act as boundary spanners in their networks with people across different functions, units, and geographics, while less successful ones usually feel uncomfortable to carry out deliberate networking strategies and to span the boundaries. Thomas (2001) stresses that the networks of the former group are more diverse on average compared to those of other minority employees. Minorities benefit from network heterogeneity in terms of

functional diversity, tenure variety (seniors, colleagues, and juniors), and location variety (people within the immediate department, in other departments, and outside the organization), and demographics in terms of race, gender, age, and culture. Thomas's findings resonate with a study by Uzzi (2019) which highlights that compared to men, women need additional network requirements to becoming a successful leader. While for men, being in the top quartile of network centrality predicts promotion to a more senior job and higher pay, women need both a high degree of network centrality which grants access to a greater variety of information and inputs and an inner circle to support them. Specifically, the combination of a female-dominated inner circle which provides critical gender-related information and a non-overlapping extended network which affords access to more information resulted in jobs with 2.5 times higher authority, responsibility, and pay compared to counterparts who lacked these assets (Uzzi, 2019).

Overall, research shows that female and male professionals differ in the returns from their network activity on career success, and this depends on the composition of their networks in terms of the proportion of same gender contacts and the number of male and family contacts in their networks (Woehler et al., 2021). In the case of similar networks, male employees benefit more than women from network openness, their contacts' status, and the proportion of male contacts in their networks (Woehler et al., 2021).

Including network methods in work on HRM enables a better understanding of the dynamics underlying how a specific cultural context shapes relationships and networks. Network data capturing relationship attributes such as duration, frequency, intensity, and multiplexity provide a multifaceted map of a manager's social context. Network SNS can identify the differences in these dynamics across national cultures. For example, in a study of culture and co-worker interaction patterns in American, Chinese, German, and Spanish divisions of a global retail bank, Khattab, Van Knippenberg, Pieterse, and Hernandez (2020)

employed a network perspective to examine the slower career advancement of minorities; other research at the intersection between gender or race and networks provides valuable insights into the hidden dynamics that might block or foster career advancement for minorities. Friedman and Holtom (2002) suggest that organizations encourage and support minority employee network groups to integrate minority newcomers and retain minority talent. Marginalized employees joining minority employee network groups tend to exhibit lower turnover due to their better social embeddedness, mentoring level, and social inclusion (Friedman & Holtom, 2002).

Organizations keen to foster diversity, equality, and inclusion should be aware that members of marginalized groups tend to connect with different individuals and benefit less from their networks, and that networking patterns vary across cultures. Implementing mentoring networks and networking events can increase inclusion. Training in how network benefits vary and on what network features minority employees should focus to achieve career progress and knowledge sharing and creativity would benefit organizational performance.

A focus on network perceptions would allow HR professionals to grasp the deeply gendered understandings which result in uneven career outcomes between genders. We know that attributions we assign to charismatic leaders differ between women and men, but they are also facilitated by their network positions (Brands, Menges, & Kilduff, 2015). Brands and Kilduff (2014) show that female brokerage roles in organizational friendship networks tend to be overlooked which might explain why female compared to male brokers do not derive the same benefits from a brokerage position (Bertola & Jonczyk, 2021).

4. Discussion and future research directions for SNS in the context of SHRM

Our systematic review of the literature on networks in the field of SHRM provides insights into how SNS advances the field of SHRM, regarding 1) how social networks contribute to strategic outcomes of SHRM, including performance, knowledge management

and innovation, adaptation and implementation of organizational change, interunit integration and international operations, and diversity, equity, and inclusion in organizations, and 2) how HR practices support SHRM outcomes through influencing and shape social networks in organizations. We show that social networks in organizational contexts can improve organizational performance, foster knowledge transfer and innovation, support organizational change and adaptation processes, and help integrate international operations, and leverage diverse workforces in an inclusive organization.

Strong and cohesive internal networks (Song et al., 2020), wide external networks (Collins & Clark, 2003), and structural hole positions of top managers and employees show positive impacts on organizational performance (McEvily et al., 2012). To maintain competitiveness in a dynamic business environment, organizations need to adapt, be innovative, and implement changes, including the development of their international operations. Closer relational distance (Wei et al., 2011; Hansen, 2002), strong ties, and cohesive networks (Reagans & McEvily, 2003; Tortoriello et al., 2012) are beneficial for knowledge sharing and innovation capabilities (Tsai & Ghoshal, 1998) to enable organizational differentiation. Managers' and knowledge workers' relational positioning (Smith et al., 2005) influence organization's ability to innovate. Organizational networks can support change processes including through careful consideration of the networks of change agents (Baran et al., 2019; Den Hertog et al., 2001). Organizational networks matter for the internationalization process (Guler & Guillen, 2010) and to coordinate, integrate, and exchange resources among international units (Kostova & Roth, 2003). Boundary spanning is especially critical as it can support the coordination and management of MNEs' international operations (Bozkurt & Mohr, 2011; Schotter et al., 2017). The reviewed studies show women and minorities benefit less from their networks and networking activities (Checchi et al., 2019; Leicht & Marx, 1997; Woehler et al., 2021). A better understanding of the network dynamics faced by diverse

employees can support a better exploitation of their human capital. Various HR practices and systems, including HPWS and relationship- and network-oriented HR practices, show effectively positive impact on shaping networks and enhancing organizational social capital (e.g., Collins & Clark, 2003; Evans & Davis, 2005; Kaše et al., 2009).

Based on the results from reviewed articles and ongoing conversations in social networks and SHRM research, we identified four avenues for future research on social networks in the field of SHRM, as shown in Figure 2. The future research topics direct the attention to 1) the role of social networks in the process of SHRM, 2) the role of context for the effectiveness of social networks in SHRM, 3) the relevance of network dynamics and network agency networks in SHRM, and 4) the impact of the perception of social networks on SHRM outcomes.

4.1. Role of social networks in the process of SHRM

An effective SHRM – regarding the alignment of HR practices with organizational strategy – is achieved not only through management practices intended by design, but also the way that they are implemented within the organization (Nishii & Wright, 2008; Woodrow & Guest, 2014; Wright & Nishii, 2013). Social networks intertwined with strategic HR practices can affect their cognition and behaviors and strengthen their capabilities and motivation (Kehoe & Collins, 2017; Lengnick-Hall et al., 2021) and thus provide insights into how strategic HR practices are intended, implemented, and perceived by inter-connected actors in organizations (Piening, Baluch, & Ridder, 2014; Evans & Davis, 2005; Gittel et al., 2010; Hewett & Shantz, 2021; Leana & Van Buren, 1999). In a study on SMEs, Martínez-del-Río, Li, and Guthrie's (2022) found that the adoption of high-performance working practices (HPWP) in a firm is influenced by CEOs' social network embeddedness. The implementation of HR practices is affected by the networks of CEOs (Collins, 2021) and frontline managers (Kurdi-Nakra & Pak, 2023). Organizational actors may perceive the same HR practices differently, and the

perceptions of HR practices tend to be shared across social networks (Nishii, Lepak, & Schneider, 2008). Trust between organizational actors and psychological safety in the networks contribute to HR co-creation, and in turn, the process of HR co-creation strengthens the relational ties between HR and users (Hewett & Shantz, 2021). Some new forms of networks between individuals across organizations led by changes in work organizations, such as cross-boundary working and networked organizations, shall inform the development and adaptation of HRM system (Swart & Kinnie, 2014; Kinnie & Swart, 2020).

Recognizing and studying the relations and interactions between organizational actors is not only relevant to better understand how HR practices influence these social networks but also how social networks play a role in the generation of strategic HR practices (Path D in the framework) and how they act as a contextual factor influencing the implementation and effectiveness of HR practices for achieving SHRM outcomes (Path E in the framework 2). Existing theory development has focused predominantly on explaining how HR practices and systems can be designed to shape the relational aspects of social networks (Path A, e.g., Methot et al., 2018; Leana & Van Buren, 1999), but this does not consider the multiple roles of social networks in the whole HR process, particularly in the more complex business of HR implementation. Social networks are not only affected by HR practices but also impact HR practices as well as organizations' HR processes (Lengnick-Hall et al., 2021; Hewett & Shantz, 2021). It is therefore important for social network and HRM research to learn more about the interplay between networks and HR practices (Soltis, Methot, Gittell, & Harris, 2023). For example, future research can study how the change of networks bring implications on developing HR practices, especially regarding how to identify change agency for implementing new initiatives; how the structure of employees' networks affects their implementation of HR practices and effective achievement of competitive advantages; how interpersonal relationships affect the perception of HR practices and narrow the gap between the intended and perceived

HR practices?

This interplay is important and relevant for SHRM because it allows us to advance our knowledge of how SNS can help close the gap between intended, implemented, and perceived HR practices for achieving strategic goals. These insights are not only relevant for HR topics (e.g., talent management, leadership, and diversity, equity, and inclusion issues) but also for organizational outcomes (e.g., performance, knowledge management and innovation, change management). Exploring how social networks influence HR practices and their effectiveness on strategic outcomes is timely because organizations have to navigate an increasing volatile, uncertain, complex, and ambitious context (Zhang-Zhang, Rohlfer, & Varma, 2022) and networks may represent an important source for competitive advantage (Becker & Huselid, 2006).

4.2. Contingent relationships between HR practices, social networks, and SHRM outcomes

While the articles reviewed provide mostly positive findings about the effects of organizational networks on various SHRM outcomes, scholars and practitioners should investigate in which contexts networks have stronger effects and in which they have weaker or negative effects (Soda et al., 2019; Gray et al., 2019; Hollenbeck, Moon, Ellis, West, Ilgen, Sheppard, Porter, & Wagner III, 2002). We suggest future research look at contingent relationships and ways to achieve a fit between social networks, HR practices, and desired strategic outcomes of SHRM. Studies of potential moderators at various levels would address these issues. Some of the articles reviewed identify gender as a moderator of network effects and show that similar male and female networks have different outcomes (e.g., Bower, 2019). The reviewed articles identified the following moderators: 1) individual motivation and ability to share knowledge (Reinholt, Pedersen, & Foss, 2011: network centrality – knowledge acquisition), 2) team density and team learning culture (Wei et al., 2011: team networks -

knowledge transfer), 3) top manager's task interdependence (Song et al., 2020: TMT cohesion – performance), 4) managerial proactiveness and commitment to innovation (Heavey et al., 2005: TMT networks – organizational ambidexterity), and 5) organizational structure (Andrew, 2010: social capital - organizational performance). Networks may also hinder achievement of organizational goals. This is an emerging topic in SNS which shows that networks have negative effects. For example, Opper and Burt (2021) found that managers embedded in closed networks tend to be less successful in implementing long-term business plans. Pillemer and Rothbard (2018) proposed that workplace friendship may hinder knowledge exchange due to the identity-based cliques. We suggest more work on how HR practices and systems can build on the organizational context to leverage social networks to benefit SHRM outcomes. Future research should also consider moderators at the context level when studying the positive and negative effects of organizational networks. Such investigations are likely to have practical implications for HR practitioners related to the design and implementation of effective HR practices to support organizational goals and the relational dynamics in the organization.

4.3. The relevance of network agency in SHRM

While several studies show that networks in general and specific variables such as network size, density, and network centrality influence organizational outcomes (e.g., Collins & Clark, 2003; Song et al., 2020), we know rather little about how HR activities influence network structures and networking behaviors. We suggest future research on social networks in SHRM focus on the impact of HR practices on the changes and dynamics of networks and on employees' networking behaviors and strategies. This is important for SHRM and HR practitioners supporting the organization's strategic development. Collins and Clark (2003) found that a set of network-building HR practices facilitate top managers' internal and external networking behaviors. Gathering data on networks from individuals, teams, and units before and after the implementation of specific HR practices and observe the change of networks

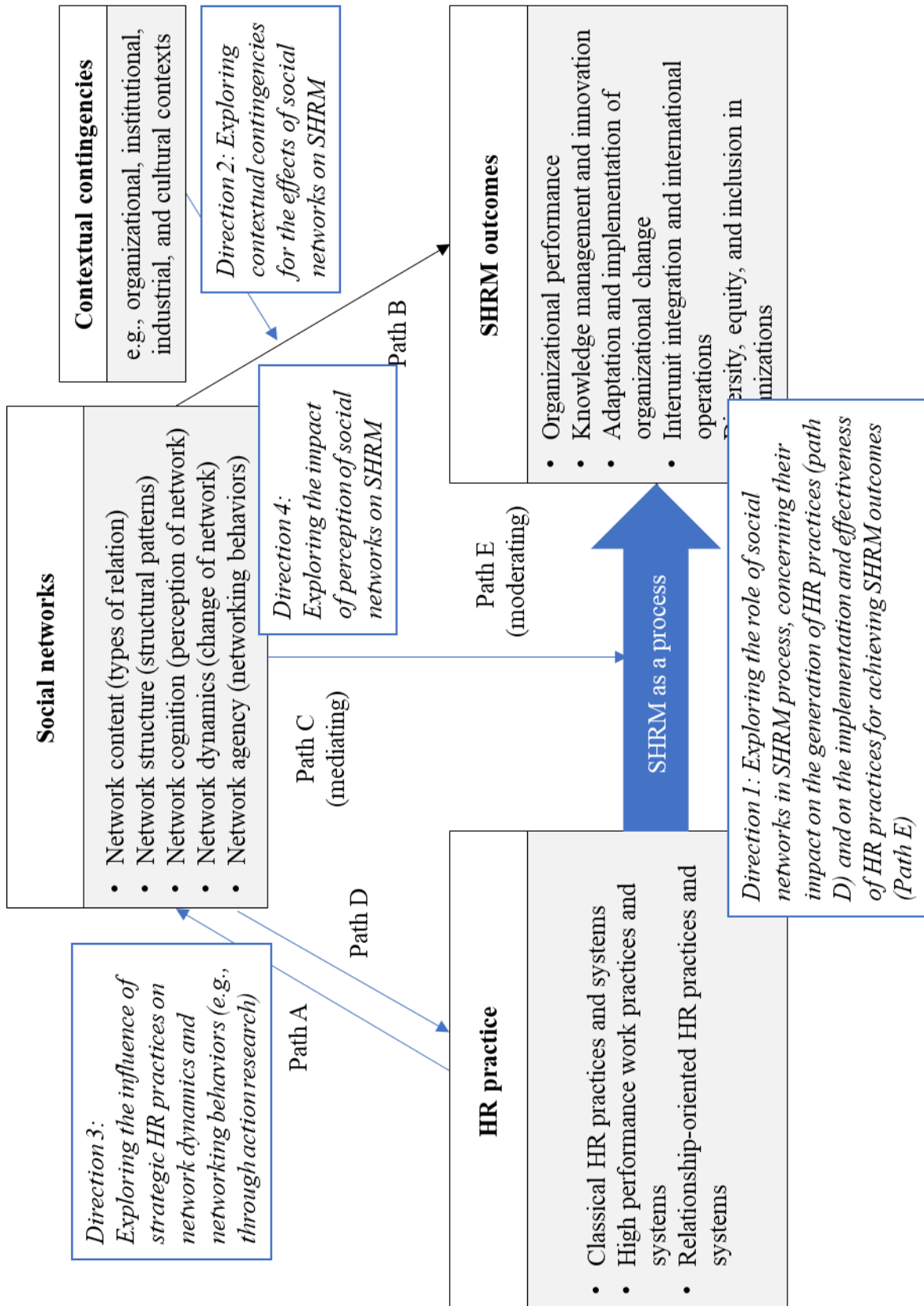
could provide greater understanding of the effect of HR practices on network development (e.g., Gray et al., 2019). Future research could also examine how HRM functions might train and support senior management and exploit their structural and relational advantages. Action research studies could provide valuable knowledge for the fields of SHRM and social networks on how specific HR interventions in organizations can shape social networks in a business environment. Future research focusing on the impact of HR activities should look at the individual, team, and unit network structures and how they impact organizational performance and behavior. Based on these findings, the HR function can tailor support to the networking of change agents and boundary spanners, minority employees and define ways organizations can best benefit from HR interventions. By exploring the HR-related aspects of network development, future work applying action research can contribute to social network research.

4.4. The relevance of network cognition in SHRM

Most SNS investigate the structure (e.g., network size, density, centrality) and content of relations (e.g., friendship, advice, closeness, trust, and competitive ties), and only some highlight the potential offered by the perception of networks and their biases (e.g., Brands, 2013; Nahapiet & Ghoshal, 1998; Kaše et al., 2009; Methot et al., 2018). We suggest future research focus on the possible differences between ‘actual’ network structures as opposed to the ‘perceived’ relations reported by organizational actors and explore the impact of these differences on SHRM (Brands, 2013; Brands & Kilduff, 2014; Brands et al., 2015). This would contribute to social network and SHRM research by showing that individuals’ cognition and behaviors are influenced by their perceptions regardless of the network structure (Byron & Landia, 2020). For example, Cowardin-Lee and Soyalp (2021) found that better engaged employees tend to seek advice from colleagues who they perceive as central in their network. Brands and Kilduff (2014) show that after controlling for actual network position, men (rather than women) were perceived as occupying agentic brokerage positions in their friendship

networks. In turn, male colleagues are perceived as more attractive network contacts and better placed to reap the benefits of a brokerage position. More work on the consequences of biased network perceptions would provide a better understanding of why the advantages of individual, team, and organizational networks are not always fully exploited or only partially exploited by particular organizational members. This has not only implication for work on diversity and inclusion topics but also for our other four identified topics. Such an inquiry would enable further exploration of how (biased) network perceptions affect individuals' networking behaviors and the consequences for perceiving and implementing HR practices, as well as SHRM outcomes. For example, empirical evidence shows that employees for example in central, brokerage, or boundary-spanning positions in networks tend to contribute to various organizational outcomes (Bozkurt & Mohr, 2011; Kostova & Roth, 2003). However, we need also to know how the value of boundary spanners is perceived by other members of the network and how this shapes the effectiveness of boundary spanners. By exploring perception of networks, their predictors, effects, and the contribution of HR activities to less biased perceptions of networks, these studies could contribute to how perceptions of networks shape networking behaviors and outcomes and moderate organizational performance.

Figure 2: Future research directions for social networks studies in the field of SHRM



5. Conclusion

We systematically reviewed 318 SNS in the context of SHRM, where 63 reviewed articles are of high relevance. The results from the review show how social networks in organizational contexts, including their relational and structural characteristics and their dynamics, contributes to organizations' SHRM outcomes, including performance, knowledge management and innovation, adaptation and implementation of organizational change, interunit integration and international operations, and diversity, equity, and inclusion in organizations, and how HR practices support the SHRM outcomes through influencing and shaping these networks.

Based on the literature review and the ongoing research conversations in both social networks and SHRM, we propose a conceptual framework at the intersection to model the multiple interactions among HR practices, social networks, and SHRM outcomes, as well as the contingencies that may affect these interactions. We summarize four roles of social networks in SHRM. First, social networks play a role as an antecedent of various strategic outcomes for SHRM (Cullen-Lester et al., 2021). Second, HR practices influence social networks and thus contribute to organizational outcomes (Leana & Van Buren, 1999), where social networks play a role as a mediator between HR practices and SHRM outcomes. Third, social networks can also impact the design of HR practices for strategic goals (Lengnick-Hall et al., 2021; Hewett & Shantz, 2021). Fourth, social networks play a more complex role in the process of SHRM where they can support or hinder the implementation and effectiveness of strategic HR practices (Piening et al., 2014). Here, they play a role as a moderator on the relationship between HR practices and SHRM outcomes.

We provide a research agenda for future SNS in SHRM and focus on four directions. First, the more complex role of social networks in the process of SHRM, including designing, implementing, and perceiving HR practices (Piening et al., 2014; Woodrow & Guest, 2014;

Wright & Nishii, 2013). Second, we suggest that more focus should be put on the contextual contingencies, regarding when and how networks support or hinder SHRM related activities. Third, we highlight the relevance of management practices and interventions to the dynamics of networks and to employees' networking behaviors. Fourth, the effects of network perceptions and misperception on SHRM outcomes should be explored in more depth, including knowledge transfer, innovation capability, change processes, international management, diversity and inclusion, and leadership.

References

- Abrahamson, E. & Rosenkopf, L. (1997). Social network effects on the extent of innovation diffusion: A computer simulation. *Organization science*, 8(3), 289-309.
- Adler, P. S. & Kwon, S. W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17-40.
- Ahlstrom, D., Arregle, J. L., Hitt, M. A., Qian, G., Ma, X., & Faems, D. (2020). Managing technological, sociopolitical, and institutional change in the new normal. *Journal of Management Studies*, 57(3), 411-437.
- Ahuja, G., Soda, G., & Zaheer, A. (2012). The genesis and dynamics of organizational networks. *Organization science*, 23(2), 434-448.
- Andrews, R. (2010). Organizational social capital, structure and performance. *Human Relations*, 63(5), 583-608.
- Arthur, J. B. (1994). Effects of human resource systems on manufacturing performance and turnover. *Academy of Management journal*, 37(3), 670-687.
- Bannya, A. R., Bainbridge, H. T., & Chan-Serafin, S. (2023). HR practices and work relationships: A 20 year review of relational HRM research. *Human Resource Management*, 62(4), 391-412.
- Baran, B. E., Filipkowski, J. N., & Stockwell, R. A. (2019). Organizational change: Perspectives from human resource management. *Journal of Change Management*, 19(3), 201-219.
- Battilana, J. & Casciaro, T. (2012). Change agents, networks, and institutions: A contingency theory of organizational change. *Academy of Management Journal*, 55(2), 381-398.
- Battilana, J., & Casciaro, T. (2013). Overcoming resistance to organizational change: Strong ties and affective cooptation. *Management Science*, 59(4), 819-836.
- Becker, B. E., & Huselid, M. A. (2006). Strategic human resources management: where do we go from here?. *Journal of Management*, 32(6), 898-925.

- Becker, B. & Gerhart, B. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39(4), 779-801.
- Belliveau, M. A. (2005). Blind ambition? The effects of social networks and institutional sex composition on the job search outcomes of elite coeducational and women's college graduates. *Organization Science*, 16(2), 134–150.
- Bensaou, B. M., Galunic, C., & Jonczyk-Sedes, C. (2014). Players and purists: Networking strategies and agency of service professionals. *Organization Science*, 25(1), 29–56.
- Bertola, L., & Jonczyk, C. D. (2021). The interplay between network brokerage and sense of power. *Academy of Management Proceedings*, 2021(1), 11334.
- Boussebaa, M. (2009). Struggling to organize across national borders: The case of global resource management in professional service firms. *Human Relations*, 62(6), 829-850.
- Bower, T. (2019). The secret of successful female networkers. *Harvard Business Review*, 97(6), 19-23.
- Bozkurt, Ö. & Mohr, A. T. (2011). Forms of cross-border mobility and social capital in multinational enterprises. *Human Resource Management Journal*, 21(2), 138-155.
- Brands, R. A. (2013). Cognitive social structures in social network research: A review. *Journal of Organizational Behavior*, 34(1), 82–103.
- Brands, R. A. & Kilduff, M. (2014). Just like a woman? Effects of gender-biased perceptions of friendship network brokerage on attributions and performance. *Organization Science*, 25(5), 1530-1548.
- Brands, R. A., Menges, J. I., & Kilduff, M. (2015). The leader-in-social-network schema: Perceptions of network structure affect gendered attributions of charisma. *Organization Science*, 26(4), 1210-1225.
- Brass, D. J. (1995). A social network perspective on human resources management. In G. Ferris, *Research in personnel and human resources management*, 13: 39–79. Greenwich, CT: JAI Press.
- Briscoe, F. & Von Nordenflycht, A. (2014). Which path to power? Workplace networks and the relative effectiveness of inheritance and rainmaking strategies for professional partners. *Journal of Professions and Organization*, 1(1), 33-48.
- By, R. T. (2005). Organisational Change Management: A Critical Review. *Journal of Change Management*, 5(4), 369-380.
- Byron, K. & Landis, B. (2020). Relational misperceptions in the workplace: New frontiers and challenges. *Organization Science*, 31(1), 223-242.
- Buller, P. F., & McEvoy, G. M. (2012). Strategy, human resource management and performance: Sharpening line of sight. *Human resource management review*, 22(1), 43-56.
- Burt, R. S. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.
- Burt, R. S. (2007). Secondhand brokerage: Evidence on the importance of local structure for managers, bankers, and analysts. *Academy of Management Journal*, 50(1): 119–148.
- Carpenter, M. A., Li, M., & Jiang, H. (2012). Social network research in organizational contexts: A systematic review of methodological issues and choices. *Journal of Management*, 38(4), 1328-1361.

- Centola, D. & Lord, T. (2018). The truth about behavioral change. *MIT Sloan Management Review*, 60(2), 1-9.
- Cecchi, D., Cicognani, S., & Kulic, N. (2019). Gender Quotas or Girls' Networks? Evidence from an Italian Research Selection. *Work, Employment and Society*, 33(3), 462-482.
- Chen, H., Mehra, A., Tasselli, S., & Borgatti, S. P. (2022). Network dynamics and organizations: A review and research agenda. *Journal of Management*, 48(6), 1602-1660.
- Collins, C. J. & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal*, 46(6), 740-751.
- Cowardin-Lee, N. & Soyalp, N. (2011). Improving organizational workflow with social network analysis and employee engagement constructs. *Consulting Psychology Journal: Practice and Research*, 63(4), 272-283.
- Cullen-Lester, K. L., Porter, C. M., Trainer, H. M., Solanelles, P., & Carter, D. R. (2021). Network Structures of Influence within Organizations and Implications for HRM. *In Research in Personnel and Human Resources Management* (pp. 129-174). Emerald Publishing Limited.
- Cuyppers, I. R., Ertug, G., Cantwell, J., Zaheer, A., & Kilduff, M. (2020). Making connections: Social networks in international business. *Journal of International Business Studies*, 51, 714-736.
- De Klerk, S. & Verreynne, M. L. (2017). The networking practices of women managers in an emerging economy setting: negotiating institutional and social barriers. *Human Resource Management Journal*, 27(3), 477-501.
- Den Hertog, F., Van Iterson, A., & Mari, C. (2010). Does HRM really matter in bringing about strategic change? Comparative action research in ten European steel firms. *European Management Journal*, 28(1), 14-24.
- Espedal, B., Gooderham, P. N., & Stensaker, I. G. (2013). Developing organizational social capital or prima donnas in MNEs? The role of global leadership development programs. *Human Resource Management*, 52(4), 607-625.
- Evans, P. A. (1986). The strategic outcomes of human resource management. *Human Resource Management*, 25(1), 149-167.
- Evans, W. R. & Davis, W. D. (2005). High-performance work systems and organizational performance: The mediating role of internal social structure. *Journal of management*, 31(5), 758-775.
- Farh, C. I., Bartol, K. M., Shapiro, D. L., & Shin, J. (2010). Networking abroad: A process model of how expatriates form support ties to facilitate adjustment. *Academy of Management Review*, 35(3), 434-454.
- Fonti, F., & Maoret, M. (2016). The direct and indirect effects of core and peripheral social capital on organizational performance. *Strategic management journal*, 37(8), 1765-1786.
- Friedman, R. A. & Holtom, B. (2002). The effects of network groups on minority employee turnover intentions. *Human Resource Management*, 41(4), 405-421.
- Fu, N. (2015). The role of relational resources in the knowledge management capability and innovation of professional service firms. *Human Relations*, 68(5), 731-764.

- Gargiulo, M. & Benassi, M. (2000). Trapped in your own net? Network cohesion, structural holes, and the adaptation of social capital. *Organization science*, 11(2), 183-196.
- Georgiadou, A. & Syed, J. (2021). The interaction between gender and informal social networks: An East Asian perspective: Gender diversity management in East Asia. *Human Resource Management Journal*, 31(4), 995-1009.
- Gittell, J. H., Seidner, R., & Wimbush, J. (2010). A relational model of how high-performance work systems work. *Organization science*, 21(2), 490-506.
- Gong, Y., Kim, T. Y., & Liu, Z. (2020). Diversity of social ties and creativity: Creative self-efficacy as mediator and tie strength as moderator. *Human Relations*, 73(12), 1664-1688.
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78: 1360-1380.
- Granovetter, M. S. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, 91: 481-510.
- Gray, S. M., Bunderson, J. S., Boumgarden, P., & Bechara, J. P. (2019). Engineering interaction: Structural change, locus of identification, and the formation and maintenance of cross-unit ties. *Personnel Psychology*, 72(4), 599-622.
- Greguletz, E., Diehl, M. R., & Kreutzer, K. (2019). Why women build less effective networks than men: The role of structural exclusion and personal hesitation. *Human Relations*, 72(7), 1234-1261
- Grigoriou, K. & Rothaermel, F. T. (2014). Structural microfoundations of innovation: The role of relational stars. *Journal of Management*, 40(2), 586-615.
- Gubbins, C. & Garavan, T. (2016). Social capital effects on the career and development outcomes of HR professionals. *Human Resource Management*, 55(2), 241-260.
- Guler, I. & Guillen, M. F. (2010). Home country networks and foreign expansion: Evidence from the venture capital industry. *Academy of Management Journal*, 53(2), 390-410.
- Hallen, B. L., Davis, J. P., & Murray, A. (2020). Entrepreneurial network evolution: Explicating the structural localism and agentic network change distinction. *Academy of Management Annals*, 14(2), 1067-1102.
- Hansen, M.T. (2002). Knowledge networks: Explaining effective knowledge sharing in multiunit companies. *Organization Science*, 13(3), 232-248.
- Heavey, C., Simsek, Z., & Fox, B. C. (2015). Managerial social networks and ambidexterity of SMEs: The moderating role of a proactive commitment to innovation. *Human Resource Management*, 54(1), 201-221.
- Hendry, C. (1996). Continuities in human resource processes in internationalization and domestic business management. *Journal of Management Studies*, 33(4), 475-494.
- Hewett, R., & Shantz, A. (2021). A theory of HR co-creation. *Human Resource Management Review*, 31(4), 100823.
- Ho, V. T. & Pollack, J. M. 2014. Passion isn't always a good thing: Examining entrepreneurs' network centrality and financial performance with a dualistic model of passion. *Journal of Management Studies*, 51(3), 433-459.
- Hollenbeck, J. R., Moon, H., Ellis, A. P., West, B. J., Ilgen, D. R., Sheppard, L., Porter, C.O. & Wagner III, J. A. (2002). Structural contingency theory and individual differences: Examination of external and internal person-team fit. *Journal of applied psychology*, 87(3), 599.

- Hollenbeck, J. R. & Jamieson, B. B. (2015). Human capital, social capital, and social network analysis: Implications for strategic human resource management. *Academy of Management Perspectives*, 29(3), 370-385.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of management journal*, 38(3), 635-672.
- Jacobsen, D. H., Stea, D., & Soda, G. (2022). Intraorganizational network dynamics: past progress, current challenges, and new frontiers. *Academy of Management Annals*, 16(2), 853-897.
- Jiang, J. Y., & Liu, C. W. (2015). High performance work systems and organizational effectiveness: The mediating role of social capital. *Human Resource Management Review*, 25(1), 126-137.
- Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, 55(6), 1264-1294.
- Jones, C., Hesterly, W. S., Fladmoe-Lindquist, K., & Borgatti, S. P. (1998). Professional service constellations: How strategies and capabilities influence collaborative stability and change. *Organization Science*, 9(3), 396-410.
- Kaše, R., Paauwe, J., & Zupan, N. (2009). HR practices, interpersonal relations, and intrafirm knowledge transfer in knowledge-intensive firms: A social network perspective. *Human Resource Management*, 48(4), 615–639.
- Kehoe, R. R., & Collins, C. J. (2017). Human resource management and unit performance in knowledge-intensive work. *Journal of Applied Psychology*, 102(8), 1222.
- Khattab, J., Van Knippenberg, D., Pieterse, A. N., & Hernandez, M. (2020). A network utilization perspective on the leadership advancement of minorities. *Academy of Management Review*, 45(1), 109-129.
- Kilduff, M., & Brass, D. J. (2010). Organizational social network research: Core ideas and key debates. *Academy of Management Annals*, 4(1), 317-357.
- Kim, T. Y., Oh, H., & Swaminathan, A. (2006). Framing interorganizational network change: A network inertia perspective. *Academy of management review*, 31(3), 704-720.
- Kim, S., Su, Z. X., & Wright, P. M. (2018). The “HR–line-connecting HRM system” and its effects on employee turnover. *Human Resource Management*, 57(5), 1219-1231.
- Kostova, T. & Roth, K. (2003). Social capital in multinational corporations and a micro-macro model of its formation. *The Academy of Management Review*, 28(2), 297–317.
- Kumar, P. & Zaheer, A. (2019). Ego-network stability and innovation in alliances. *Academy of Management Journal*, 62(3), 691-716.
- Leana, C. R., & Van Buren, H. J. (1999). Organizational social capital and employment practices. *Academy of Management Review*, 24(3), 538-555.
- Leicht, K. T. & Marx, J. (1997). The consequences of informal job finding for men and women. *Academy of Management Journal*, 40(4), 967–987.
- Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, 21(3), 243-255.

- Lengnick-Hall, M. L. & Lengnick-Hall, C. A. (2003). HR's role in building relationship networks. *Academy of Management Perspectives*, 17(4), 53-63.
- Lengnick-Hall, M. L., Lengnick-Hall, C. A., Andrade, L. S., & Drake, B. (2009). Strategic human resource management: The evolution of the field, *Human Resource Management Review*, 19(2), 64-85.
- Lengnick-Hall, C. A., Lengnick-Hall, M. L., Neely, A., & Bonner, R. L. (2021). Something Old, Something New: Reframing the Integration of Social Capital into Strategic HRM Research. *Academy of Management Perspectives*, 35(3), 535-556.
- Levy, O., Lee, H. J., Jonsen, K., & Peiperl, M. A. (2019). Transcultural brokerage: The role of cosmopolitans in bridging structural and cultural holes. *Journal of Management*, 45(2), 417-450.
- Li, Y., Li, N., Li, C., & Li, J. (2020). The boon and bane of creative “stars”: A social network exploration of how and when team creativity is (and is not) driven by a star teammate. *Academy of Management Journal*, 63(2), 613-635.
- Lyness, K. S. & Thompson, D. E. (2000). Climbing the corporate ladder: Do female and male executives follow the same route? *Journal of Applied Psychology*, 85(1), 86-101.
- Mao, J. & Shen, Y. (2015). Cultural identity change in expatriates: A social network perspective. *Human Relations*, 68(10), 1533–1556.
- Marin, A. & Wellman, B. (2011). Social network analysis: An introduction. In: J. Scott & P. J. Carrington, (Eds.), *The SAGE Handbook of Social Network Analysis* (pp. 11-25). Sage.
- McEvily, B., Jaffee, J., & Tortoriello, M. (2012). Not all bridging ties are equal: Network imprinting and firm growth in the Nashville legal industry, 1933–1978. *Organization science*, 23(2), 547-563.
- McMahan, G. C., Bell, M. P., & Virick, M. (1998). Strategic human resource management: Employee involvement, diversity, and international issues. *Human Resource Management Review*, 8(3), 193–214.
- Merluzzi, J. (2017). Gender and negative network ties: exploring difficult work relationships within and across gender. *Organization Science*, 28(4), 636-652.
- Methot, J. R., Rosado-Solomon, E. H., & Allen, D. G. (2018). The network architecture of human capital: A relational identity perspective. *Academy of Management Review*, 43(4), 723-748.
- Mollica, K. A., Gray, B., & Trevino, L. K. (2003). Racial homophily and its persistence in newcomers' social networks. *Organization Science*, 14(2), 123-136.
- Nahapiet, J. & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242–266.
- Neeley, T. B. & Reiche, B. S. (2022). How global leaders gain power through downward deference and reduction of social distance. *Academy of Management Journal*, 65(1), 11–34.
- Nishii, L. H., & Wright, P. M. (2008). Variability within organizations: Implications for strategic human resource management. In D. B. Smith (Ed.), *The people make the place: Dynamic linkages between individuals and organizations* (pp. 225–248). New York: Lawrence Erlbaum Associates Inc.
- Oliver, A. L. & Montgomery, K. (2008). Using field-configuring events for sense-making: a cognitive network approach. *Journal of Management Studies*, 45(6), 1147-1167.

- Opper, S. & Burt, R. S. (2021). Network structure and temporal myopia. *Academy of Management Journal*, 63(3), 741-771.
- Park, S., Grosser, T. J., Roebuck, A. A., & Mathieu, J. E. (2020). Understanding work teams from a network perspective: A review and future research directions. *Journal of Management*, 46(6), 1002-1028.
- Paruchuri, S. & Eisenman, M. (2012). Microfoundations of firm R&D capabilities: A study of inventor networks in a merger. *Journal of Management Studies*, 49(8), 1509-1535.
- Pedersen, T., Soda, G., & Stea, D. (2019). Globally networked: Intraorganizational boundary spanning in the global organization. *Journal of World Business*, 54(3), 169-180.
- Perry-Smith, J. E. & Shalley, C. E. (2014). A social composition view of team creativity: The role of member nationality-heterogeneous ties outside of the team. *Organization Science*, 25(5), 1434-1452.
- Pickering, J. M., & King, J. L. (1995). Hardwiring weak ties: Interorganizational computer-mediated communication, occupational communities, and organizational change. *Organization Science*, 6(4), 479-486.
- Piening, E. P., Baluch, A. M., & Ridder, H. G. (2014). Mind the intended-implemented gap: Understanding employees' perceptions of HRM. *Human Resource Management*, 53(4), 545-567.
- Pillemer, J. & Rothbard, N. P. (2018). Friends Without Benefits: Understanding the Dark Sides of Workplace Friendship. *Academy of Management Review*, 43(4), 635-660.
- Posthuma, R. A., Campion, M. C., Masimova, M., & Campion, M. A. (2013). A high performance work practices taxonomy: Integrating the literature and directing future research. *Journal of management*, 39(5), 1184-1220.
- Reagans, R. & McEvily, B. (2003). Network structure and knowledge transfer: The effects of cohesion and range. *Administrative Science Quarterly*, 48(2), 240-267.
- Reinholt, M., Pedersen, T., & Foss, N. J. (2011). Why a central network position is not enough: The role of motivation and ability for knowledge sharing in employee networks. *Academy of Management Journal*, 54(6), 1277-1297.
- Schotter, A. P., Mudambi, R., Doz, Y. L., & Gaur, A. (2017). Boundary spanning in global organizations. *Journal of Management Studies*, 54(4), 403-421.
- Shaw, J. D., Duffy, M. K., Johnson, J. L., & Lockhart, D. E. (2005). Turnover, social capital losses, and performance. *Academy of management Journal*, 48(4), 594-606.
- Shipilov, A., Gulati, R., Kilduff, M., Li, S., & Tsai, W. (2014). Relational pluralism within and between organizations. *Academy of Management Journal*, 57(2), 449-459.
- Smith, K. G., Collins, C. J., & Clark, K. D. (2005). Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms. *Academy of Management Journal*, 48(2), 346-357.
- Soda, G., Stea, D., & Pedersen, T. (2019). Network structure, collaborative context, and individual creativity. *Journal of Management*, 45(4), 1739-1765.
- Soenen, G., Melkonian, T., & Ambrose, M. L. (2017). To shift or not to shift? Determinants and consequences of phase shifting on justice judgments. *Academy of Management Journal*, 60(2), 798-817.

- Soltis, S. M., Brass, D. J., & Lepak, D. P. (2018). Social resource management: Integrating social network theory and human resource management. *Academy of Management Annals*, 12(2), 537-573.
- Soltis, S. M., Methot, J. R., Gittell, J. H., & Harris, T. B. (2023). Leveraging relational analytics in human resource research and practice. *Human Resource Management*, 62(4), 377-389.
- Song, Y., Fang, Y., Wang, M., & Shi, J. (2020). A multiplex view of leadership structure in management teams. *Personnel Psychology*, 73(4), 615-640.
- Stouten, J., Rousseau, D. M., & De Cremer, D. (2018). Successful organizational change: Integrating the management practice and scholarly literatures. *The Academy of Management Annals*, 12(2), 752–788.
- Subramaniam, M. & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.
- Tasselli, S., & Kilduff, M. (2021). Network agency. *Academy of Management Annals*, 15(1), 68-110.
- Tasselli, S., Kilduff, M., & Menges, J. I. (2015). The microfoundations of organizational social networks: A review and an agenda for future research. *Journal of Management*, 41(5), 1361–1387.
- Taylor, S. (2007). Creating social capital in MNCs: The international human resource management challenge. *Human Resource Management Journal*, 17(4), 336-354.
- Thomas, D. A. (2001). The truth about mentoring minorities. Race matters. *Harvard Business Review*, 79(4), 98– 107.
- Tortoriello, M., McEvily, B., & Krackhardt, D. (2014). Being a catalyst of innovation: The role of knowledge diversity and network closure. *Organization Science*, 26(2), 423-438.
- Tortoriello, M., Reagans, R., & McEvily, B. (2012). Bridging the knowledge gap: The influence of strong ties, network cohesion, and network range on the transfer of knowledge between organizational units. *Organization science*, 23(4), 1024-1039.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207-222.
- Tsai, W., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal*, 41(4), 462–476.
- Uzzi, B. (2019). Research: Men and Women Need Different Kinds of Networks to Succeed. *Harvard Business Review*.
- Van Iddekinge, C. H., Arnold, J. D., Frieder, R. E., & Roth, P. L. (2019). A meta-analysis of the criterion-related validity of prehire work experience. *Personnel Psychology*, 72(4), 571-598.
- Vardaman, J. M., Amis, J. M., Dyson, B. P., Wright, P. M., & Van de Graaff Randolph, R. (2012). Interpreting change as controllable: The role of network centrality and self-efficacy. *Human Relations*, 65(7), 835-859.
- Wei, J., Zheng, W., & Zhang, M. (2011). Social capital and knowledge transfer: A multi-level analysis. *Human Relations*, 64(11), 1401-1423.
- Woehler, M. L., Cullen-Lester, K. L., Porter, C. M., & Frear, K. A. (2021). Whether, How, and Why Networks Influence Men’s and Women’s Career Success: Review and Research Agenda. *Journal of Management*, 47(1), 207-236.

- Woodrow, C., & Guest, D. E. (2014). When good HR gets bad results: Exploring the challenge of HR implementation in the case of workplace bullying. *Human Resource Management Journal*, 24(1), 38-56
- Wright, P. M. & McMahan, G. C. (1992). Theoretical perspectives for strategic human resource management. *Journal of management*, 18(2), 295-320.
- Wright, P. M., & Nishii, L. H. (2013). Strategic HRM and organizational behaviour: Integrating multiple levels of analysis. In J. Paauwe, D. E. Guest, & P. M. Wright (Eds.), *HRM and performance: Achievements and challenges* (pp. 97–111). Chichester: Wiley.
- Wright, P. M. & Ulrich, M. D. (2017). A road well traveled: The past, present, and future journey of strategic human resource management. *Annual Review of Organizational Psychology and Organizational Behavior*, 4, 45-65.
- Wu, L. & Kane, G. C. (2021). Network-Biased Technical Change: How Modern Digital Collaboration Tools Overcome Some Biases but Exacerbate Others. *Organization Science*, 32(2), 273-292.
- Wylie, N., Sturdy, A., & Wright, C. (2014). Change agency in occupational context: lessons for HRM. *Human Resource Management Journal*, 24(1), 95-110.
- Yamao, S., Cieri, H. D., & Hutchings, K. (2009). Transferring subsidiary knowledge to global headquarters: subsidiary senior executives' perceptions of the role of HR configurations in the development of knowledge stocks. *Human Resource Management*, 48(4), 531-554.
- Zaheer, A., & Soda, G. (2009). Network evolution: The origins of structural holes. *Administrative Science Quarterly*, 54(1), 1-31.
- Zhang-Zhang, Y., Rohlfer, S., & Varma, A. (2022). Strategic people management in contemporary highly dynamic VUCA contexts: A knowledge worker perspective. *Journal of Business Research*, 144, 587-598.
- Zhao, Z., Anand, J., & Mitchell, W. (2005). A dual networks perspective on inter-organizational transfer of R&D capabilities: international joint ventures in the Chinese automotive industry. *Journal of Management Studies*, 42(1), 127-160.

Conclusion

In three articles, this dissertation explores how studying social networks advances our knowledge about various topics in strategic management. Social networks are particularly relevant for strategic management because the actors involved in an organization's strategy and responsible for strategic outcomes are interconnected (Lengnick-Hall, Lengnick-Hall, Neely, & Bonner, 2021; Gittell, Seidner, & Wimbush, 2010). Studying their relations and networks provides a complementary lens for understanding organizational phenomena and strategic issues (Haynes & Hillman, 2010; Westphal, 1999). Also, organizations with clear strategic goals provide a suitable research context for network scholars to conduct empirical studies on various network topics among organizational actors, which helps advance social network theory. Demonstrating the crucial role of social networks in understanding and managing strategy issues, the findings from this dissertation provide rich implications for strategy practitioners (e.g., board of directors, top managers, line managers, and HR managers).

This dissertation contributes to the literature on social networks and various topics in strategic management, including strategic leadership, entrepreneurship, and SHRM. For the social network literature, the two empirical studies (articles 1 and 2) enhance social network theory by examining the antecedents and consequences as well as relevant contextual contingencies of the network structure of CEOs and the network agency of entrepreneurs. The theoretical work summarizes how various aspects of social networks have been studied in SHRM. It discusses how future research can further integrate different perspectives in social network theory, such as network dynamics, network agency, and network cognition. For strategic management, the three articles offer insights on how tasking a social network perspective can help gain a complete overview, especially regarding understanding the underlying mechanism of various organizational phenomena and research questions. In addition, the dissertation offers rich practical implications for organizations to leverage their

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diverse human resources and social works better for overcoming different challenges and achieving desired strategic outcomes.

The first article, *“It’s the network: Why outsider CEOs bring (less) strategic change,”* studies the social networks of CEOs and examines the mediating role of network structure in explaining the relationship between new CEO outsidership and strategic change. It contributes to social network theory by revealing the complex effects of social networks in different business contingencies. Although social networks and their patterns are known to have both benefits and costs (Opper & Burt, 2021; Jonczyk, Lee, Galunic, & Bensaou, 2016), this work indicates that their effects on the organization depend on the firm’s performance contexts. For strategic management, it contributes to strategic leadership – particularly the literature on CEO succession – by adopting a social network perspective, underscoring the potential of studying the CEO’s social networks, and highlighting the relevance of integrating relational characteristics into the upper echelon theory (Cao, Maruping, & Takeuchi, 2006). The results from the empirical study show that the new CEO’s network with the firm’s board members and with external business elites explains the paradox between the effect of outside succession on strategic change in different succession contexts (i.e., the “turnaround trap,” Karaevli, 2016; Karaevli & Zajac, 2013). It also contributes to a particular topic in strategic management, corporate turnaround, by arguing and showing empirically that outsider CEOs induce less strategic change in turnaround situations. The study provides some practical implications related to the appointment and integration of new CEOs. Based on the findings, it suggests that when considering recruiting an outsider CEO, firms should consider the firm’s financial situation to decide whether an insider CEO might be better able to introduce change. Also, when considering the appointment of an outsider CEO, the firm should consider the extent of the candidate's pre-established ties with the firm’s board members as an essential contingency affecting the implementation of strategic change.

The second article, *“Reap what you sow: Who benefits from business networks,”* studies entrepreneurs' networking behaviors and examines their effects on gaining benefits from the antecedents facilitating or constraining active networking behaviors. It makes significant contributions to the ongoing conversation in the network literature about the role of network agency (Tasselli & Kilduff, 2021; Ahuja, Soda, & Zaheer, 2012) by offering a more fine-grained understanding of networking behaviors and the derived network benefits. Holding the immediate network structure constant by studying the individuals in the same business networks, the study focuses on individuals' networking behaviors. It shows how these behaviors lead to outcomes in terms of tangible benefits, which is the ultimate purpose of network agency (Burt, Kilduff, & Tasselli, 2013). By exploring how networking behaviors are “gendered,” the findings also provide new insights into the role of gender in networks (Brands, Ertug, Fonti, & Tasselli, 2022; Fang, Zhang, & Shaw, 2021) and thereby inform network research on factors determining different network benefits and different mechanisms for achieving network benefits for disadvantaged groups (Woehler, Cullen-Lester, Porter, & Frear, 2021; Brands et al., 2022). For strategic management, it responds to the call for a better understanding of the role of context – especially the interaction between entrepreneurial context and entrepreneurial actions (Patriotta & Siegel, 2019). Besides, the study advances gender studies in entrepreneurship literature (Hallen, Davis, & Murray, 2020; Marlow & Martinez Dy, 2018) by comparing the networking behaviors and derived benefits between male and female entrepreneurs. Based on the findings, I further develop practical insights for business networking organizations, which aim to support entrepreneurs and small and medium-sized enterprises (SMEs) on how they could promote business networking among entrepreneurs and help their businesses more effectively. I also offer practical recommendations for entrepreneurs and particularly disadvantaged groups who benefit less from networks and networking on how they could better use their networks for business

development.

The third article, *“Take a relational stance: How social network studies can advance strategic human resource management,”* reviewed different aspects of social networks studied in the context of SHRM, regarding how social networks contribute to strategic outcomes, including performance, knowledge management and innovation, adaptation, and implementation of organizational change, interunit integration and international operations, and diversity, equity, and inclusion in organizations. It provides a comprehensive overview of social network studies in SHRM. It offers insights into how social networks influence SHRM outcomes (e.g., Song, Fang, Wang, & Shi, 2020) and how HR practices shape and influence networks for achieving strategic goals (e.g., Kaše, Paauwe, & Zupan, 2009). Based on the literature review and the ongoing research conversations, I propose a conceptual framework at the intersection between social networks and SHRM to model the multiple interactions among HR practices, social networks, and SHRM outcomes, as well as the contingencies that may affect these interactions. I propose a research agenda and highlight the potential benefit of integrating various social network aspects, such as network dynamics, network agency, and network cognition, into SHRM research. It contributes to social network literature by summarizing what aspects of social networks have been studied in SHRM and discussing how other aspects – such as action research on network dynamics – can be further examined in organizations. For strategic management, it offers rich insights into how organizations can leverage their inter-connected human resources through effective HR practices and activities to improve organizational performance (e.g., Song et al., 2020), foster knowledge transfer and innovation (e.g., Tortoriello et al., 2014), support organizational change and adaptation processes (e.g., Vardaman, Amis, Dyson, Wright, & Van de Graaff Randolph, 2012), help integrate international operations (e.g., Guler & Guillen, 2010), and build an inclusive organizational culture (e.g., Woehler et al., 2021).

‘Individuals are embedded in thick webs of social relations and interactions’ (Borgatti, Mehra, Brass, & Labianca, 2009: 892). Recognizing and studying the relations and networks of organizational actors is relevant to better understanding why some organizations are more competitive than others and how organizations can influence these social networks to achieve strategic goals. This dissertation suggests that understanding social networks in organizations and adopting various perspectives in social network theory can complement our current knowledge about organizational phenomena and offer a more holistic picture of strategic management.

References

- Ahuja, G., Soda, G., & Zaheer, A. (2012). The genesis and dynamics of organizational networks. *Organization Science*, 23(2), 434-448.
- Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network Analysis in the Social Sciences. *Science*, 323, 892-895.
- Brands, R., Ertug, G., Fonti, F., & Tasselli, S. (2022). Theorizing gender in social network research: What we do and what we can do differently. *Academy of Management Annals*, 16(2), 588-620.
- Burt, R. S., Kilduff, M., & Tasselli, S. (2013). Social network analysis: Foundations and frontiers on advantage. *Annual review of psychology*, 64, 527-547.
- Cao, Q., Maruping, L. M., & Takeuchi, R. (2006). Disentangling the effects of CEO turnover and succession on organizational capabilities: A social network perspective. *Organization Science*, 17(5), 563-576.
- Fang, R., Zhang, Z., & Shaw, J. D. (2021). Gender and social network brokerage: A meta-analysis and field investigation. *Journal of Applied Psychology*, 106(11), 1630.
- Gittell, J. H., Seidner, R., & Wimbush, J. (2010). A relational model of how high-performance work systems work. *Organization science*, 21(2), 490-506.
- Guler, I. & Guillen, M. F. (2010). Home country networks and foreign expansion: Evidence from the venture capital industry. *Academy of Management Journal*, 53(2), 390-410.
- Hallen, B. L., Davis, J. P., & Murray, A. (2020). Entrepreneurial network evolution: Explicating the structural localism and agentic network change distinction. *Academy of Management Annals*, 14(2), 1067-1102.
- Haynes, K. T., & Hillman, A. (2010). The effect of board capital and CEO power on strategic change. *Strategic management journal*, 31(11), 1145-1163.

- Jonczyk, C. D., Lee, Y. G., Galunic, C. D., & Bensaou, B. M. (2016). Relational changes during role transitions: The interplay of efficiency and cohesion. *Academy of Management Journal*, 59(3), 956-982.
- Karaevli, A. (2016). The “Turnaround Trap” of outsider CEOs. *Organizational Dynamics*, 4(45), 278-282.
- Karaevli, A., & Zajac, E. J. (2013). When Do Outsider CEOs Generate Strategic Change? The Enabling Role of Corporate Stability. *Journal of Management Studies*, 50(7), 1267–1294.
- Kaše, R., Paauwe, J., & Zupan, N. (2009). HR practices, interpersonal relations, and intrafirm knowledge transfer in knowledge-intensive firms: A social network perspective. *Human Resource Management*, 48(4), 615–639.
- Lengnick-Hall, C. A., Lengnick-Hall, M. L., Neely, A., & Bonner, R. L. (2021). Something Old, Something New: Reframing the Integration of Social Capital into Strategic HRM Research. *Academy of Management Perspectives*, 35(3), 535-556.
- Marlow, S., & Martinez Dy, A. (2018). Annual review article: Is it time to rethink the gender agenda in entrepreneurship research. *International Small Business Journal*, 36(1), 3-22.
- Opper, S., & Burt, R. S. (2021). Network Structure and Temporal Myopia. *Academy of Management Journal*, 64(3), 741-771.
- Patriotta, G., & Siegel, D. (2019). The context of entrepreneurship. *Journal of Management Studies*, 56(6), 1194-1196.
- Song, Y., Fang, Y., Wang, M., & Shi, J. (2020). A multiplex view of leadership structure in management teams. *Personnel Psychology*, 73(4), 615-640.
- Tasselli, S., & Kilduff, M. (2021). Network agency. *Academy of Management Annals*, 15(1), 68-110.
- Tortoriello, M., McEvily, B., & Krackhardt, D. (2014). Being a catalyst of innovation: The role of knowledge diversity and network closure. *Organization Science*, 26(2), 423-438.
- Vardaman, J. M., Amis, J. M., Dyson, B. P., Wright, P. M., & Van de Graaff Randolph, R. (2012). Interpreting change as controllable: The role of network centrality and self-efficacy. *Human Relations*, 65(7), 835-859.
- Westphal, J. D. (1999). Collaboration in the boardroom: Behavioral and performance consequences of CEO-board social ties. *Academy of Management Journal*, 42(1), 7-24.
- Woehler, M. L., Cullen-Lester, K. L., Porter, C. M., & Frear, K. A. (2021). Whether, how, and why networks influence men’s and women’s career success: Review and research agenda. *Journal of Management*, 47(1), 207-236.