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Learning in strategic alliances: Reviewing the literature streams and crafting the agenda for future research

Marko Kohtamäki [a,*], Rodrigo Rabetino [b], Tuomas Huikkola [b]

[a] University of Vaasa, School of Management / Luleå University of Technology, Entrepreneurship and Innovation, PO Box 700, FI-65101 Vaasa, Finland
[b] School of Management, University of Vaasa, PO Box 700, FI-65101 Vaasa, Finland

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ABSTRACT

The present study examines the alliance learning literature in these uncertain times, which highlights the importance of alliance learning that takes place across organizational boundaries within a variety of business ecosystems. The study builds on a literature review of 198 articles and uses bibliographic coupling to identify four sub-streams of alliance learning research: 1) learning in strategic alliances, 2) relationship learning, 3) learning in innovation networks, and 4) learning in social networks. We review and analyze the alliance learning research streams, identify gaps, and develop a research agenda for alliance learning research.

1. Introduction

Increasing volatility in globalization and world trade and complex societal problems such as climate change, digitalization, and technological complexity are all impacting the development cycles of new offerings and (re)shaping how companies operate their businesses through collaboration and competition within networks, ecosystems, and platforms (He, Meadows, Angwin, Gomes, & Child, 2020). Studies suggest that to compete in highly competitive, complex, and dynamic markets and ecosystems (Jacobides, Cennamo, & Gawer, 2018; Möller & Halinen, 2017; Ozalp, Cennamo, & Gawer, 2018), companies need capabilities related to constant innovation and learning (Kohtamäki, Rabetino, & Möller, 2018), including a dynamic capability identified as alliance learning, network learning, or relationship learning (Mesquita, Anand, & Brush, 2008; Schilke & Goerzen, 2010). Strategic alliances, defined as *"cooperative agreements of any form aimed at the development, manufacture, and/or distribution of new products"* (Zollo, Reuer, & Singh, 2002: 701), are used as a source of learning to generate future competitive advantage (Kale, Dyer, & Singh, 2001). A classic definition of networks positions alliances as an organizational form between markets and hierarchies (Thorelli, 1986). Hence, an alliance—which has many labels in the literature, such as a network (multilateral), partnership (dyadic), or hybrid (mixing multiple governance forms)—is more integrated than an arm's-length market relationship but more loosely coupled than a hierarchical organization (Powell, 1990). Strategic alliances take many forms, including R&D collaborations, joint ventures, marketing collaborations, manufacturing, supplier, and distributor relationships, as well as collaboration with competitors (e.g., coopetition) and complementors (Ozalp et al., 2018). The present study concentrates on structuring the existing research on alliance learning to identify what we already know, what is there to know, and what directions should be taken to advance the field of alliance learning. In this work, we utilize an existing and well-established definition of alliance learning: *"relationship learning as a joint activity between a supplier and a customer in which the two parties share information, which is then jointly interpreted and integrated into a shared relationship-domain-specific memory that changes the range or likelihood of potential relationship-domain-specific behavior"* (Selnes & Sallis, 2003: 80).

While the research on learning in alliances is strong, we can identify a few drawbacks that require attention. First, alliance learning research, as well as interorganizational learning research in general, is in great danger of becoming outdated and neglected by new and emerging research on ecosystems, and platforms, as the newer research streams may be recreating all the content of the alliance and network research in a new context using slightly different labels (Möller and Halinen, 2017). Hence, a review such as this one on the alliance learning literature and its sub-streams can provide a gentle and helpful reminder about the existing research while identifying and structuring subcommunities, systematically reviewing content, and providing ideas about how to utilize previously developed theories and concepts to solve future challenges in ecosystems, networks, and platforms (Kohtamäki, Parida, Oghazi, Gebauer, & Baines, 2019). It is likely that alliance learning

* Corresponding author.
E-mail addresses: marko.kohtamaki@uva.fi (M. Kohtamäki), rodrigo.rabetino@uva.fi (R. Rabetino), tuomas.huikkola@uwasa.fi (T. Huikkola).

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research, the research in all of the sub-streams, and interorganizational network research in general, are now needed more than ever due to rapidly evolving digitalization, vicious global challenges, and blurring firm boundaries. Nevertheless, a reminder about concepts, frameworks, and existing evidence is needed.

Second, as an issue emerging from strategic alliance research, the topic of learning in alliances, networks, and relationships has been examined in many scientific studies in recent years. Previous reviews have been conducted on strategic alliances (Barringer & Harrison, 2000; He et al., 2020; Ireland, Hitt, & Vaidyanath, 2002; Oliver & Ebers, 1998), strategic networks (Helander & Möller, 2007), innovation networks (Powell, Koput, & Smith-Doerr, 1996), alliance management (Möller & Halinen, 2017; Niesten & Jolink, 2015; Schilke & Goerzen, 2010), and alliance capabilities (Kohtamäki et al., 2018) but not specifically to map, structure, and understand alliance learning research. This constraint is an issue considering that there are 198 scientific articles on learning in alliances, a considerable body of emerging literature without a clear review structuring its contents. This limitation is a significant problem that calls for a review.

Third, the planning of the future research agenda of alliance learning research is quite scattered, and there is no proper understanding of the sub-streams within the body of research. Hence, the evolution of alliance learning research lacks coherence. At least partially, this incoherence may result from studies viewing alliance learning research as a single entity instead of many, failing to properly identify and understand the sub-streams within alliance learning research. Thus, there is a need to facilitate and plan a future research agenda based on the sub-streams of the alliance learning literature to coherently enrich this body of literature through a systematic literature review.

The present study sets out to understand how to structure the research field of learning in strategic alliances and facilitates network researchers in identifying and understanding the theoretical, contextual, and methodological foundations of interorganizational learning research. In this study, we intend to contribute to the field of learning in alliances, which can be considered a subfield of strategic alliance research. We use data from 198 articles, cluster the individual articles to understand the structure of the alliance learning literature, and identify the sub-streams of this literature to analyze their content and thus provide suggestions for future research to make our contribution. We delimit our search, review, and contributions to the alliance learning literature. Based on bibliometric structuring, this study identifies four research communities: 1) learning in strategic alliances, 2) relationship learning, 3) learning in innovation networks, and 4) learning in social networks. We provide suggestions not only for each of the identified sub-streams but also for the methodologies they use. Based on identified gaps, this systematic review provides a rich and solid foundation for future studies to continue research on learning in strategic alliances and its four sub-streams.

2. Review methodology

This study adopted a systematic literature review methodology

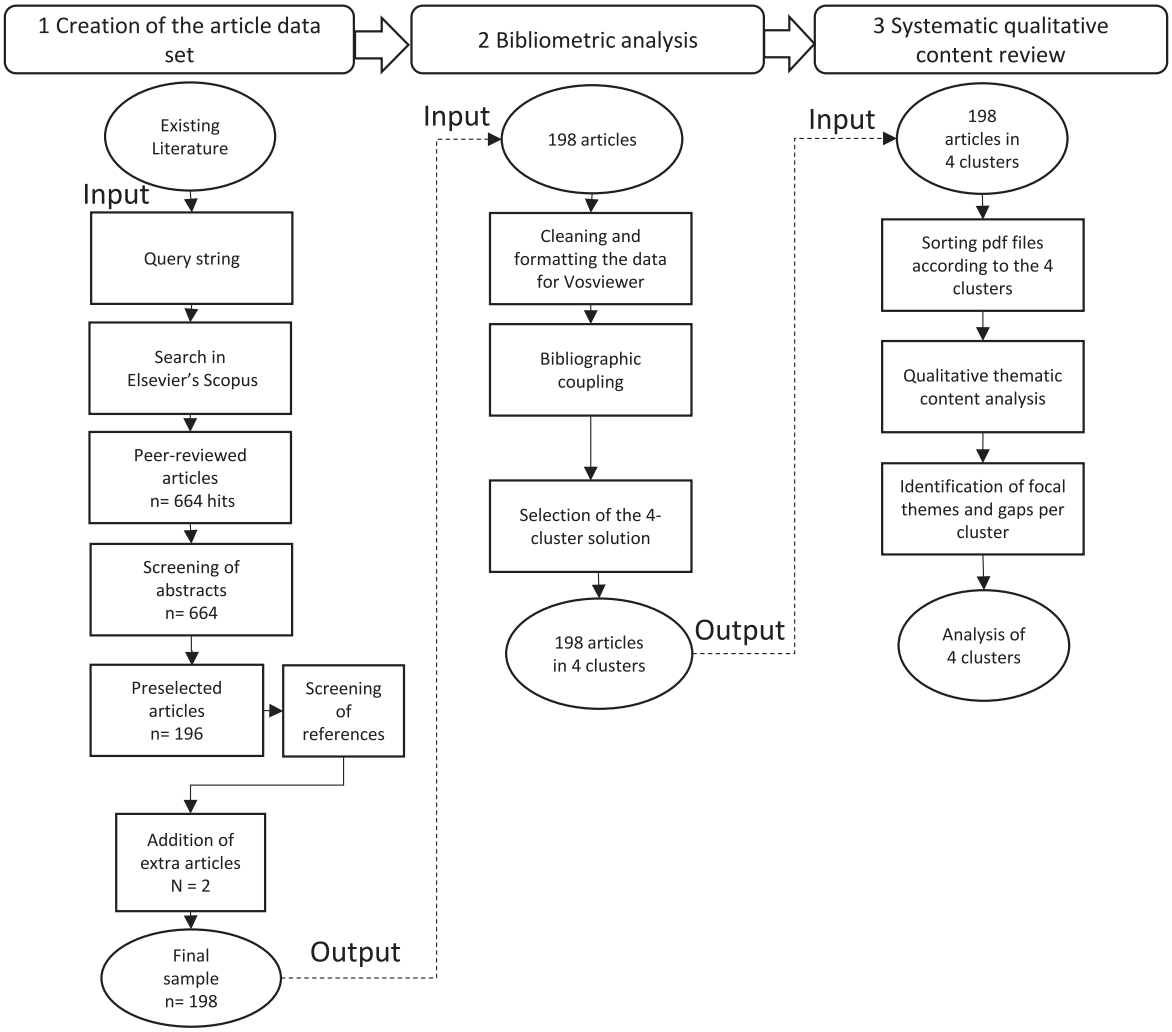

Fig. 1. Review process.

following the three-step process described in Fig. 1 (Kohtamäki, Whittington, Vaara, & Rabetino, 2022; Rabetino, Harmsen, Kohtamäki, & Sihvonen, 2018; Voola, Bandyopadhyay, Voola, Ray, & Carlson, 2022) to challenge the unidimensional structure of the field, identify communities (clusters), detect gaps, and suggest future research (Lindgreen, Di Benedetto, & Kock, 2021). We initially searched for a set of preselected keywords in peer-reviewed scholarly articles (published and in press) available in Elsevier's Scopus, which is widely acknowledged as the best tool for literature searches (Rabetino, Kohtamäki, Brax, & Sihvonen, 2021). We utilized a search string created based on the existing literature. We required that selected articles contain one of the following keywords in the title, keywords, or abstract, as alliance learning studies often use these keywords: TITLE-ABS-KEY "strategic allianc*", "inter-organizational network*", "inter-organizational network*", "inter organizational network*", "organizational network*", "organizational network*", "business network*", "business net*", "relational*", "partnership*", "buyer-seller relationship*", "supplier-customer*", "manufacturer-customer*", and "provider-customer*". In addition, as the study focuses on alliance learning, we required that the title, keywords, or abstract include the keyword "learning*". Additionally, we limited the search to AJG3 and AJG4(*) journals in the management, marketing, strategy, organization, entrepreneurship, operations and supply management, and information systems domains. In addition, the journal "The Learning Organization" was included in the search, as it had published many related articles ($n = 9$).

The first round of searching returned 664 hits. As a robustness check of our search strategy, we also searched explicitly for "relationship learning*", "relational learning*", "network learning*", "alliance learning*", and "joint learning*" combined with the previous network-related search terms, which resulted in only 64 articles. Thus, we used the 664 initially identified papers and manually reviewed them to ensure that we covered all relevant articles. Based on the abstract review, we removed papers that did not contribute to the alliance learning literature but mentioned learning, were published in conference proceedings, or had not been published in top-tier journals as defined in our search criteria. Most papers were removed because they did not focus on alliance, network, or relationship learning. The comprehensive search provided better results than our robustness check and was utilized. The resulting sample included 198 articles, and only a handful of studies were added as they could be used to enrich the discussion. They were found based on screening the reference list of the reviewed papers but could not be found based on the search terms used. We felt that these approximately ten papers could be used to inspire valuable methodological or learning-related discussions in the field of alliance learning. The 198 analyzed studies were derived from 50 journals. Table 1 describes the 20 journals that represented the highest publication numbers in the data.

Next, we used VOSviewer software (Waltman, van Eck, & Noyons, 2010) to conduct a bibliographic coupling of the 198 documents to structure the existing research on alliance learning. This method, in which documents' relatedness is established based on the number of references they share, is recommended to map a current research front within a limited timeframe. Thus, it was more accurate and less biased toward the past than the co-citation analysis (Zupic & Čater, 2015). Consequently, bibliographic coupling is appropriate for mapping the current trends in a field and understanding future research priorities (Vogel & Güttel, 2013). The method is suitable for this paper, which aims to understand the present and, particularly, the future of alliance learning as a topic rather than detailing the intellectual structure based on past attainments. In short, the bibliometric exercise resulted in four clusters that included 20 articles.

Following the bibliometric analysis, we conducted a systematic review of the content of the chosen articles by thoroughly reading the entire papers comprising each cluster and then coding them based on their primary research ideas and contents. So, the four clusters are labeled as follows: (1) learning in strategic alliances, (2) relationship learning, (3) learning in innovation networks, and (4) learning in social networks. These clusters are broad and have blurry boundaries, and there is much variation around the central themes. As a result, the proposed labels are summaries reflecting common citation structures rather than conclusively characterizing each cluster.

Table 1
Twenty journals had the highest number of publications in the data.

Journal name	Number of publications in the data
Industrial Marketing Management	22
Strategic Management Journal	16
Organization Science	14
Journal of Business Research	13
Research Policy	10
European Management Journal	9
Learning Organization	9
Academy of Management Journal	7
Journal of Management Studies	7
R and D Management	7
Journal of Product Innovation Management	6
Organization Studies	6
Administrative Science Quarterly	5
International Journal of Production Economics	5
Journal of Business Ethics	5
Long Range Planning	5
Human Relations	4
International Journal of Operations and Production Management	4
British Journal of Management	3
Journal of Business Venturing	3

3. Structuring the alliance learning research

Alliance learning research builds on the large body of strategic alliance research. The increased outsourcing, digitalization, and globalization of customer, supplier, and competitor markets (He et al., 2020) indicate that alliance learning as a concept has gained increasing attention since the early 1990s (Hamel, 1991; Jarillo, 1988). During the 1990s, alliance learning research increased significantly following the success of strategic alliance research, which tapped into the challenges faced by companies managing alliances (Dyer & Kale, 2001) and strategic networks (Jarillo, 1988; Möller & Svahn, 2006). Research on strategic alliances, strategic networks, and interorganizational networks has grown into a large research field where alliance learning can occupy a small but important subfield. The alliance learning field can be positioned into strategic alliance research. When structuring alliance learning research, we find four research streams. These four are all substreams of alliance learning research, which we identify based on our analysis of the clustered papers as 1) learning in strategic alliances, 2) relationship learning, 3) learning in innovation networks, and 4) learning in social networks. Fig. 2 shows the cumulative number of publications in each alliance learning research stream, including the selected 198 papers.

To cluster the papers, we used bibliometric coupling. Fig. 3 presents each paper's first author name and publication year. In the figure, color reflects the cluster, the size of the circle indicates the number of citations the paper has received in these data, the distance reflects the number of shared citations in the lists of references, and the visible line indicates the highest numbers of similar citations these papers share. As such, the analysis produces four clusters, whose validity is supported by our reading of the papers comprising those four clusters. As is typical for this approach, some studies are located at the borderline between various clusters. For instance, Powell et al.'s (1996) study on innovation networks is included in the learning in strategic alliances cluster, as studies in this cluster heavily cite the paper. However, it is topically at the borderline between learning in strategic alliances and learning in the innovation networks cluster. It is cited in every cluster and is the most

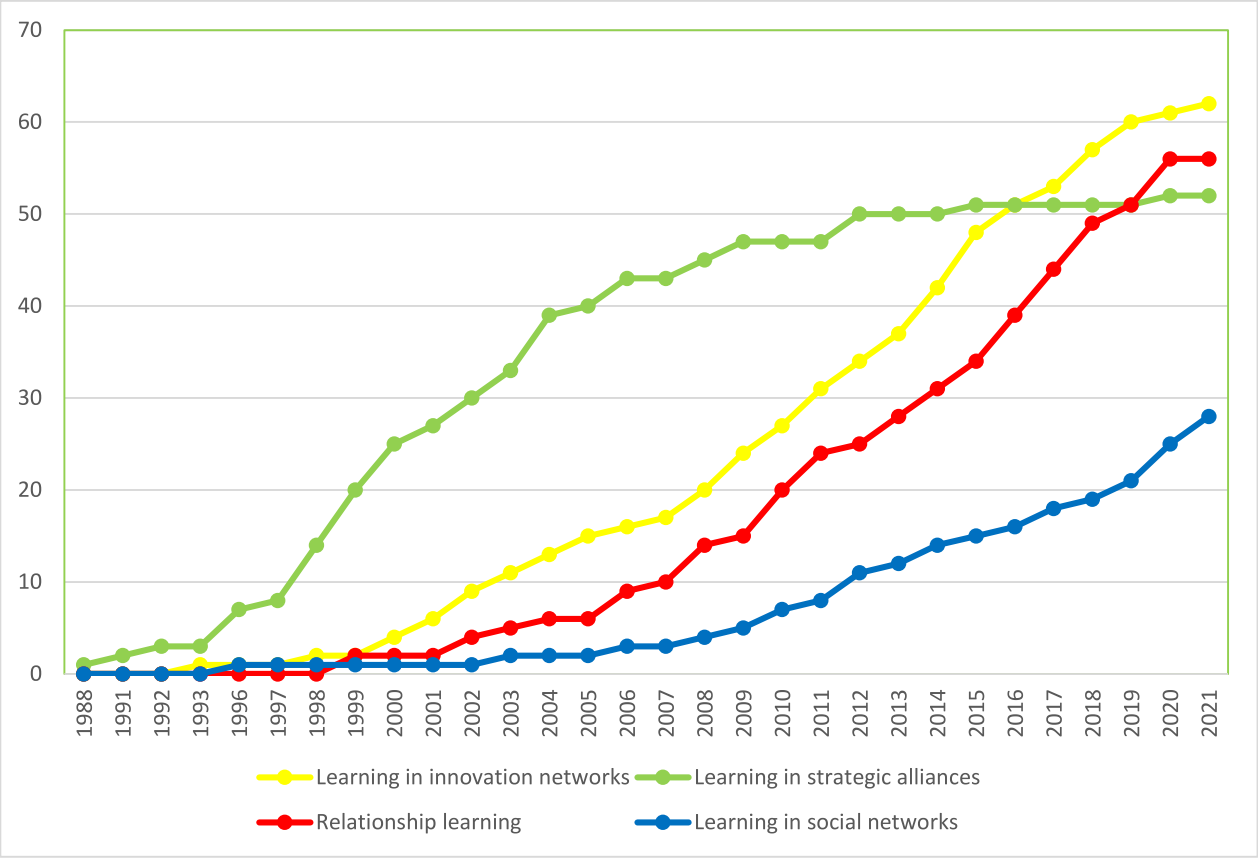

Fig. 2. Number of articles per cluster.

cited paper in the alliance learning literature.

3.1. Learning in strategic alliances

3.1.1. Central topics

Building on the relational view, learning in strategic alliances research was established during the 1990s utilizing various strategic management theories. The cluster traces back to Powell, Hamel, Doz, Dyer, Singh, Kale, and Gulati, who built on strategic alliance research, sometimes coined as the relational view (Dyer & Singh, 1998). These studies (green color in Fig. 3) approach firms' learning capability in strategic alliances from the perspective of firm strategy, first and foremost seeing alliances as a potential source of competitive advantage (Hamel, 1991; Ireland et al., 2002), with an emphasis on learning from alliances and networks (Knight, 2002) and management practices that enable alliance learning (Dyer & Kale, 2001; Kale et al., 2001); moreover, they highlight firm-level factors that enable value capture from alliances, such as absorptive capacity (Lubatkin, Florin, & Lane, 2001). The studies on learning in strategic alliances cluster are particularly notable due to their strategic emphasis. This emphasis means that these studies often see alliances as a source of learning, conceptualizing learning as an opportunity to win the "learning race" (Khanna, Gulati, & Nohria, 1998: 208), and viewing alliances as a source of resources, capabilities, and competitive advantage. This approach to strategic alliances is intended to balance the paradox between the 'learning race' to learn from an alliance and the approach of 'learning together through joint processes' to knowledge sharing, integration, and internalization (Larsson, Bengtsson, Henriksson, & Sparks, 1998; Lubatkin et al., 2001). In all four clusters, the studies extend learning from the organizational level to the dyadic or network level, where learning occurs among organizations in strategic networks (Möller & Svahn, 2006). For instance, Powell et al. (1996) study firm learning in innovation networks, and Gulati (1999) focuses on firms governing vertical alliance networks. Moreover, Langfield-Smith and Greenwood (1998) investigate Toyota's routines in developing its buyer-supplier relationships. Regarding influencing factors, Ariño and De La Torre (1998) study collaborative ventures, and Ingham and Mothe (1998) study R&D partnerships. These examples reflect the variety in this stream of literature.

3.1.2. Theoretical background

In this cluster, studies build on the relational view and utilize a variety of strategic management theories, such as the resource-based view (Carayannis, Alexander, & Ioannidis, 2000; Möller & Svahn, 2006; Simonin, 1999), the transaction cost approach (TCA) (Zollo et al., 2002), new institutional theory (Kale, Singh, & Perlmutter, 2000), social capital and trust (Langfield-Smith & Greenwood, 1998), evolutionary economics (Ariño & De La Torre, 1998) and even the interaction approach (Benson-Rea & Wilson, 2003; Hoholm & Olsen, 2012), to study the processes and enablers of alliance learning. The largest number of studies utilize organizational learning and the resource-based view, whereas the other theories are utilized to a much lower extent. Many studies explore strategic alliances pragmatically, utilizing concepts from one or more theories. Studies tend to emphasize contributions to the field of strategic alliances rather than contributions to a specific strategy content-related theory.

Studies in this cluster provide knowledge and details of multiple antecedents of alliance learning. Many studies in this cluster use the resource-based view to reflect the role of strategic alliances as a source of valuable resources (Hitt, Dacin, Levitas, Arregle, & Borza, 2000), emphasizing dynamic capabilities in utilizing network resources. To complement the resource-based view, Powell et al. (1996) highlight that innovations often emerge between networked firms rather than within firms. Powell et al. (1996) emphasize the importance of network centrality for alliance learning and the serendipitous nature of alliance

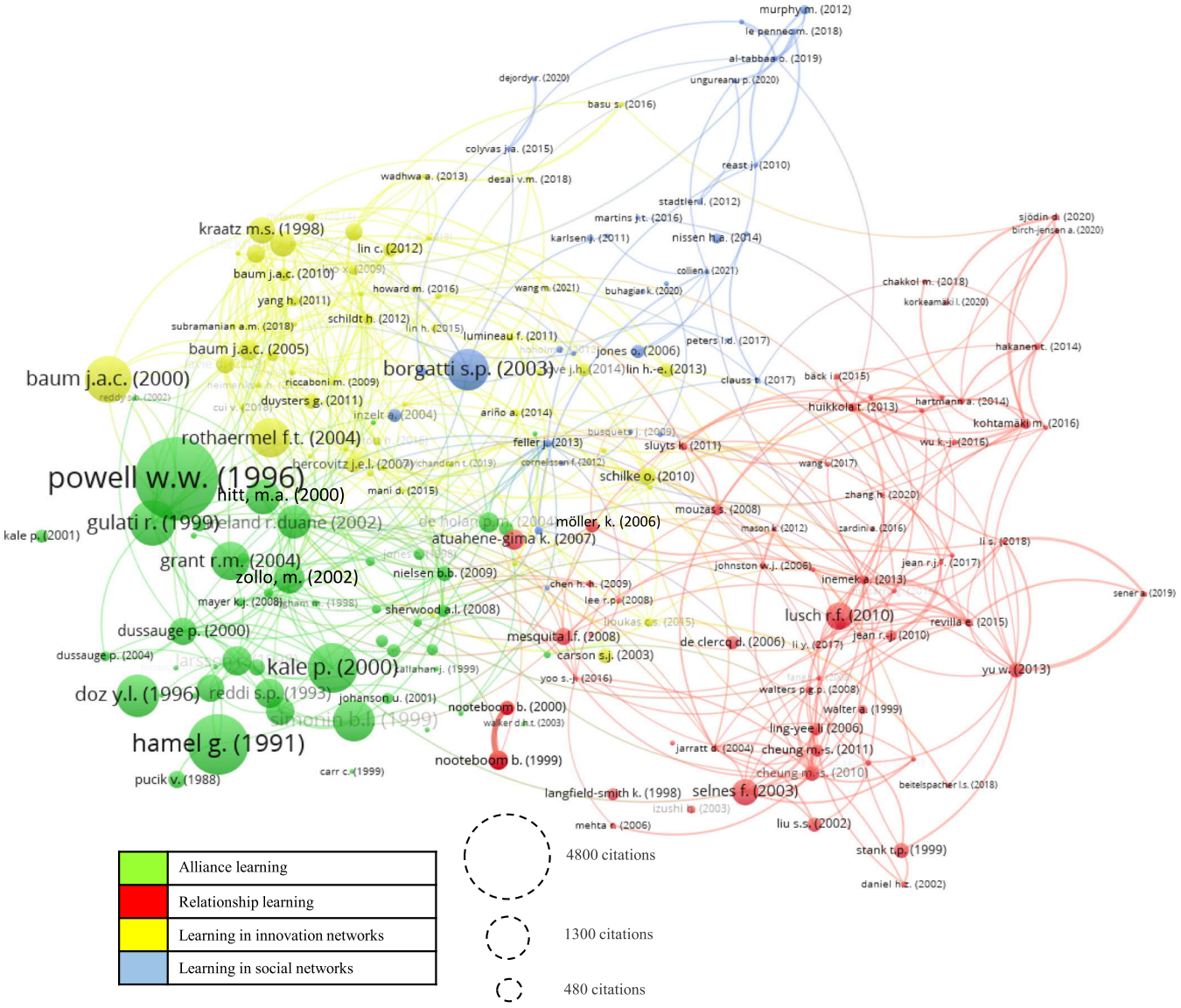

Fig. 3. Structure of the alliance learning literature.

learning to understand the challenge of managing networks, particularly innovation networks. According to their research, network centrality explains learning, reminding us that alliance learning is emergent and challenging to manage. Then, connectedness is critical for firm-level learning, and according to Grant and Baden-Fuller (2004), alliances improve knowledge access, knowledge integration, and the efficiency of knowledge exploitation. However, knowledge transfer costs are significantly moderated by the similarity of knowledge transferred between partners (Buckley, Glaister, Klijn, & Tan, 2009). Accessing complementary knowledge is cheaper than transferring very distinct competencies. Furthermore, trust is easier to establish when partners understand each other's competences. Alliance experience has been identified as a significant predictor of alliance success (Zollo et al., 2002).

In addition to the resource-based and relational views, the new institutional theory is used by studies in this cluster to discuss relational governance, transaction costs, and the role of trust and social capital (Nooteboom, 2000). Relational structures and trust are seen as enablers of effective learning collaborations, alliance experience, or experience from previous knowledge exchanges (Langfield-Smith & Greenwood, 1998). There is a long-persisting debate about the role of different relational governance mechanisms, including the tensions between control, trust, and the market, in understanding how to manage alliances for learning and innovation. The role of trust has been debated in the alliance literature; studies adopting TCA see trust as creating the potential for betrayal, while others argue that trust could facilitate learning while limiting an alliance partner's opportunistic behavior (Kale et al., 2000). Since the infancy of the alliance learning approach, scholars have done much to study the practices that enable alliance learning (Kale et al., 2001), such as dedicated alliance functions (Ireland et al., 2002; Kale, Dyer, & Singh, 2002), alliance management practices (Dyer & Nobeoka, 2000; Ireland et al., 2002; Kale & Singh, 2009), coaching practices (Kale et al., 2001), social capital, trust and positive reinforcement (Ariño & De La Torre, 1998; Kale et al., 2000), or supplier associations, consulting groups, and learning teams (Dyer & Hatch, 2004; Sako, 2004), emphasizing the intentional development of strategic networks (Möller & Svahn, 2006).

The studies in this cluster stem from various strategy perspectives highlighting the role of learning processes in strategic alliances pertaining to generating economic rents while contrasting learning with transaction costs, which are affected by trust and social capital that lubricate learning interactions (Nooteboom, 1999). Thus, the studies in

this cluster highlight the role of knowledge access and acquisition, considering alliances as a central tool in winning the 'learning race' through the creation of new knowledge as well as relational (Dyer & Singh, 1998) and economic rents (Grant & Baden-Fuller, 2004). Moreover, alliances vary, and some of the variety between various alliance learning processes can be understood when considering the nature of the alliance. For instance, Möller and Svahn (2006) highlight the distinction between current business nets, business renewal nets, and emerging business nets. The level of innovativeness in the collaboration impacts the organization and learning in networks. Dussauge, Garrette, and Mitchell (2000, 2004) highlight the nature of collaboration by separating link and scale alliances; scale refers to alliances that enhance preexisting resources, whereas link alliances refer to alliances where companies' capabilities differ. Link alliances lead to greater learning outcomes but may be more difficult to manage, whereas scale alliances are easier to manage but hold less potential for learning and development. Yan and Child (2002) found that in Sino-British joint ventures, partners approached alliances differently, had different expectations about the benefits of the alliance, and, therefore, used varying tactics to achieve their strategic targets. Understanding the partners' motivation in the alliance is critical for managing the alliance so that partners can achieve their targets. We can conclude that the management and organization of alliance relationships should acknowledge the complex learning context. To achieve alliance outcomes, partners should find a way to work together.

Regarding the outcomes of alliance learning, studies emphasize the role of absorptive capacity as a capability to win the learning race (Forrest, 1996; Inkpen, 1998). Alliance learning should be supported by absorptive capacity to facilitate outcomes such as efficiency and productivity (Buckley et al., 2009), learning (Kale et al., 2000), innovations (Nooteboom, 1999), alliance success (Taylor, 2005; Zollo et al., 2002), higher market share (Dussauge et al., 2004), and firm performance (Yeoh, 2009).

3.1.3. Methodological emphasis

Concerning the methodologies used in learning in the strategic alliances cluster, 71% of the studies in this cluster are empirical, 46% use qualitative approaches, and 25% use quantitative approaches; moreover, the cluster includes a substantial number of conceptual papers (25%). Among the qualitative studies, 57% use multiple-case data, 39% use single-case data, and 4% use interview data. Among the quantitative studies, 77% use survey data, and 23% use database data (not surveys). This cluster includes many conceptual papers that theorize about phenomena, which is important. Also, many studies use case-based approaches, but there are also a large number of papers using survey-based methods. The empirical studies vary in terms of context, with many focusing on strategic alliances in vertical supplier relationships within product manufacturing sectors, such as car manufacturing (Dussauge et al., 2004) or ICT sectors (Santangelo, 2000), but others concentrating on R&D alliances in various sectors such as biotechnology (Powell et al., 1996; Zollo et al., 2002). For instance, Oliver (2001) uses quantitative data from biotechnology firms and demonstrates how the inability to form alliances was associated with the organizational death of a dedicated biotech firm. Gulati (1999) uses interviews and a database of American, European, and Japanese firms. Kale et al. (2000) use a large sample of survey data to test their research model across industries (pharmaceuticals, computers, electronics, and services). Greenwood and Langfield-Smith (1998) use a case study of Toyota. Table 2 synthesizes the comparative knowledge regarding central topics, theoretical backgrounds, antecedents, processes, outcomes, methodological emphasis, and the five most cited studies in each cluster.

3.2. Relationship learning

3.2.1. Central topics

Research in the relationship learning cluster reflects the core of alliance learning research, emphasizing learning in dyadic industrial and business-to-business relationships. Relationship learning research emphasizes the marketing perspective, focusing specifically on distribution chains and learning in manufacturer-distributor relationships as a context. This stream includes studies focusing foremost on the concept and process of relationship learning, operationalizing and exploring the relational learning process, its antecedents, and outcomes.

The concepts used in this cluster include relationship learning (Selnes & Sallis, 2003), relational learning (Smirnova et al., 2018), and joint learning (Bäck & Kohtamäki, 2016; Huikkola et al., 2013). These studies primarily analyze learning in a relationship as a joint activity between two alliance partners (Selnes & Sallis, 2003: 80). The roots of the relationship learning construct are in the organizational learning literature, and the relationship learning process can be seen as reflecting the organizational learning process. The concept and measurement method developed by Selnes and Sallis (2003) has been meaningful for this cluster, considering that many studies tend to utilize the same conceptualization and measurement of their method (Cheung et al., 2010; Kohtamäki & Partanen, 2016; Ling-yee, 2006; C. Yang & Lai, 2012).

3.2.2. Theoretical background

Many studies approach learning as a central value-creating mechanism in strategic alliances, without which value will not be realized, e.g., in R&D collaboration (Lusch et al., 2010). Hence, relationship learning is closely linked to the value creation and innovation concepts. A relationship learning paper building on service-dominant logic (SDL) is the most cited paper in this cluster (Lusch et al., 2010). Moreover, relationship learning papers use various theories in marketing and supply management, such as relational governance, relational capabilities, and the interaction approach of marketing (Håkansson & Shenota, 1995). Many relationship learning studies engage with the concept of value. Lusch et al. (2010) consider learning in value networks a central mechanism enabling adaptation, value creation, and competitive advantage. According to them, learning is a significant enabler of value creation. Kohtamäki and Partanen (2016) treat relationship learning as a central mechanism in value creation, study the effect of R&D exchanges on relational profitability and find that relationship learning positively moderates the impact of R&D services on suppliers' profitability in a customer relationship. Cheung et al. (2010) argue for the strategic role of relationship learning in supplier-customer relationships. They find that relational governance, partner compatibility, and idiosyncratic investments play an important role in relationship learning, which improves relational value.

Regarding the antecedents, enablers, or drivers (Chen, Lee, & Lay, 2009) of relationship learning, many studies turn their attention toward the role of relational governance mechanisms, including trust, relationship structures, or market governance, in shaping relationship learning. Again, studies also cover alliance management capabilities as central enablers (Sluyts, Matthyssens, Martens, & Streukens, 2011). For instance, Jean et al. (2010) demonstrate the enabling effects of innovativeness, trust, and technological uncertainty on relationship learning and the moderating role of relational communication culture. As they are difficult to formally coordinate, innovation collaborations are governed by relational trust. Li, Zhao, and Huo (2018) demonstrate that supplier coordination impacts manufacturer and customer coordination and supplier innovativeness. Supplier innovativeness fosters manufacturer innovativeness, facilitating performance and customer coordination. Inemek and Matthyssens (2013) demonstrate how buyer assistance combined with a lower-tier position, joint product development, and cooperative ties impact supplier innovativeness. Schilke and Goerzen (Schilke & Goerzen, 2010) use dynamic capabilities in conceptualizing alliance management capabilities, providing a measurement method for the construct of alliance management capabilities and demonstrating how alliance learning (alliance experience) and alliance structures may lead to improved alliance management, which leads to higher alliance

Table 2
Comparing the clusters of alliance learning studies.

	Learning in strategic alliances	Relationship learning	Learning in innovation networks	Learning in social networks
Central topics	-Learning from strategic alliances (Learning race) -Learning in strategic alliances, such as supplier networks and R&D networks -Strategy emphasis	-Relationship learning (joint learning) in supplier-customer relationships and provider-distributor relationships -Industrial marketing emphasis	-Learning is part of an ambidextrous innovation process shaped by knowledge and capability asymmetries where the network acts as a source of information, capabilities, and risk reduction. -Innovation emphasis	-Interorganizational learning through social interactions and mechanisms -Learning in public-private relationships, governmental networks -Organizational emphasis
Theoretical background	-Organizational learning -Resource-based view -Dynamic capabilities -Transaction cost approach -Institutional theory -Interaction approach (IMP) -Actor-Network Theory	-Relationship learning -Relational governance -Organizational learning -Resource-based view -Interaction approach (IMP) -Dynamic capabilities	-Ambidextrous innovation and dynamic capabilities -Explorative and exploitative learning in alliances and alliance portfolios	-Public-private partnerships -Social networks (social enterprises, NGOs, public-private partnerships)
Antecedents	-Trust (Kale et al., 2000) -Alliance experience (Gulati, 1999) -Partner-specific experience (Zollo et al., 2002) -Network centrality (Powell et al., 1996) -The nature of alliance or network (Buckley et al., 2009; Möller & Svahn, 2006)	-Relationship-specific investments (Inemek & Matthyssens, 2013) -Relationship structures (Schilke & Goerzen, 2010) -Trust (Jean, Sinkovics, & Kim, 2010; Selnes & Sallis, 2003) -Social capital (Atuahene-Gima & Murray, 2007) -Relational capital (Huikkola, Ylimäki, & Kohtamäki, 2013) -Unlearning (Cepeda-Carrión, Leal-Millán, Ortega-Gutierrez, & Leal-Rodriguez, 2015) -Adaptive sales and relationship development (Beitelspacher, Baker, Rapp, & Grewal, 2018; Walter, 1999) -Institutional guidelines (Chakkol, Selviaridis, & Finne, 2018)	- Network composition, partner selection, identification, and integration (Baum, Cowan, & Jonard, 2010), - Alliance portfolio configuration (Duysters & Lokshin, 2011; Heimeriks, 2010), - Alliance experience (Ravichandran & Giura, 2019), or contractual/ partnership experience (Lioukas & Reuer, 2015), - Board diversity (M. Li, 2019), - Technological relatedness (Howard, Steensma, Lyles, & Dhanaraj, 2016; Steensma, Howard, Lyles, & Dhanaraj, 2012), and technological distance (Subramanian, Bo, & Kah-Hin, 2018), - Partner similarity (Luo & Deng, 2009; Mazloomi Khamseh, Jolly, & Morel, 2017), - Knowledge base homogeneity (Subramanian et al., 2018).	-Divergent institutional logics and heterogeneity (Ahmadsimab & Chowdhury, 2021; Janowicz-Panjaitan & Noorderhaven, 2008; Kunttu & Neuvo, 2019; Nissen, Evald, & Clarke, 2014; Ungureanu, Bertolotti, Mattarelli, & Bellesia, 2020) -Personal characteristics (Collien, 2021) -Trust and social capital & relations (Busquets, Rodon, & Wareham, 2009; Colyvas & Maroulis, 2015a; Stadtler & Probst, 2012) -Investments (Karlsen, Isaksen, & Spilling, 2011b; Lorange, 1996; Martins, 2016) -Relational governance (Kohtamäki, 2010) -Proximity (Zhu, Wang, Wang, & Nastos, 2020)
Processes	-Learning process (Ghosh, 2004) -Knowledge absorption, absorptive capacity (Lubatkin et al., 2001; Yeoh, 2009) -Exploratory and exploitative learning (Hoholm & Olsen, 2012)	-Relationship learning process: Information sharing, interpretation (sensemaking), integration into relational memory (Selnes & Sallis, 2003) -Relational sensemaking process (Einola, Kohtamäki, Parida, & Wincent, 2017)	-Exploratory and exploitative learning processes (Desai, 2018; Heimeriks, 2010; Hottenrott & Lopes-Bento, 2016; Kraatz, 1998; Riccaboni & Moliterni, 2009) -Absorptive capacity (Schildt, Keil, & Maula, 2012), -Teachability of task-related skills and colocation of tasks (information processing) (Carson, Madhok, Varman, & John, 2003), -Codifying alliance experience (Heimeriks, Bingham, & Laamanen, 2015),	-Knowledge acquisition, sharing, and interpreting through social processes (Clauss & Kesting, 2017; Janowicz-Panjaitan & Noorderhaven, 2008; Kunttu & Neuvo, 2019) -Learning in social exchanges (e.g., processes, modes, routines) (Colyvas & Maroulis, 2015a; Kohtamäki, 2010) -Power of social bases (Collien, 2021) -Socialization mechanisms (Feller, Parhankangas, Smeds, & Jaatinen, 2013; Martins, 2016) -Social cooperation & collaboration (Nissen et al., 2014)
Outcomes	-Efficiency and productivity (Buckley et al., 2009) -Learning (Kale et al., 2000) -Innovations (Nooteboom, 1999) -Alliance success (Taylor, 2005; Zollo et al., 2002) -Higher market share (Dussauge et al., 2004) -Firm performance (Yeoh, 2009)	-Alliance learning -Relational performance (Revilla & Knoppen, 2015) -Dynamic competitive capabilities (Cheung, Myers, & Mentzer, 2010) -Firm performance (Smirnova, Rebiazina, & Khomich, 2018) -Alliance portfolio performance (Schilke & Goerzen, 2010)	- Technological exploration (M. Li, 2019), - Innovativeness (Duysters & Lokshin, 2011), - Innovation performance (Lavie, Kang, & Rosenkopf, 2011; Love, Roper, & Vahter, 2014) - Innovation network success (Baum et al., 2010; Baum, Calabrese, & Silverman, 2000; Lavie & Miller, 2008) - Value creation (Mani & Barua, 2015), - Alliance portfolio performance (Heimeriks, 2010).	-Learning (behavior) (Buhagiar, 2020; Janowicz-Panjaitan & Noorderhaven, 2008; Kohtamäki, 2010) - Innovation (Murphy, Perrot, & Rivera-Santos, 2012; Nissen et al., 2014; Ungureanu et al., 2020) -Adaptability & change (Busquets et al., 2009; DeJordy, Scully, Ventresca, & Creed, 2020) -Capability (Feller et al., 2013) -Advantage (Karlsen et al., 2011b) -Value creation (Le Pennec & Raufflet, 2018) -Performance (Al-Tabbaa, Leach, & Khan, 2019)
Methodological emphasis	-Emphasis on quantitative research with use of preexisting databases -Multiple and single case studies	-Emphasis on quantitative survey research (relationship learning concept) -Interpretivist case research	-Emphasis on quantitative research in knowledge-oriented industries, with wide use of preexisting databases	-Emphasis on qualitative research in complex, novel, and unexplored contexts

(*continued on next page*)

Table 2 (*continued*)

	Learning in strategic alliances	Relationship learning	Learning in innovation networks	Learning in social networks
Some example studies (5 most cited in each cluster; Alphbetical order)	(Doz, 1996; Gulati, 1999; Hamel, 1991; Kale et al., 2000; Powell et al., 1996)	(Atuahene-Gima & Murray, 2007; Lusch, Vargo, & Tanniru, 2010; Schilke & Goerzen, 2010; Selnes & Sallis, 2003; Yu, Jacobs, Salisbury, & Enns, 2013)	(Baum et al., 2000; Baum, Rowley, Shipilov, & Chuang, 2005; Beckman & Haunschild, 2002; Kraatz, 1998; Rothaermel & Deeds, 2004)	(Borgatti & Cross, 2003; Feller et al., 2013; Jones & Macpherson, 2006; Murphy et al., 2012; Nissen et al., 2014)

portfolio performance. In their study on Chinese joint ventures, Atuahene-Gima and Murray (2007) reveal the critical role of social capital for exploratory and exploitative innovation, which further enhances new product performance. Concerning social capital, they find solidarity particularly meaningful for exploitative learning while emphasizing the role of strategic consensus for exploratory learning.

In this cluster, the concept of relationship learning builds on the process of knowledge sharing, interpretation, and integration (Selnes & Sallis, 2003: 80). Selnes and Sallis (2003) developed a measurement method for relationship learning and specifically studied the role of trust. They find that the performance effect of relationship learning is moderated by trust, which should be at an optimal level – high enough to enable constructive discussions but not so high that strong social bonds, such as friendship, would prevent difficult discussions in the relationship. Chakkol et al. (2018); Chakkol et al. (2018) find the crucial role of collaboration standards for related learning across complex projects and partners. Some studies also utilize explorative and exploitative learning (L. Wang, Terziovski, Jiang, & Li, 2017), while others concentrate on sensemaking (Einola et al., 2017).

Regarding the outcomes of relationship learning, studies address outcomes for customers (Cheung et al., 2010), manufacturers (Cheung et al., 2010; Kohtamäki & Partanen, 2016), distributors (Li, Cui, & Liu, 2017; López Sánchez, Santos Vijande, & Trespalacios Gutiérrez, 2011), or relationships (Cheung et al., 2010; Selnes & Sallis, 2003). Cheung et al. (2010) consider the roles of various enablers of relationship learning and the effect of relationship learning on relationship value. On the supplier side, all three learning dimensions significantly impact relationship performance. On the buyer side, knowledge sharing and knowledge integration have a positive and significant effect, while the effect of joint sensemaking is nonsignificant. Overall, the study demonstrates the impact of relationship learning on relational performance. Sjödin, Parida, Kohtamäki, and Wincent (2020) find relationship learning to be a central component of an agile cocreation process and an enabler of service innovations. Yu et al. (2013) provide evidence on the role of value system integration in the financial performance of the focal firm. According to their study, internal integration facilitates upstream supplier integration, which positively impacts firm financial performance. Moreover, internal integration enables customer integration and satisfaction, which positively impact the financial performance of the focal firm. Smirnova et al. (Smirnova et al., 2018) find effects on relational performance, whereas Schilke et al. identify impacts on alliance portfolio performance (Schilke & Goerzen, 2010).

3.2.3. Methodological emphasis

The relationship learning approach is used in a strong body of quantitative research that focuses on learning in customer relationships and uses survey research, structural equation modeling, and measurement testing and development. Specifically, 93% of all the papers in this cluster are empirical: 71% of these relationship learning studies use quantitative methods, 20% use qualitative methods, 2% use mixed methods, and 7% are conceptual. Among the qualitative studies, 55% use a multiple-case study, 36% use a single-case study, and 9% use interview data. Notably, many relationship learning studies use quantitative methodologies, particularly survey research methods. The work of Selnes and Sallis (2003), which is one of the seminal studies in this cluster and the most cited empirical study in the cluster, develops and tests a measurement method for relationship learning. Since then, the method has played an important role in leading the empirical efforts in this cluster, and the developed measurement method has been utilized multiple times (Cheung et al., 2010; Cheung, Myers, & Mentzer, 2011; Kohtamäki & Partanen, 2016). There are also some multiple-case studies in this stream; again, most of these build on a realist onto-epistemological orientation. This stream is closely linked to industrial marketing-oriented approaches and has some weak links to the so-called interaction approach in industrial marketing. Scholars of the interaction approach have become recognized and cited, but only a few relationship learning studies have been conducted using interpretivist approaches. This cluster could benefit from additional qualitative and conceptual works focusing specifically on the relationship learning process (Huikkola et al., 2013). In terms of industry, variety exists, studies using cases from manufacturing (Bäck & Kohtamäki, 2015; Hipkin & Naudé, 2006), retail (Beitelspacher et al., 2018), knowledge-intensive businesses (Hakanen, 2014), and franchising (Solís-Rodríguez & González-Díaz, 2019).

3.3. Learning in innovation networks

3.3.1. Central topics

The cluster focuses on learning in knowledge-based alliances and innovation-oriented networks. The research touches upon a few particular topics, which emerged at the beginning of the new millennium (Baum et al., 2000; Kraatz, 1998) and steadily developed over the last two decades. A primary concern is learning from partners and its impact on innovation performance, touching upon related benefits such as sharing knowledge, resources, costs, and risks and combining complementary skills. Thus, the locus of innovation is centered on networks of learning (Powell et al., 1996), where asymmetries in knowledge and capability shape learning in innovation networks as part of an ambidextrous innovation process, where the role of partners' absorptive capacity is key to the process. In this context, the network acts as a source of information, capabilities, and risk reduction.

The central topics include appraising the learning effects and processes of developing networks, collaborative and contractual routines, and knowledge-sharing mechanisms concerning the diffusion of knowledge and innovation (Hottenrott & Lopes-Bento, 2016). The articles in this cluster discuss various relational contracts, from franchising to ownership links and collaborative arrangements such as partnerships, outsourcing, joint R&D projects, and technical collaborations. Remarkably, scholars also discuss the particularities of contracts and the distinctions between alliances and other interfirm relationships (Lumineau, Fréchet, & Puthod, 2011). Although most of the studies involve an international context, the cross-border context is explicit in many articles (Phene & Tallman, 2014; M. Wang, Mühlbacher, Wittmann, & Perrett, 2021). In this context, some articles focus on learning in particular settings, such as IT outsourcing (Mani & Barua, 2015; Ravindran, Susarla, Mani, & Gurbaxani, 2015) or franchising (Solís-Rodríguez & González-Díaz, 2019), and from specific partners such as universities (Bercovitz & Feldman, 2007) and external corporate ventures (Basu, Phelps, & Kotha, 2016; Schildt, Maula, & Keil, 2005; Wadhwa & Basu, 2013). Many recent studies consider learning from the perspective of SMEs (Aharonson, Bort, & Woywode, 2020; Subramanian et al., 2018) and new ventures (Milanov & Fernhaber, 2014).

3.3.2. Theoretical background

Showing a strong orientation toward strategic and innovation management, the research in this cluster is underpinned by various theories, following the established literature on alliance management. However, most papers do not use or contribute to a particular theory but elaborate conceptual frameworks by incorporating various concepts and approaches. Naturally, many studies use notions from organizational learning (OL) research, particularly concepts such as ambidexterity, exploration and exploitation (Bercovitz & Feldman, 2007; Lavie et al., 2011; Rothaermel & Deeds, 2004; Schildt et al., 2005), absorptive capacity (Lin, Wu, Chang, Wang, & Lee, 2012; Schildt et al., 2012), and vicarious learning (Aharonson et al., 2020; Milanov & Fernhaber, 2014). However, OL and its related concepts are often combined with notions from one or more theories. For instance, absorptive capacity has been combined with education psychology and social interaction (Steensma et al., 2012). OL has also been combined with social network theory (M. Li, 2019), legitimacy (Desai, 2018), and the knowledge-based view (KBV) (Mazloomi Khamseh et al., 2017; Ravichandran & Giura, 2019). Moreover, Nielsen and Nielsen (2009) blend concepts from OL, KBV, and social capital, whereas Wadhwa and Basu (2013) combine OL with various literature streams, such as corporate venture capital (CVC), external venturing, and real options. The studies in this cluster also use theoretical foundations and concepts from transaction cost economics and/or the resource-based view (Hottenrott & Lopes-Bento, 2016) and/or resource dependence theory (Phene & Tallman, 2014). Finally, some research also builds on Schumpeterian evolutionism (Baum et al., 2010) and institutional theory combined with either the resource-based view (Lavie & Miller, 2008; Lin & Darnall, 2015; Lin, McDonough, Lin, & Lin, 2013; Moatti, 2009) or organizational ecology (Luo & Deng, 2009) to understand learning in interorganizational alliances.

Conceptually, research on learning in innovation networks is intricately linked to learning in strategic alliances (the first cluster). Indeed, particularly influential papers from the first cluster were developed in an innovation context, such as Kale et al. (2000) and Powell et al. (1996). Influenced by concepts such as social capital and ties, the position in a network, network centrality, and network embeddedness (H. Yang, Lin, & Peng, 2011), this cluster often departs from standard assumptions in strategic alliance research (e.g., social capital/social exchange and network-based structure). Indeed, some studies explicitly challenge historically traditional assumptions, notably those related to trust. For instance, Riccaboni and Moliterni (2009) contest the notion of social capital (including structural holes and weak ties) and suggest that the evolution of the underlying technological bases impacts the relational role of firms. Lioukas and Reuer (2015) challenge the core assumption derived from social exchange theory that automatically links trust formation to repeated exchanges. Carson et al. (2003) challenge the idea that improved outcomes accompany trust as a governance mechanism in an interfirm relationship. Thus, both clusters share some antecedents, processes, and outcomes, although the present cluster also shows some particularities. Notably, learning appears to be a process that links antecedents and outcomes, although, as presented next, it can be an outcome in itself and even act as an antecedent.

Research on learning in innovation networks identifies various antecedents of learning and technology transfer in innovation-oriented strategic alliances, such as network composition, partner selection, identification, and integration (Baum et al., 2010), alliance portfolio configuration and complexity (Duysters & Lokshin, 2011; Heimeriks, 2010), alliance experience and knowledge stock (Ravichandran & Giura, 2019), and board diversity (M. Li, 2019), as influencing innovation and learning. Other specific issues, such as knowledge flows and technological relatedness (Howard et al., 2016; Steensma et al., 2012), spillovers (Phene & Tallman, 2014), absorptive capacity (Lin et al., 2012; Schildt et al., 2012), technological distance (Subramanian et al., 2018), and codification (Heimeriks et al., 2015), were also shown to be impactful. Various organizational behaviors (e.g., imitation) (Kraatz, 1998) and strategic practices to acquire, disseminate, develop, and integrate knowledge, particularly given the ambidextrous tension between exploration vs. exploitation (Lavie et al., 2011; Lin et al., 2013; Rothaermel & Deeds, 2004), were also shown to be relevant. Other significant factors include coopetition, information processing (Carson et al., 2003), contractual/partnership experience (Lioukas & Reuer, 2015), partner similarity (Luo & Deng, 2009; Mazloomi Khamseh et al., 2017), and knowledge base homogeneity (Subramanian et al., 2018).

Several factors can moderate, mediate, augment, or diminish the impact of learning through different mechanisms (Arikan & Shenkar, 2013). For instance, Mazloomi Khamseh et al. (2017) show that partners' similarity positively moderates the relationship between their intent to explore and their knowledge utilization. In contrast, dissimilarity negatively moderates the relationship between exploration and partners' knowledge utilization. Lin et al. (2012) show that technological distance moderates (in an inverted-u manner) the effect of the proportion of R&D alliances in an alliance portfolio on innovation performance and that R&D intensity positively moderates the impact of the proportion of R&D alliances in an alliance portfolio on innovation performance. Steensma et al. (2012) found that the higher the level of technological relatedness is, the weaker the relationship between technological relatedness and both the rate of innovation and the increase in the knowledge size after alliance formation. Schildt et al. (2012) argue that absorptive capacity has temporal effects since learning in alliances follows an inverted U-shaped pattern over time, influenced by firm-level and relational factors such as technological similarity and focus and R&D intensity. Ravichandran and Giura (2019) found that the IT intensity of the partners positively moderates the effects of the alliance knowledge stock on the knowledge flow to a focal firm.

In another study, the teachability of task-related skills and the colocation of tasks (information processing) were shown to moderate the effectiveness of trust-based governance (Carson et al., 2003). Hottenrott and Lopes-Bento (2016) confirm an inverted U-shaped relationship between collaboration intensity and innovation. Moreover, alliance complexity was found to have an inverse U-shaped relationship with innovativeness (Duysters & Lokshin, 2011). Subramanian et al. (2018) conclude that knowledge-based homogeneity moderates the inverted U-shaped relationship between technological distance and learning for a sample of small companies in the biotech and pharmaceutical industry. Finally, Heimeriks et al. (2015) found that codifying alliance experience has a contingent impact on the success of an alliance portfolio; it is beneficial in the selection and termination phases but detrimental in the management phase.

Research also explores the impact of learning on relationship-building and contracting processes. For instance, some articles discuss how learning from past partnership experiences leads to contracting capabilities and affects the level of detail in new contracts. They also study the role of different stakeholders involved, partner selection, the characteristics of the negotiation process, the contract duration (Ariño, Reuer, Mayer, & Jané, 2014; Bercovitz & Tyler, 2014; Lumineau et al., 2011), the governance mechanisms (Solís-Rodríguez & González-Díaz, 2019), and the ability to manage the relationships (Ravindran et al., 2015). Learning impacts decision-making, trust-based governance (Carson et al., 2003), and risk acceptance/reduction. Learning (at least some forms of it) is relevant to managing alliance portfolios (Heimeriks, 2010), engaging stakeholders (Desai, 2018), enabling technological transitions (Riccaboni & Moliterni, 2009), organizationally adapting to environmental change (Kraatz, 1998), and explaining innovation and innovative performance (Hottenrott & Lopes-Bento, 2016).

As outcomes, the research in this cluster incorporates the role of complementary knowledge stocks and cooperative learning effects as the foundation of alliance feasibility, capability building, the rate of learning (Schildt et al., 2012), value creation (Mani & Barua, 2015), alliance portfolio performance (Heimeriks, 2010), the likelihood of technological exploration (M. Li, 2019), and some innovation-related factors such as innovativeness (Duysters & Lokshin, 2011), innovation performance (Lavie et al., 2011; Love et al., 2014) and innovation

network success (Baum et al., 2000, 2010; Beckman & Haunschild, 2002; Lavie & Miller, 2008).

3.3.3. Methodological emphasis

The learning in innovation networks cluster includes 62 articles. Empirical articles dominate this sample (93%), whereas conceptual studies only account for 6% of the total. Most studies are quantitative (79%) and use various methods typically founded on large databases (47%). Research is often longitudinal and survey-based (31%). While several articles use regression analysis (of many kinds), panel data (Love et al., 2014) and pooled time-series data (Lavie et al., 2011) are also applied. In contrast, this group of studies does not include a significant share of qualitative (8%) or mixed-method research (6%), with only a handful of articles using single-case longitudinal studies (Lumineau et al., 2011), multiple-case studies (M. Wang et al., 2021), or inductive studies (Basu et al., 2016), typically based on archival data, interviews, and observation. Concerning the data sample, logically, most of the 62 studies in this cluster were conducted in highly dynamic and innovative industries such as biotechnology (Baum et al., 2000; Oliver, 2001; Rothaermel & Deeds, 2004; Traore & Rose, 2003), pharmaceuticals (Cui, Yang, & Vertinsky, 2018; Howard et al., 2016), and ICT/software/computer equipment (Lavie & Miller, 2008; Milanov & Fernhaber, 2014). In this context, the use of patent data is not uncommon.

3.4. Learning in social networks

3.4.1. Central topics

Research in *learning in social networks* focuses on the multilayered nature of learning that occurs at the individual, group, organization, and network levels (Jones & Macpherson, 2006). This cluster views learning especially through the lenses of social interaction, collaboration, and social embeddedness. The themes in this cluster center around the antecedents, processes, and outcomes of social aspects of learning, especially in complex interorganizational contexts such as public-private partnerships (PPPs), governmental networks, cross-sector collaborations, and nonprofit-firm partnerships. The first theme focusing on the antecedents and enablers of learning finds that similar personal characteristics, such as sameness of gender (Borgatti & Cross, 2003), close physical proximity (Zhu et al., 2020), and functioning support structures (e.g., communication channels and systems; see Martins, 2016), facilitate interorganizational learning (e.g., knowledge sharing and mutual sensemaking). The literature highlights the roles of (in)formal structures and activities that shape interorganizational learning (Janowicz-Panjaitan & Noorderhaven, 2008). To bring together fragmented knowledge generated by divergent institutional logics, e.g., socially constructed managerial practices, values, beliefs, rules, behaviors, and assumptions organization members create (Ahmadsimab & Chowdhury, 2021; DeJordy et al., 2020), Peters, Pressey, and Johnston (2017) suggest that the use of personal relationships (e.g., friendship ties), socialization mechanisms (e.g., use of humor) and artifacts (e.g., drawings/charts) can help enhance social integration and cognitive consistency within hierarchical project structures.

The second theme, processes and practices of interorganizational learning, concentrates on relational learning processes and practices that help organizations to (re)create knowledge (Feller et al., 2013) and value (Le Pennec & Raufflet, 2018) across boundaries. These studies generally focus on existing and established learning process models (Feller et al., 2013; Jones & Macpherson, 2006). For instance, Jones and Macpherson (2006) utilize Crossan, Lane, and White (1999) famous 4i model, which comprises 1) intuiting; individual level, 2) interpreting; group level, 3) integrating; organization level, and 4) institutionalizing; organization level, and extend the original model by adding intertwining as the fifth process of learning required at the network level. On the other hand, Feller et al., 2013 test Nonaka and Takeuchi's (1995) model of dynamic knowledge creation in R&D collaborations in the global telecom sector. In sum, both themes discuss social factors (e.g., personal characteristics) and (governance) practices (e.g., use of trust and informal structures) that help organizations manage tensions (Ahmadsimab & Chowdhury, 2021; Kunttu & Neuvo, 2019) and facilitate learning/capability building (Kohtamäki, 2010) in interorganizational cooperations and collaborations (Nissen et al., 2014). Other outcomes that this cluster focuses on social aspects of interorganizational learning processes are related to innovations (Murphy et al., 2012; Nissen et al., 2014), learning (behavior) (Buhagiar, 2020; Janowicz-Panjaitan & Noorderhaven, 2008), competitiveness/advantage (Karlsen et al., 2011b), performance (Al-Tabbaa et al., 2019), adaptability & change (Busquets et al., 2009; DeJordy et al., 2020), value creation (Le Pennec & Raufflet, 2018), and capabilities (Feller et al., 2013).

3.4.2. Theoretical background

The research in the fourth cluster utilizes different management theories to reflect learning across organizational boundaries. In this cluster, many studies build on theoretical premises of the resource-based view and alliance capabilities (Al-Tabbaa et al., 2019), micro-foundations of institutional theory (Colyvas & Maroulis, 2015b; DeJordy et al., 2020), knowledge management theories (Feller et al., 2013), organizational identity theory (Ungureanu et al., 2020), and even contagion theories (Peters et al., 2017). Studies in this cluster borrow established concepts and models from the organizational learning literature, such as absorptive capacity (Murphy et al., 2012), adaptability (Busquets et al., 2009), and ambidexterity (Reast, Lindgreen, Vanhamme, & Maon, 2010), and apply them to interorganizational learning in unexplored contexts to better explain interorganizational knowledge flows and adaptability. Furthermore, some studies borrow, extend, or test established knowledge management or learning models in either novel or overlooked organizational contexts (Feller et al., 2013; Jones & Macpherson, 2006).

The studies in this cluster emphasize the dynamics of social interactions. They focus on practices in which learners anticipate and collaborate (Cornelissen, de Jong, & Kessels, 2012; Ungureanu et al., 2020), the way governance mechanisms (e.g., trust) affect learning (Clauss & Kesting, 2017; Kohtamäki, 2010; Kunttu & Neuvo, 2019), and the role of power in learning (Collien, 2021) and learning outcomes, such as identity formation, innovation, and competitive advantage (Karlsen, Isaksen, & Spilling, 2011a; Murphy et al., 2012; Nissen et al., 2014; Ungureanu et al., 2020). Hence, this cluster emphasizes how an individual's social nature and behavior contribute to learning at the individual level, within and between dyads, teams, organizations, and networks.

3.4.3. Methodological emphasis

This cluster comprises mostly empirical articles (82%). However, 14% are conceptual papers, and 4% are review articles. Most of the articles (57%) were qualitative studies. Nevertheless, there is also a body of quantitative studies (21%) in this cluster that utilize methods such as structural equation modeling or the eDelphi method. This is understandable, considering that the studied phenomenon is complex, requiring an exploratory approach in novel and unexplored network settings. Several papers focus on understudied relationship parties to better understand their perceptions and role in a network. Several multiple and comparative case studies are conducted in this stream, as well as in-depth and longitudinal single-case studies. The studies in this stream utilize variety of sectors. Studies examining private-public partnerships observe collaborations between governments, nonprofits, universities, and firms (Coughlan, Coghlan, Rigg, & O'Leary, 2021; Kunttu & Neuvo, 2019; Nissen et al., 2014; Reast et al., 2010), whereas studies conducted in private sectors include the manufacturing/technology/engineering industry (Feller et al., 2013; Jones & Macpherson, 2006; Kohtamäki, 2010; Martins, 2016), the pharmaceutical sector (Borgatti & Cross, 2003), the tourism sector (Buhagiar, 2020), and the insurance sector (Busquets et al., 2009).

4. Research agenda

4.1. Research suggestions regarding research streams

Building on the review of the four streams of alliance learning research, this section provides insights into advancing the research in each cluster. First, the research in the cluster of learning in strategic alliances could provide an essential ground for understanding learning across company boundaries in the digital age, where firms increasingly learn as part of digital ecosystems (Bäck & Kohtamäki, 2015). The increasing digitalization of ecosystems would benefit from an improved understanding of learning in alliances and networks. However, thus far, alliance learning research has not emphasized the role of digitalization in alliances to the extent it should—there is an evident gap in the existing research. Digitalization has been suggested to highlight the role of alliances while making them difficult to manage in a complex and rapidly changing landscape; thus, alliance learning capabilities are required as a coping mechanism (He et al., 2020). Second, studies in the cluster of learning in strategic alliances conceive alliances as providing important means for accessing and acquiring knowledge, increasing the potential efficiency of knowledge utilization (Grant & Baden-Fuller, 2004), and cautioning the challenges faced with tacit knowledge (Sherwood & Covin, 2008). Increased levels of knowledge tacitness make knowledge more difficult to access. Codifying tacit knowledge is difficult but particularly important when collaborating over digital platforms, and more empirical research is needed. What are the processes of knowledge codification within alliances, and what types of relational practices do firms use to codify knowledge? Perhaps bridging the gap between relationship learning and product and/or service development literature could provide interesting insight. Third, digitalization challenges the existing knowledge on alliance management. What is the role of alliance management and alliance learning in digital ecosystems, and how does learning in digital ecosystems shape firm boundaries and alliance management? Will digitalization make managing the rapidly changing landscape of alliances more challenging and make the planning-based management approach even more difficult, requiring much-improved support from the alliance learning process? We suggest that there is no single generic answer to this question. Instead, many contingencies, such as the technological complexity of exchanged product-service systems, might influence alliance management and learning. Based on this review, we call for alliance learning studies in digitalized ecosystems and networks, as alliance learning may provide one of the key managerial mechanisms for rapidly changing ecosystems (Kohtamäki et al., 2018). We call for further research on these topics, as based on the review, it seems that these types of processual studies on learning in strategic alliances seem to be missing and are not emerging.

Relationship learning research has demonstrated important operationalizations of the concept to provide solid empirical evidence on the causalities related to relationship learning processes, including the antecedents and outcomes. First, to advance the existing knowledge base on relationship learning, perhaps standardization of the relationship learning construct would benefit the literature by adding compatibility and comparability around the findings. The existing operationalization of the relationship learning construct provides an important ground, but thus far, it has been utilized surprisingly little (Selnes & Sallis, 2003). Second, more evidence is needed on the mediators and moderators of relationship learning. For instance, relatively little is known about the interaction between relationship learning capabilities and digital platforms, e.g., how relationship learning shapes innovation and performance outcomes in digital platforms. Third, empirical research on relationship learning has a quantitative emphasis and, consequently, a static view of the relationship learning concept. Therefore, relationship learning research holds potential for future processual research, emphasizing the process and dynamics of relationship learning with a particular appreciation of the dynamism and complexity generated by digitalizing ecosystems and platforms.

Some exciting avenues for future research, both theoretical and empirical, in the learning in innovation networks cluster emerge from the studies reviewed. From a practical perspective, research gaps can guide future studies. First, regarding network composition, alliance portfolio configuration and complexity, and knowledge flow, there is a need for more research examining how alliance learning affects product competition and how companies shape their alliances to avoid competition from allies by considering governance and resources, which means tacit knowledge spreads across organizational boundaries, and the role of capabilities and resources in knowledge appropriation (Cui et al., 2018; Ravichandran & Giura, 2019). Undoubtedly, the emergence of smart, connected innovation ecosystems and digital platforms opens up vast possibilities for such an endeavor in a context where new competitive dynamics and governance mechanisms emerge due to blurring industry boundaries, and organizations from various industries must build different relationships. Second, as Nee, Holm, & Opper (2018) highlight, there is a need to understand the role of contextual factors more thoroughly. For instance, future research could explore how institutional elements impact various meso- and micro-level aspects of relational exchange, including shared goals and engagement, and their impact on alliance formation and learning in alliances through their influence on the perception of trust and risk evaluation. Third, despite the uniqueness of knowledge-intensive settings, research on learning in innovation networks still relies on traditional theoretical approaches from the alliance literature, which emerged many years ago, to address different conditions in the business environment. As a result, there is a clear need to employ alternative approaches to more effectively capture current trends and the learning effects of new technologies such as artificial intelligence (AI) and the Internet of Things (IoT). Moreover, novel theoretical and conceptual approaches can be used to problematize basic assumptions rooted in research on alliances and networks, such as assumptions related to the role of trust and the positive relationships between collaboration, knowledge flow, and performance. For instance, organizational legitimacy management theories can complement existing perspectives to explore collaborative stakeholder engagement in learning in alliances (e.g., Desai, 2018). In contrast, the open innovation approach could help us understand new aspects of learning in alliances in a digitally enabled context. Table 3 synthesizes the gaps and future research directions regarding the four clusters and methodologies.

Research on learning in social networks has conceptually and empirically considered the antecedents and processes behind interorganizational learning, particularly how to manage tensions between divergent institutional logics. First, more research is needed on individual-level learning practices and the way these practices help overcome inevitable tensions and rigidities stemming from divergent institutional logics and heterogeneous characteristics between different network members. For instance, future research could delve deeper into how trust and personal ties are created and maintained in the era of increased digital collaboration tools (e.g., Slack, Zoom, Jakamo). Second, more evidence is needed on how these new advanced digital technologies and tools shape the role of social/personal characteristics and behavior in learning outcomes, such as the number and quality of innovations and capability and relational/network rent creation. For instance, it might be that digitalization mitigates the role of personal characteristics and socialization mechanisms. Third, future research on alliance learning could benefit from the microfoundations perspective, i.e., how individual agents contribute to micro-macro interaction (i.e., the effect of individual-level activities on boundary-level outcomes).

In particular, we encourage efforts to advance alliance learning with psychological theories on managerial cognitions/schemas (Danneels, 2011) and, in particular, managerial heuristics (Bingham, Howell, & Ott, 2019). As the routine perspective has become dominant in the alliance learning literature, more research is needed on decision-making heuristics when managing alliance learning. Different viewpoints of

Table 3
Synthesizing the gaps and future research directions regarding the four clusters and methodologies.

Cluster/methods	The identified gaps in the research	Suggestions for future research
Learning in strategic alliances	1. Despite the progressing digitalization, the learning in strategic alliances research stream does not put enough emphasis on it but neglects the trend almost in entirety. 2. Frequently, alliance learning involves tacit knowledge, which is difficult to codify and share. More evidence is required on this topic, considering the limited empirical research. 3. Little is known about the role of alliance learning as a central managerial process in digitalizing ecosystems and platforms, which are still relatively new organizational phenomena.	1. There is a need to understand learning across company boundaries in the digital age, as the companies facing digitalization would benefit from understanding alliance learning. 2. What are the processes of knowledge codification within alliances, and what types of relational practices do firms use to codify knowledge? 3. Studies on learning in strategic alliances should tap into digitalized ecosystems and networks, as alliance learning may provide one of the key managerial mechanisms for the rapidly changing economic system. Platforms and ecosystems offer a fertile ground to study the mediating and moderating roles of learning.
Relationship learning	4. Significant work has been conducted regarding the operationalization of the relationship learning construct, but the existing measurement methods still embed much variety. 5. Only limited empirical research exists on the mediators and moderators of relationship learning and its outcomes. 6. The relationship learning approach is relatively static, lacking empirical research using the practice-theoretical perspective.	4. The high potential of the standardization of the relationship learning construct would add compatibility and comparability to the findings. 5. Studies focusing on mediators, moderators, and outcomes could extend the quantitative knowledge base on relationship learning. 6. Extend the existing knowledge base on relationship learning by conducting practice research on the sayings and doings within the relationship learning processes to better capture learning dynamics within relationships.
L.earning in innovation networks	7. Evidence on network composition, alliance portfolio configuration and complexity, and knowledge flow from different industries have accumulated. However, the definition of the industry notion has evolved, and the boundaries between sectors are becoming blurred. These circumstances lead to new structures, such as ecosystems, involving alternative governance mechanisms and competitive dynamics. 8. Understanding learning in innovation networks requires better awareness of contextual factors, their interplay, and their impact on knowledge flows, relational exchange elements, and organizational strategies. More evidence is needed, given the lack of empirical evidence on these issues.	7. More research must explore how learning influences rivalry and how alliances are built to prevent competition from partners while considering governance and knowledge appropriation elements. Further research is needed to link partnership learning with competition, co-opetition, and complementary roles. These are relevant issues considering the emergence of innovation ecosystems and platforms as evolving forms, where organizations from various industries must build different relationships, affecting how sectoral dynamics are shaped. 8. Future research might examine how institutional factors influence various meso- and micro-level elements of relational exchange, such as shared goals and engagement, and
	9. Traditional theoretical approaches developed many years ago in different conditions continue to be used to examine learning in innovation networks. Alternative approaches are needed to adequately capture current trends and the learning effects of new technologies.	influence alliance formation and learning in alliances by affecting trust perception and risk evaluation. 9. Alternative conceptual underpinnings can capture current trends and aid in problematizing key assumptions underlying past research, such as the role of trust and the relationships between collaboration, knowledge flow, and performance.
Learning in social networks	10. Empirical evidence is limited concerning the individual-level factors that hinder social collaboration and mutual learning. 11. Studies have emphasized the role of trust and personal ties in learning. However, little is known on how to build trust between the parties in the era of digitalization. 12. Only some research exist on the role of microfoundations in network learning, the processes and mechanisms of learning.	10. Future research could focus on defining common proxies for individual-level antecedents, processes, and outcomes of interorganizational learning 11. What are the enabling individual and social practices to facilitate knowledge-sharing, trust-building, and learning in the era of digital tools and platforms? 12. Understanding microfoundations of interorganizational learning (both routines and heuristics perspectives) at the micro-macro axis is necessary to understand what and how actors learn in alliances.
Methodologies	13. There is an emphasis on quantitative research using databases and surveys. Very few studies mix different methods and data. 14. Due to the quantitative, objectivist paradigmatic approach, literature on learning in strategic alliances is missing processual approaches. 15. This review on learning in strategic alliances revealed a lack of studies using narrative and discursive approaches.	13. There is a need for mixed methods and data triangulation in studies on learning in alliances. 14. Research on learning in alliances would benefit from processual and ethnographic studies tapping into the dynamics of learning processes within alliance networks. 15. Literature on learning in alliances would benefit from in-depth single-case studies, action research, and inductive reasoning, with critical approaches encouraging problematization.

managerial heuristics, such as “heuristics and biases” (Kahneman, 2011), “fast-and-frugal” (Gigerenzer & Gaissmaier, 2011), and “simple rules” (Bingham & Eisenhardt, 2011) heuristics could be taken into account to more clearly understand the possible flaws (caused by biases), parity (caused by frugality), and superiority (caused by rule-of-thumb) emerging from the use of these microfoundations. Understanding managerial heuristics is becoming increasingly relevant in today's complex, turbulent, and foggy business environments where information is incomplete and there is little time to make strategy-related decisions. For instance, COVID-19 forced companies to learn faster together, which manifested in the rapid development of vaccines. Similarly, the ongoing global energy crisis is forcing governments and organizations with divergent institutional logics to collaborate more effectively to save resources. Understanding the microfoundations can provide insight on the managerial routines to be used to manage alliance learning better.

4.2. Research suggestions regarding methodologies used in alliance learning research

First, alliance learning research builds heavily on quantitative research, using data from databases and surveys. Considering that only a few studies among the 207 reviewed alliance learning papers use mixed methods, there is undoubtedly a research opportunity to use method and data triangulation across various data sources (Pangarkar, Yuan, & Hussain, 2017) and to use intensive case studies and interviews to answer how and why questions (Cui et al., 2018) as well as what questions (Bingham & Eisenhardt, 2011). Moreover, several articles call for multisided informants (Mazloomi Khamseh et al., 2017) and alternative ways to measure learning-related issues beyond overused patent data (Ravichandran & Giura, 2019; Subramanian et al., 2018). Second, alliance learning research is missing processual research approaches due to its quantitative, objectivist orientation. Hence, there is a need for processual studies that appreciate the dynamics of alliance learning. Third, research on learning in alliances seems to be missing subjectivist approaches, and therefore, there is a need for discursive and narrative approaches. These micro-level approaches improve the understanding of the role of narratives and discursive practices in shaping learning ecosystems as social constructions, from the micro to the macro levels. Research on learning in alliances would benefit from social constructionist, postmodern, feminist, and critical perspectives.

5. Discussion and conclusion

This study aimed to structure alliance learning research. In doing so, the literature review identifies the sub-streams of this research, reveals the current state of the research in each sub-stream, identifies the interactions between sub-streams, and recognizes some avenues for challenging some basic assumptions and structures to move the field forward. Based on the bibliometric analysis of the literature, we can problematize the concept of alliance learning as one coherent stream of literature and conclude that instead, alliance learning includes four sub-streams of research: 1) learning in strategic alliances, 2) relationship learning, 3) learning in innovation networks and 4) learning in social networks. Each sub-stream has a specific way of approaching learning in alliances, relationships, interorganizational networks, or social networks, as was concluded in the cluster-specific reviews. Based on the review, the specific field of alliance learning has gathered many studies. Different clusters of papers emphasize various central topics, adopt different theoretical underpinnings, and have different methodological emphases.

In the present study, we defined learning in strategic alliances as a process of knowledge sharing, interpretation, and integration in interaction with alliance partners (Selnes & Sallis, 2003). The learning in strategic alliances cluster sees alliance networks as a source of learning and competitive advantage. At best, alliance networks can provide a platform for interactions and learning, and alliance experience increases a firm's capacity to absorb knowledge from alliance networks. The underlying assumption in the relationship learning approach is that relationship learning occurs through joint learning processes in dyads. These studies primarily focus on dyadic manufacturer-customer relationships, emphasizing value and neglecting the multilateral nature of learning. The innovation networks cluster sees learning as a central process in innovation networks. However, considering the specific characteristics of knowledge-intensive contexts, research has been based on traditional conceptual approaches that originated in different contexts decades ago. Therefore, there is a clear need to use alternative approaches that more effectively capture the current trends and learning effects of new technologies, including artificial intelligence (AI), cloud computing, augmented reality (AR), and the Internet of Things (IoT). Moreover, there are possibilities to use methods that allow investigating the hows and whys in better ways that enable us to go beyond preexisting databases. The learning in social networks cluster understands learning as socially embedded, emphasizing the role of social factors in learning processes and acknowledging the complex relationship between social factors and learning. Overall, learning in alliances aptly challenges one of the presumptions of the alliance management literature that strategic alliances could be particularly well planned or managed when muddling through in the digitalization age. Instead, in the context of increasing environmental dynamism and complexity, the future of alliance management practice may look more emergent than ever, therefore emphasizing the importance of learning in alliances.

In the cluster-specific review of the four clusters, we developed suggestions for future research regarding each cluster and added recommendations regarding research methodologies. First, we find gaps between emerging environmental trends and relationship learning, e.g., future alliance learning research focusing on digital artifacts and digital transition, a process that has begun (He et al., 2020). Second, perhaps the micro-approaches of organizational sociology and psychology can provide valuable advances for alliance learning research in practice-theoretical, behavioral microfoundations (heuristics and routines), and sociomateriality. Third, an improved understanding of the role of agency has the potential to spur new ways of understanding alliance learning. Fourth, understanding the interplay between the micro and macro levels can be important for understanding how alliance learning works and should be managed. Fifth, alliance learning research would benefit from interpretivist, discursive, and narrative approaches. Finally, we delimited the focus of this study on alliance learning, meaning that we had to cut off many related, interesting, and potential concepts (e.g., innovation) in the strategic alliance literature. Future studies should also continue reviewing specific conceptual fields within strategic alliance literature to improve the landscape map for better future positioning of empirical studies.

Even literature reviews should consider impacts on company managers (Palmatier, Houston, & Hulland, 2018). Alliance learning is a highly relevant issue for company managers developing strategic alliances of various kinds. This study highlights the relevance of learning in the context of strategic alliances, noting the different forms of learning in alliances, such as learning from alliances, relationship learning, and learning in innovation networks, and the social nature of learning in networks. The forms of alliance learning are slightly different; notably, managers would benefit from understanding these. Learning from alliances puts particular emphasis on knowledge acquisition and absorption. Relationship learning underlines the role of joint learning in a relationship. Learning in innovation networks emphasizes the exploratory characteristics of learning networks. Learning in social networks underlines the social nature of network learning and the communal aspect of social networks, trust, open interaction, and the feeling of community. With an understanding of different concepts related to alliance learning, managers can benchmark processes (e.g., Crossan's 4i framework), routines (e.g., knowledge-sharing routines), and practices (e.g., establishing development teams for relationships) that facilitate interorganizational learning.

The present study reveals a stream of alliance literature that should be actively developed, namely, learning in strategic alliances, including four sub-streams. Perhaps this study will help scholars plan and implement agendas for each sub-stream and revive this potential literature stream of alliance learning. In the future, more than ever, companies need capabilities for learning beyond organizational boundaries, which highlights the importance of learning in alliances as a research topic.

Data availability

Data will be made available on request.

References

Aharonson, B., Bort, S., & Woywode, M. (2020). The influence of multinational corporations on international alliance formation behavior of colocated start-ups. *Organization Science, 31*(3), 770–795. https://doi.org/10.1287/orsc.2019.1315

Ahmadsimab, A., & Chowdhury, I. (2021). Managing tensions and divergent institutional logics in firm–NPO partnerships. *Journal of Business Ethics, 168*(3), 651–670. https://doi.org/10.1007/s10551-019-04265-x

Al-Tabbaa, O., Leach, D., & Khan, Z. (2019). Examining alliance management capabilities in cross-sector collaborative partnerships. *Journal of Business Research, 101*(April 2018), 268–284. https://doi.org/10.1016/j.jbusres.2019.04.001

Arikan, I., & Shenkar, O. (2013). National animosity and cross-border alliances. *Academy of Management Journal, 56*(6), 1516–1544. https://doi.org/10.5465/amj.2011.0210

Ariño, A., & De La Torre, J. (1998). Learning from failure: Towards an evolutionary model of collaborative ventures. *Organization Science, 9*(3), 306–325. https://doi.org/10.1287/orsc.9.3.306

Ariño, A., Reuer, J. J., Mayer, K. J., & Jané, J. (2014). Contracts, negotiation, and learning: An examination of termination provisions. *Journal of Management Studies, 51*(3), 379–405. https://doi.org/10.1111/joms.12069

Atuahene-Gima, K., & Murray, J. Y. (2007). Exploratory and exploitative learning in new product development: A social capital perspective on new technology ventures in China. *Journal of International Marketing, 15*(2), 1–29. https://doi.org/10.1509/jimk.15.2.1

Bäck, I., & Kohtamäki, M. (2015). Boundaries of R&D collaboration. *Technovation, 45–46*, 15–28. https://doi.org/10.1016/j.technovation.2015.07.002

Bäck, I., & Kohtamäki, M. (2016). Joint learning in innovative R&D collaboration. *Industry and Innovation, 23*(1), 62–86. https://doi.org/10.1080/13662716.2015.1123613

Barringer, B. R., & Harrison, J. S. (2000). Walking a tightrope: Creating value through Interorganizational relationships. *Journal of Management, 26*(3), 367–403. https://doi.org/10.1177/014920630002600302

Basu, S., Phelps, C., & Kotha, S. (2016). Search and integration in external venturing: An inductive examination of corporate venture capital units. *Strategic Entrepreneurship Journal, 10*(2), 129–152. https://doi.org/10.1002/sej.1206

Baum, J., Calabrese, T., & Silverman, B. (2000). Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology. *Strategic Management Journal, 21*(3), 267–294. https://doi.org/10.1002/(SICI)1097-0266(200003)21:3<267::AID-SMJ89>3.0.CO;2-8

Baum, J., Cowan, R., & Jonard, N. (2010). Network-independent partner selection and the evolution of innovation networks. *Management Science, 56*(11), 2094–2110.

Baum, J., Rowley, T., Shipilov, A., & Chuang, Y. (2005). Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly, 50*(4), 536–575.

Beckman, C., & Haunschild, P. (2002). Network learning: The effects of partners' heterogeneity of experience on corporate acquisitions. *Administrative Science Quarterly, 47*(1), 92–124.

Beitelspacher, L. S., Baker, T. L., Rapp, A., & Grewal, D. (2018). Understanding the long-term implications of retailer returns in business-to-business relationships. *Journal of the Academy of Marketing Science, 46*(2), 252–272. https://doi.org/10.1007/s11747-017-0553-6

Benson-Rea, M., & Wilson, H. I. M. (2003). Networks, learning and the lifecycle. *European Management Journal, 21*(5), 588–597. https://doi.org/10.1016/S0263-2373(03)00108-7

Bercovitz, J., & Feldman, M. (2007). Fishing upstream: Firm innovation strategy and university research alliances. *Research Policy, 36*(7), 930–948. https://doi.org/10.1016/j.respol.2007.03.002

Bercovitz, J., & Tyler, B. (2014). Who i am and how i contract: The effect of contractors' roles on the evolution of contract structure in university-industry research agreements. *Organization Science, 25*(6), 1840–1859. https://doi.org/10.1287/orsc.2014.0917

Bingham, C., & Eisenhardt, K. (2011). Rational heuristics: The "simple rules" that strategists learn from process experience. *Strategic Management Journal, 32*(August), 1437–1464. https://doi.org/10.1002/smj

Bingham, C., Howell, T., & Ott, T. (2019). Capability creation: Heuristics as microfoundations. *Strategic Entrepreneurship Journal, 13*(2), 121–153. https://doi.org/10.1002/SEJ.1312

Borgatti, S. P., & Cross, R. (2003). A relational view of information seeking and learning in social networks. *Management Science, 49*(4), 432–445. https://doi.org/10.1287/mnsc.49.4.432.14428

Buckley, P. J., Glaister, K. W., Klijn, E., & Tan, H. (2009). Knowledge accession and knowledge acquisition in strategic alliances: The impact of supplementary and complementary dimensions. *British Journal of Management, 20*(4), 598–609. https://doi.org/10.1111/j.1467-8551.2008.00607.x

Buhagiar, K. (2020). Interorganizational learning in the tourism industry: Conceptualizing a multi-level typology. *Learning Organization, 28*(2), 208–221. https://doi.org/10.1108/TLO-01-2020-0016

Busquets, J., Rodon, J., & Wareham, J. (2009). Adaptability in smart business networks: An exploratory case in the insurance industry. *Decision Support Systems, 47*(4), 287–296. https://doi.org/10.1016/j.dss.2009.05.006

Carayannis, E. G., Alexander, J., & Ioannidis, A. (2000). Leveraging knowledge, learning, and innovation in forming strategic government-university-industry (GUI) R&D partnerships in the US, Germany, and France. In *, 20. Technovation*. www.elsevier.com/locate/technovation.

Carson, S., Madhok, A., Varman, R., & John, G. (2003). Information processing moderators of the effectiveness of trust-based governance in interfirm R and D collaboration. *Organization Science, 14*(1), 45–56. https://doi.org/10.1287/orsc.14.1.45.12811

Cepeda-Carrión, I., Leal-Millán, A. G., Ortega-Gutierrez, J., & Leal-Rodriguez, A. L. (2015). Linking unlearning with service quality through learning processes in the Spanish banking industry. *Journal of Business Research, 68*(7), 1450–1457. https://doi.org/10.1016/j.jbusres.2015.01.032

Chakkol, M., Selviaridis, K., & Finne, M. (2018). The governance of collaboration in complex projects. *International Journal of Operations and Production Management, 38*(4), 997–1019. https://doi.org/10.1108/IJOPM-11-2017-0717

Chen, H., Lee, P., & Lay, T. (2009). Drivers of dynamic learning and dynamic competitive capabilities in international strategic alliances. *Journal of Business Research, 62*(12), 1289–1295. https://doi.org/10.1016/j.jbusres.2008.12.003

Cheung, M. S., Myers, M., & Mentzer, J. (2011). The value of relational learning in global buyer-supplier exchanges: A dyadic perspective and test of the pie-sharing premise. *Strategic Management Journal, 32*, 1061–1082. https://doi.org/10.1002/smj

Cheung, M. S., Myers, M. B., & Mentzer, J. T. (2010). Does relationship learning lead to relationship value? A cross-national supply chain investigation. *Journal of Operations Management, 28*(6), 472–487. https://doi.org/10.1016/j.jom.2010.01.003

Clauss, T., & Kesting, T. (2017). How businesses should govern knowledge-intensive collaborations with universities: An empirical investigation of university professors. *Industrial Marketing Management, 62*, 185–198. https://doi.org/10.1016/j.indmarman.2016.09.001

Collien, I. (2021). Concepts of power in boundary spanning research: A review and research agenda. *International Journal of Management Reviews, 23*(4), 443–465. https://doi.org/10.1111/ijmr.12251

Colyvas, J., & Maroulis, S. (2015b). Moving from an exception to a rule: Analyzing mechanisms in emergence-based institutionalization. *Organization Science, 26*(2), 601–621. https://doi.org/10.1287/orsc.2014.0948

Colyvas, J. A., & Maroulis, S. (2015a). Moving from an exception to a rule: Analyzing mechanisms in emergence-based institutionalization. *Organization Science, 26*(2), 601–621. https://doi.org/10.1287/orsc.2014.0948

Cornelissen, F., de Jong, T., & Kessels, J. (2012). Knitted patterns or contagious hotspots?: Linking views on knowledge and organizational networked learning. *Learning Organization, 19*(6), 469–481. https://doi.org/10.1108/09696471211266965

Coughlan, P., Coghlan, D., Rigg, C., & O'Leary, D. (2021). Exploring and exploiting the dynamics of networks in complex applied research projects: A reflection on learning in action. *British Journal of Management.*. https://doi.org/10.1111/1467-8551.12482

Crossan, M. M., Lane, H. W., & White, R. E. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review, 24*(3), 522–537.

Cui, V., Yang, H., & Vertinsky, I. (2018). Attacking your partners: Strategic alliances and competition between partners in product markets. *Strategic Management Journal, 39*(12), 3116–3139. https://doi.org/10.1002/smj.2746

Danneels, E. (2011). Trying to become a different type of company: Dynamic capability at Smith Corona. *Strategic Management Journal, 32*(1), 1–31. https://doi.org/10.1002/smj

DeJordy, R., Scully, M., Ventresca, M. J., & Creed, W. E. D. (2020). Inhabited ecosystems: Propelling transformative social change between and through organizations. *Administrative Science Quarterly, 65*(4), 931–971. https://doi.org/10.1177/0001839219899613

Desai, V. M. (2018). Collaborative stakeholder engagement: An integration between theories of organizational legitimacy and learning. *Academy of Management Journal, 61*(1), 220–244. https://doi.org/10.5465/amj.2016.0315

Doz, Y. L. (1996). The evolution of cooperation in strategic alliances: Initial conditions or learning processes? *Strategic Management Journal, 17*(SUPPL. SUMMER), 55–83. https://doi.org/10.1002/smj.4250171006

Dussauge, P., Garrette, B., & Mitchell, W. (2000). Learning from competing partners: Outcomes and durations of scale and link alliances in Europe, North America and Asia. *Strategic Management Journal, 21*(2), 99–126. https://doi.org/10.1002/(SICI)1097-0266(200002)21:2<99::AID-SMJ80>3.0.CO;2-G

Dussauge, P., Garrette, B., & Mitchell, W. (2004). Asymmetric performance: The market share impact of scale and link alliances in the global auto industry. *Strategic Management Journal, 25*(7), 701–711. https://doi.org/10.1002/smj.416

Duysters, G., & Lokshin, B. (2011). Determinants of alliance portfolio complexity and its effect on innovative performance of companies. *Journal of Product Innovation Management, 28*(4), 570–585. https://doi.org/10.1111/j.1540-5885.2011.00824.x

Dyer, J., & Hatch, N. (2004). Using supplier networks to learn faster. *MIT Sloan Management Review, 45*(3), 57–63.

Dyer, J., & Kale, P. (2001). How to make strategic alliances work. *MIT Sloan Management Review*, 1993–1997.

Dyer, J., & Nobeoka, K. (2000). Creating and managing a high-performance knowledge-sharing network: The Toyota case. *Strategic Management Journal, 21*(3), 345–367. https://doi.org/10.2307/3094191

Dyer, J., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *The Academy of Management Review, 23*(4), 660–679.

Einola, S., Kohtamäki, M., Parida, V., & Wincent, J. (2017). Retrospective relational sensemaking in R&D offshoring. *Industrial Marketing Management, 63*, 205–216. https://doi.org/10.1016/j.indmarman.2016.10.001

Feller, J., Parhankangas, A., Smeds, R., & Jaatinen, M. (2013). How companies learn to collaborate: Emergence of improved inter-organizational processes in R&D alliances. *Organization Studies, 34*(3), 313–343. https://doi.org/10.1177/0170840612464758

Forrest, J. E. (1996). *Strategic alliances in the biotechnology industry*.

Ghosh, A. (2004). Learning in strategic alliances: A Vygotskian perspective. *The Learning Organization, 11*(4/5), 302–311. https://doi.org/10.1108/09696470410538206

Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. *Annual Review of Psychology, 62*, 451–482. https://doi.org/10.1146/annurev-psych-120709-145346

Grant, R. M., & Baden-Fuller, C. (2004). A knowledge accessing theory of strategic alliances. *Journal of Management Studies, 41*(1), 61–84. https://doi.org/10.1111/j.1467-6486.2004.00421.x

Gulati, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal, 20*(5), 397–420. https://doi.org/10.1002/(SICI)1097-0266(199905)20:5<397::AID-SMJ35>3.0.CO;2-K

Hakanen, T. (2014). Co-creating integrated solutions within business networks: The KAM team as knowledge integrator. *Industrial Marketing Management, 43*(7), 1195–1203. https://doi.org/10.1016/j.indmarman.2014.08.002

Håkansson, H., & Shenota, I. (1995). *Developing relationships in business networks. 418*. Routledge. https://doi.org/10.1016/j.indmarman.2004.12.007

Hamel, G. (1991). Competition for competence and inter-partner learning within international strategic alliances. *Strategic Management Journal, 12*(1 S), 83–103. https://doi.org/10.1002/smj.4250120908

He, Q., Meadows, M., Angwin, D., Gomes, E., & Child, J. (2020). Strategic Alliance research in the era of digital transformation: Perspectives on future research. *British Journal of Management, 31*(3), 589–617. https://doi.org/10.1111/1467-8551.12406

Heimeriks, K. (2010). Confident or competent? How to avoid superstitious learning in alliance portfolios. *Long Range Planning, 43*(1), 57–84. https://doi.org/10.1016/j.lrp.2009.10.004

Heimeriks, K., Bingham, C., & Laamanen, T. (2015). Unveiling the temporally contingent role of codification in alliance success. *Strategic Management Journal, 36*(3), 462–473.

Helander, A., & Möller, K. (2007). System supplier's customer strategy. *Industrial Marketing Management, 36*(6), 719–730. https://doi.org/10.1016/j.indmarman.2006.05.007

Hipkin, I., & Naudé, P. (2006). Developing effective Alliance partnerships: Lessons from a case study. *Long Range Planning, 39*(1), 51–69. https://doi.org/10.1016/j.lrp.2005.09.003

Hitt, M. A., Dacin, M. T., Levitas, E., Arregle, J. L., & Borza, A. (2000). Partner selection in emerging and developed market contexts: Resource-based and organizational learning perspectives. *Academy of Management Journal, 43*(3), 449–467. https://doi.org/10.2307/1556404

Hoholm, T., & Olsen, P. I. (2012). The contrary forces of innovation. A conceptual model for studying networked innovation processes. *Industrial Marketing Management, 41*(2), 344–356. https://doi.org/10.1016/j.indmarman.2012.01.013

Hottenrott, H., & Lopes-Bento, C. (2016). R&D partnerships and innovation performance: Can there be too much of a good thing? *Journal of Product Innovation Management, 33*(6), 773–794. https://doi.org/10.1111/jpim.12311

Howard, M., Steensma, H. K., Lyles, M., & Dhanaraj, C. (2016). Learning to collaborate through collaboration: How allying with expert firms influences collaborative innovation within novice firms. *Strategic Management Journal, 37*(10), 2092–2103. https://doi.org/10.1002/smj.2424

Huikkola, T., Ylimäki, J., & Kohtamäki, M. (2013). Joint learning in R&D collaborations and the facilitating relational practices. *Industrial Marketing Management, 42*(7), 1167–1180. https://doi.org/10.1016/j.indmarman.2013.07.002

Inemek, A., & Matthyssens, P. (2013). The impact of buyer-supplier relationships on supplier innovativeness: An empirical study in cross-border supply networks. *Industrial Marketing Management, 42*(4), 580–594. https://doi.org/10.1016/j.indmarman.2012.10.011

Ingham, M., & Mothe, C. (1998). How to learn in R&D partnerships?. In , *28. R&D Management*.

Inkpen, A. (1998). Learning, knowledge acquisition, and strategic alliances. *European Management Journal, 16*(2), 223–229. https://doi.org/10.1016/S0263-2373(97)00090-X

Ireland, R. D., Hitt, M. A., & Vaidyanath, D. (2002). Alliance management as a source of competitive advantage. *Journal of Management, 28*(3), 413–446. https://doi.org/10.1016/S0149-2063(02)00134-4

Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal, 39*(8), 2255–2276. https://doi.org/10.1002/smj.2904

Janowicz-Panjaitan, M., & Noorderhaven, N. G. (2008). Formal and informal interorganizational learning within strategic alliances. *Research Policy, 37*(8), 1337–1355. https://doi.org/10.1016/j.respol.2008.04.025

Jarillo, J. C. (1988). On strategic networks. *Strategic Management Journal, 9*(1), 31–41. https://doi.org/10.1002/smj.4250090104

Jean, R. J., Sinkovics, R. R., & Kim, D. (2010). Drivers and performance outcomes of relationship learning for suppliers in cross-border customer-supplier relationships: The role of communication culture. *Journal of International Marketing, 18*(1), 63–85. https://doi.org/10.1509/jimk.18.1.63

Jones, O., & Macpherson, A. (2006). Inter-organizational learning and strategic renewal in SMEs. Extending the 4I framework. *Long Range Planning, 39*(2), 155–175. https://doi.org/10.1016/j.lrp.2005.02.012

Kahneman, D. (2011). *Thinking, Fast and Slow*. Farrar, Straus and Giroux.

Kale, P., Dyer, J., & Singh, H. (2001). Value creation and success in strategic alliances: Alliancing skills and the role of alliance structure and systems. In. *European Management Journal, 19*(5).

Kale, P., Dyer, J., & Singh, H. (2002). Alliance capability, stock market response, and long-term alliance success: The role of the alliance function. *Strategic Management Journal, 23*(8), 747–767. https://doi.org/10.1002/smj.248

Kale, P., & Singh, H. (2009). Managing strategic alliances: What do we know now, and where do we go from here? *Academy of Management Perspectives, 23*(3), 45–62. https://doi.org/10.5465/AMP.2009.43479263

Kale, P., Singh, H., & Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strategic Management Journal, 21*(3), 217–237. https://doi.org/10.1002/(SICI)1097-0266(200003)21:3<217::AID-SMJ95>3.0.CO;2-Y

Karlsen, J., Isaksen, A., & Spilling, O. (2011a). The challenge of constructing regional advantages in peripheral areas: The case of marine biotechnology in Tromsø, Norway. *Entrepreneurship and Regional Development, 23*(3–4), 235–257. https://doi.org/10.1080/08985620903233945

Karlsen, J., Isaksen, A., & Spilling, O. R. (2011b). The challenge of constructing regional advantages in peripheral areas: The case of marine biotechnology in Tromsø, Norway. *Entrepreneurship and Regional Development, 23*(3–4), 235–257. https://doi.org/10.1080/08985620903233945

Khanna, T., Gulati, R., & Nohria, N. (1998). The dynamics of learning alliances: Competition, cooperation, and relative scope. *Strategic Management Journal, 19*(3), 193–210. https://doi.org/10.1002/(SICI)1097-0266(199803)19:3<193::AID-SMJ949>3.3.CO;2-3

Knight, L. (2002). Network learning: Exploring learning by interorganizational networks. *Human Relations, 55*(4), 427–454. http://proquest.umi.com/pqdweb?did=114565230&Fmt=7&clientId=23361&RQT=309&VName=PQD.

Kohtamäki, M. (2010). Relationship governance and learning in partnerships. *The Learning Organization, 17*(1), 41–57. https://doi.org/10.1108/09696471011008233

Kohtamäki, M., & Partanen, J. (2016). Co-creating value from knowledge-intensive business services in manufacturing firms: The moderating role of relationship learning in supplier-customer interactions. *Journal of Business Research, 69*(7), 2498–2506. https://doi.org/10.1016/j.jbusres.2016.02.019

Kohtamäki, M., Parida, V., Oghazi, P., Gebauer, H., & Baines, T. (2019). Digital servitization business models in ecosystems: A theory of the firm. *Journal of Business Research, 104*, 380–392 (November).

Kohtamäki, M., Rabetino, R., & Möller, K. (2018). Alliance capabilities: A systematic review and future research directions. *Industrial Marketing Management, 68*(1), 188–201. https://doi.org/10.1016/J.INDMARMAN.2017.10.014

Kohtamäki, M., Whittington, R., Vaara, E., & Rabetino, R. (2022). Making connections: Harnessing the diversity of strategy-as-practice research. *International Journal of Management Reviews, 24*(2), 210–232. https://doi.org/10.1111/ijmr.12274

Kraatz, M. S. (1998). Learning by association? Interorganizational networks and adaptation to environmental change. *Academy of Management Journal, 41*(6), 621–643.

Kunttu, L., & Neuvo, Y. (2019). Balancing learning and knowledge protection in university-industry collaborations. *Learning Organization, 26*(2), 190–204. https://doi.org/10.1108/TLO-06-2018-0103

Langfield-Smith, K., & Greenwood, M. (1998). Developing co-operative buyer-supplier relationships: A case study of Toyota. *Journal of Management Studies, 3*(May), 331–353.

Larsson, R., Bengtsson, L., Henriksson, K., & Sparks, J. (1998). The interorganizational learning dilemma: Collective knowledge development in strategic alliances. *Organization Science, 9*(3), 285–305. https://doi.org/10.1287/orsc.9.3.285

Lavie, D., Kang, J., & Rosenkopf, L. (2011). Balance within and across domains: The performance implications of exploration and exploitation in alliances. *Organization Science, 22*(6), 1517–1538. https://doi.org/10.1287/orsc.1100.0596

Lavie, D., & Miller, S. R. (2008). Alliance portfolio internationalization and firm performance. *Organization Science, 19*(4), 623–646. https://doi.org/10.1287/orsc.1070.0341

Le Pennec, M., & Raufflet, E. (2018). Value creation in inter-organizational collaboration: An empirical study. *Journal of Business Ethics, 148*(4), 817–834. https://doi.org/10.1007/s10551-015-3012-7

Li, M. (2019). Diversity of board interlocks and the impact on technological exploration: A longitudinal study. *Journal of Product Innovation Management, 36*(4), 490–512. https://doi.org/10.1111/jpim.12488

Li, S., Zhao, X., & Huo, B. (2018). Supply chain coordination and innovativeness: A social contagion and learning perspective. *International Journal of Production Economics, 205*(May), 47–61. https://doi.org/10.1016/j.ijpe.2018.07.033

Li, Y., Cui, V., & Liu, H. (2017). Dyadic specific investments, absorptive capacity, and manufacturers' market knowledge acquisition: Evidence from manufacturer–distributor dyads. *Journal of Business Research, 78*, 323–331. https://doi.org/10.1016/j.jbusres.2016.12.028

Lin, C., Wu, Y.-J., Chang, C., Wang, W., & Lee, C.-Y. (2012). The alliance innovation performance of R&D alliances—The absorptive capacity perspective. *Technovation, 32*(5), 282–292. https://doi.org/10.1016/j.technovation.2012.01.004

Lin, H., & Darnall, N. (2015). Strategic alliance formation and structural configuration. *Journal of Business Ethics, 127*(3), 549–564. https://doi.org/10.1007/s10551-014-2053-7

Lin, H. E., McDonough, E. F., Lin, S. J., & Lin, C. Y. Y. (2013). Managing the exploitation/exploration paradox: The role of a learning capability and innovation ambidexterity. *Journal of Product Innovation Management, 30*(2), 262–278. https://doi.org/10.1111/j.1540-5885.2012.00998.x

Lindgreen, A., Di Benedetto, C. A., & Kock, F. (2021). How to develop original, courageous ideas in business marketing research. *Industrial Marketing Management, 95*(May), A1–A4. https://doi.org/10.1016/j.indmarman.2020.04.011

Ling-yee, L. (2006). Relationship learning at trade shows: Its antecedents and consequences. *Industrial Marketing Management, 35*(2), 166–177. https://doi.org/10.1016/j.indmarman.2005.03.006

Lioukas, C. S., & Reuer, J. J. (2015). Isolating trust outcomes from exchange relationships: Social exchange and learning benefits of prior ties in alliances. *Academy of Management Journal, 58*(6), 1826–1847. https://doi.org/10.5465/amj.2011.0934

López Sánchez, J.Á., Santos Vijande, M. L., & Trespalacios Gutiérrez, J. A. (2011). The effects of manufacturer's organizational learning on distributor satisfaction and loyalty in industrial markets. *Industrial Marketing Management, 40*(4), 624–635. https://doi.org/10.1016/j.indmarman.2010.12.003

Lorange, P. (1996). Developing learning partnerships. *The Learning Organization, 3*(2), 11–19. https://doi.org/10.1108/09696479610113765

Love, J. H., Roper, S., & Vahter, P. (2014). Learning from openness: The dynamics of breadth in external innovation linkages. *Strategic Management Journal, 35*(11), 1703–1716.

Lubatkin, M., Florin, J., & Lane, P. (2001). Learning together and apart: A model of reciprocal interfirm learning. *Human Relations, 54*(10), 1353–1382. https://doi.org/10.1177/a019198

Lumineau, F., Fréchet, M., & Puthod, D. (2011). An organizational learning perspective on the contracting process. *Strategic Organization, 9*(1), 8–32. https://doi.org/10.1177/1476127011399182

Luo, X., & Deng, L. (2009). Do birds of a feather flock higher? The effects of partner similarity on innovation in strategic alliances in knowledge-intensive industries. *Journal of Management Studies, 46*(6), 1005–1030. https://doi.org/10.1111/j.1467-6486.2009.00842.x

Lusch, R. F., Vargo, S. L., & Tanniru, M. (2010). Service, value networks and learning. *Journal of the Academy of Marketing Science, 38*(1), 19–31.

Mani, D., & Barua, A. (2015). The impact of firm learning on value creation in strategic outsourcing relationships. *Journal of Management Information Systems, 32*(1), 9–38. https://doi.org/10.1080/07421222.2015.1029379

Martins, J. T. (2016). Relational capabilities to leverage new knowledge: Managing directors' perceptions in UK and Portugal old industrial regions. *Learning Organization, 23*(6), 398–414. https://doi.org/10.1108/TLO-03-2016-0022

Mazloomi Khamseh, H., Jolly, D., & Morel, L. (2017). The effect of learning approaches on the utilization of external knowledge in strategic alliances. *Industrial Marketing Management, 63*, 92–104. https://doi.org/10.1016/j.indmarman.2016.12.004

Mesquita, L., Anand, J., & Brush, T. (2008). Comparing the resource-based and relational views: Knowledge transfer and spillover in vertical alliances. *Strategic Management Journal, 29*(9), 913–941. https://doi.org/10.1002/smj.699

Milanov, H., & Fernhaber, S. A. (2014). When do domestic alliances help ventures abroad? Direct and moderating effects from a learning perspective. *Journal of Business Venturing, 29*(3), 377–391. https://doi.org/10.1016/j.jbusvent.2013.05.004

Moatti, V. (2009). Learning to expand or expanding to learn? The role of imitation and experience in the choice among several expansion modes. *European Management Journal, 27*(1), 36–46. https://doi.org/10.1016/j.emj.2008.06.001

Möller, K., & Halinen, A. (2017). Managing business and innovation networks—From strategic nets to business fields and ecosystems. *Industrial Marketing Management, 67* (November), 5–22. https://doi.org/10.1016/j.indmarman.2017.09.018

Möller, K., & Svahn, S. (2006). Role of knowledge in value creation in business nets. *Journal of Management Studies, 43*(5), 985–1007. https://doi.org/10.1111/j.1467-6486.2006.00626.x

Murphy, M., Perrot, F., & Rivera-Santos, M. (2012). New perspectives on learning and innovation in cross-sector collaborations. *Journal of Business Research, 65*(12), 1700–1709. https://doi.org/10.1016/j.jbusres.2012.02.011

Nee, V., Holm, H. J., & Opper, S. (2018). Learning to trust: From relational exchange to generalized trust in China. *Organization Science, 29*(5), 969–986.

Nielsen, B. B., & Nielsen, S. (2009). Learning and innovation in international strategic alliances: An empirical test of the role of trust and tacitness. *Journal of Management Studies, 46*(6), 1031–1056. https://doi.org/10.1111/j.1467-6486.2009.00840.x

Niesten, E., & Jolink, A. (2015). The impact of alliance management capabilities on alliance attributes and performance: A literature review. *International Journal of Management Reviews, 17*(1), 69–100. https://doi.org/10.1111/ijmr.12037

Nissen, H. A., Evald, M. R., & Clarke, A. H. (2014). Knowledge sharing in heterogeneous teams through collaboration and cooperation: Exemplified through public-private-innovation partnerships. *Industrial Marketing Management, 43*(3), 473–482. https://doi.org/10.1016/j.indmarman.2013.12.015

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company*. Oxford University Press.

Nooteboom, B. (1999). Innovation and inter-firm linkages: New implications for policy. In *, 28. Research Policy*. www.elsevier.nlrlocatereconbase.

Nooteboom, B. (2000). Institutions and forms of co-ordination in innovation systems. *Organization Studies, 21*(5), 915–939.

Oliver, A. (2001). Strategic alliances and the learning life-cycle of biotechnology firms. *Organization Studies, 22*(3), 467–489.

Oliver, A., & Ebers, M. (1998). Networking network studies: An analysis of conceptual configurations in the study of inter-organizational relationships. *Organization Studies, 19*(4), 549–583. https://doi.org/10.1177/017084069801900402

Ozalp, H., Cennamo, C., & Gawer, A. (2018). Disruption in platform-based ecosystems. *Journal of Management Studies, November.*. https://doi.org/10.1111/joms.12351

Palmatier, R., Houston, M., & Hulland, J. (2018). Review articles: Purpose, process, and structure. *Journal of the Academy of Marketing Science, 46*(1), 1–5. https://doi.org/10.1007/s11747-017-0563-4

Pangarkar, N., Yuan, L., & Hussain, S. (2017). Too much of a good thing? Alliance portfolio size and alliance expansion. *European Management Journal, 35*(4), 477–485. https://doi.org/10.1016/j.emj.2016.09.006

Peters, L., Pressey, A., & Johnston, W. (2017). Contagion and learning in business networks. *Industrial Marketing Management, 61*, 43–54. https://doi.org/10.1016/j.indmarman.2016.06.011

Phene, A., & Tallman, S. (2014). Knowledge spillovers and alliance formation. *Journal of Management Studies, 51*(7), 1058–1090. https://doi.org/10.1111/joms.12088

Powell, W. (1990). Neither market nor hierarchy: Network forms of organization. *Research in Organizational Behavior, 12*(3), 295–336.

Powell, W., Koput, K., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation networks of learning in biotechnology. *Administrative Science Quarterly, 41*(1), 116–145.

Rabetino, R., Harmsen, W., Kohtamäki, M., & Sihvonen, J. (2018). Structuring servitization-related research. *International Journal of Operations and Production Management, 38*(2), 350–371. https://doi.org/10.1108/IJOPM-03-2017-0175

Rabetino, R., Kohtamäki, M., Brax, S. A., & Sihvonen, J. (2021). The tribes in the field of servitization: Discovering latent streams across 30 years of research. *Industrial Marketing Management, 95*, 70–84.

Ravichandran, T., & Giura, S. I. (2019). Knowledge transfers in alliances: Exploring the facilitating role of information technology. *Information Systems Research, 30*(3), 726–744. https://doi.org/10.1287/isre.2018.0823

Ravindran, K., Susarla, A., Mani, D., & Gurbaxani, V. (2015). Social capital and contract duration in buyer-supplier networks for information technology outsourcing. *Information Systems Research, 26*(2), 379–397. https://doi.org/10.1287/isre.2015.0572

Reast, J., Lindgreen, A., Vanhamme, J., & Maon, F. (2010). The Manchester super casino: Experience and learning in a Cross-sector social partnership. *Journal of Business Ethics, 94*(Suppl. 1), 197–218. https://doi.org/10.1007/s10551-011-0777-1

Revilla, E., & Knoppen, D. (2015). Building knowledge integration in buyer-supplier relationships: The critical role of strategic supply management and trust. *International Journal of Operations and Production Management, 35*(10), 1408–1436. https://doi.org/10.1108/IJOPM-01-2014-0030

Riccaboni, M., & Moliterni, R. (2009). Managing technological transitions through R&D alliances. *R and D Management, 39*(2), 124–135. https://doi.org/10.1111/j.1467-9310.2009.00545.x

Rothaermel, F. T., & Deeds, D. L. (2004). Exploration and exploitation alliances in biotechnology: A system of new product development. *Strategic Management Journal, 25*(3), 201–221.

Sako, M. (2004). Supplier development at Honda, Nissan and Toyota: Comparative case studies of organizational capability enhancement. *Industrial and Corporate Change, 13* (2), 281–308. http://proquest.umi.com/pqdweb?did=642100191&Fmt=7&clientId=23361&RQT=309&VName=PQD.

Santangelo, G. D. (2000). Corporate strategic technological partnerships in the European information and communications technology industry. In *, 29. Research Policy*. www.elsevier.nlrlocatereconbase.

Schildt, H. A., Keil, T., & Maula, M. (2012). The temporal effects of relative and firm-level absorptive capacity on interorganizational learning. *Strategic Management Journal, 33*(10), 1154–1173. http://doi.wiley.com/10.1002/smj.1963.

Schildt, H. A., Maula, M. V. J., & Keil, T. (2005). Explorative and exploitative learning from external corporate ventures. *Entrepreneurship Theory and Practice, 29*(4), 493–515.

Schilke, O., & Goerzen, A. (2010). Alliance management capability: An investigation of the construct and its measurement. *Journal of Management, 36*(5), 1192–1219. https://doi.org/10.1177/0149206310362102

Selnes, F., & Sallis, J. (2003). Promoting relationship learning. *Journal of Marketing, 67* (3), 80–95.

Sherwood, A. L., & Covin, J. G. (2008). Knowledge acquisition in university-industry alliances: An empirical investigation from a learning theory perspective. *Journal of Product Innovation Management, 25*(2), 162–179. https://doi.org/10.1111/j.1540-5885.2008.00292.x

Simonin, B. (1999). Ambiguity and the process of knowledge transfer in strategic alliances. *Strategic Management Journal, 20*(7), 595–623. https://doi.org/10.1002/(sici)1097-0266(199907)20:7<595::aid-smj47>3.0.co;2-5

Sjödin, D., Parida, V., Kohtamäki, M., & Wincent, J. (2020). An agile co-creation process for digital servitization: A micro-service innovation approach. *Journal of Business Research, 112*(June 2019), 478–491. https://doi.org/10.1016/j.jbusres.2020.01.009

Sluyts, K., Matthyssens, P., Martens, R., & Streukens, S. (2011). Building capabilities to manage strategic alliances. *Industrial Marketing Management, 40*(6), 875–886. https://doi.org/10.1016/j.indmarman.2011.06.022

Smirnova, M. M., Rebiazina, V. A., & Khomich, S. G. (2018). When does innovation collaboration pay off? The role of relational learning and the timing of collaboration. *Industrial Marketing Management, 74*, 126–137. https://doi.org/10.1016/j.indmarman.2017.11.001

Solís-Rodríguez, V., & González-Díaz, M. (2019). Prior interactions and contractual completeness in Spanish franchising. *Small Business Economics, 53*(3), 795–812. https://doi.org/10.1007/s11187-018-0067-8

Stadtler, L., & Probst, G. (2012). How broker organizations can facilitate public-private partnerships for development. *European Management Journal, 30*(1), 32–46. https://doi.org/10.1016/j.emj.2011.10.002

Steensma, H. K., Howard, M., Lyles, M., & Dhanaraj, C. (2012). The compensatory relationship between technological relatedness, social interaction, and knowledge flow between firms. *Strategic Entrepreneurship Journal, 6*(4), 291–306. https://doi.org/10.1002/sej.1144

Subramanian, A., Bo, W., & Kah-Hin, C. (2018). The role of knowledge base homogeneity in learning from strategic alliances. *Research Policy, 47*(1), 158–168. https://doi.org/10.1016/j.respol.2017.10.005

Taylor, A. (2005). An operations perspective on strategic alliance success factors: An exploratory study of alliance managers in the software industry. *International Journal of Operations and Production Management, 25*(5), 469–490. https://doi.org/10.1108/01443570510593157

Thorelli, H. B. (1986). Network: Between Markets and Hierarchies. *Strategic Management Journal, 7*(1), 37–51.

Traore, N., & Rose, A. (2003). Determinants of biotechnology utilization by the Canadian industry. *Research Policy, 32*(10), 1719–1735. https://doi.org/10.1016/S0048-7333(03)00081-7

Ungureanu, P., Bertolotti, F., Mattarelli, E., & Bellesia, F. (2020). Collaboration and identity formation in strategic interorganizational partnerships: An exploration of swift identity processes. In *Strategic organization (Vol. 18, issue 1)*. https://doi.org/10.1177/1476127019840148

Vogel, R., & Güttel, W. (2013). The dynamic capability view in strategic management: A bibliometric review. *International Journal of Management Reviews, 15*(4), 426–446. https://doi.org/10.1111/ijmr.12000

Voola, R., Bandyopadhyay, C., Voola, A., Ray, S., & Carlson, J. (2022). B2B marketing scholarship and the UN sustainable development goals (SDGs): A systematic literature review. *Industrial Marketing Management, 101*(December), 12–32. https://doi.org/10.1016/j.indmarman.2021.11.013

Wadhwa, A., & Basu, S. (2013). Exploration and resource commitments in unequal partnerships: An examination of corporate venture capital investments. *Journal of Product Innovation Management, 30*(5), 916–936. https://doi.org/10.1111/jpim.12037

Walter, A. (1999). Relationship promoters driving forces for successful customer relationships. *Industrial Marketing Management, 28*(5), 537–551. https://doi.org/10.1016/S0019-8501(99)00081-4

Waltman, L., van Eck, N. J., & Noyons, E. C. M. (2010). A unified approach to mapping and clustering of bibliometric networks. *Journal of Informetrics, 4*(4), 629–635.

Wang, L., Terziovski, M., Jiang, F., & Li, J. (2017). The effect of social capital on local suppliers' exploitative and exploratory learning in global buyer–supplier relationships: The moderating role of contract specificity. *R and D Management, 47*(4), 654–668. https://doi.org/10.1111/radm.12267

Wang, M., Mühlbacher, H., Wittmann, X., & Perrett, P. (2021). Dynamic collaboration between small- and medium-sized enterprises from highly dissimilar markets. *European Management Journal, 39*(2), 185–200. https://doi.org/10.1016/j.emj.2020.06.004

Yan, Y., & Child, J. (2002). An analysis of strategic determinants, learning and decision-making in Sino-British joint ventures. *British Journal of Management, 13*(2), 109–122. https://doi.org/10.1111/1467-8551.00226

Yang, C., & Lai, C. (2012). Relationship learning from organizational knowledge stores. *Journal of Business Research, 65*(3), 421–428. https://doi.org/10.1016/j.jbusres.2011.10.001

Yang, H., Lin, Z. J., & Peng, M. W. (2011). Behind acquisitions of alliance partners: Exploratory learning and network embeddedness. *Academy of Management Journal, 54*(5), 1069–1080. https://doi.org/10.5465/amj.2007.0767

Yeoh, P. L. (2009). Realized and potential absorptive capacity: Understanding their antecedents and performance in the sourcing context. *Journal of Marketing Theory and Practice, 17*(1), 21–36. https://doi.org/10.2753/MTP1069-6679170102

Yu, W., Jacobs, M. A., Salisbury, W. D., & Enns, H. (2013). The effects of supply chain integration on customer satisfaction and financial performance: An organizational learning perspective. *International Journal of Production Economics, 146*(1), 346–358. https://doi.org/10.1016/j.ijpe.2013.07.023

Zhu, Y., Wang, V. L., Wang, Y. J., & Nastos, J. (2020). Business-to-business referral as digital coopetition strategy: Insights from an industry-wise digital business network. *European Journal of Marketing, 54*(6), 1181–1203. https://doi.org/10.1108/EJM-01-2019-0011

Zollo, M., Reuer, J. J., & Singh, H. (2002). Interorganizational routines and performance in strategic alliances. *Organization Science, 13*(6), 701–713. https://doi.org/10.1287/orsc.13.6.701.503

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods, 18*(3), 429–472. https://doi.org/10.1177/1094428114562629

Marko Kohtamäki is a Professor of Strategy, and a director of the "Strategic Business Development" (SBD) research group at the University of Vaasa, and a Visiting Professor at Luleå University of Technology. Prof. Kohtamäki takes special interest in digital servitization, product-service systems, business model innovation, strategic practices and organizational change, business intelligence and strategic alliances. Prof. Kohtamäki has published in Strategic Management Journal, International Journal of Management Reviews, International Journal of Operations and Production Management, Strategic Entrepreneurship Journal, Technological forecasting and social change, International Journal of Production Economics, Long Range Planning, Technovation, Industrial Marketing Management, Journal of Business Research, among others.

Rodrigo Rabetino is a Professor at the School of Management at the University of Vaasa. His current research activities concern business intelligence, strategic agility, and small business management. He has published articles in international journals such as Industrial Marketing Management, International Journal of Production Economics, Journal of Small Business Management, Journal of Small Business and Enterprise Development, and International Entrepreneurship and Management Journal.

Tuomas Huikkola is an Associate Professor at the School of Management at the University of Vaasa. His special interest is in incumbent firm's strategic practices and routines that facilitate firm's strategic renewal. He has published in a number of academic journals and managerial books, including International Journal of Management Reviews, Technovation, Industrial Marketing Management, and Journal of Service Management.