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Buying knowledge-intensive business services: Overarching themes, actor relationships, and future research agenda

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Abstract

Knowledge-intensive business services (KIBS) provide industry-changing inputs to the business processes of other organizations that face complex tendering procedures. Service triads emerge as a response to resource and capability constraints due to high procedure benchmarks. Despite calls, research remains fragmented. Recent challenges driven by a pandemic and conflicts call for a systematic literature review that coherently integrates and describes the body of knowledge on sourcing KIBS triads. Employing the SPAR-4-SLR protocol to systematically review 205 articles, we integrate and describe key areas such as sourcing strategies, service delivery, ante-contract considerations, and overarching relationship dynamics. We highlight future research avenues toward bridging domain linkages including the development of an integrated model and the exploration of environmental uncertainties and individual behaviors in the sourcing of KIBS triads.

KEYWORDS

knowledge-intensive business services (KIBS), service sourcing, service triads, SPAR-4-SLR systematic literature review

INTRODUCTION

“The service sector, in particular business services, has become increasingly important in developed economies,” (Mota & Santos, 2021, p. 8), especially as knowledge-intensive business services (KIBS) provide industry-changing inputs to the business processes of other organizations (Muller & Doloreux, 2009). KIBS are distinguished by their high knowledge intensity and professionalized human capital (von Nordenflycht, 2010) and exemplified by IT consultancies and legal advisory firms. A significant challenge emerges for KIBS as they increasingly navigate complex, competitive tendering processes, necessitating the achievement of high benchmarks in tender requirements. Resource and capability constraints in this context pose a significant challenge, highlighted as a key research priority in service research by Ostrom et al. (2021). In response, the practice of forming service triads has emerged, where two service suppliers collaborate to meet a buyer’s needs, thereby creating effective configurations. While Wynstra, Spring, & Schoenherr (2015)

highlighted the need for detailed investigations into the interdisciplinary connections, actors, stages, and influences within knowledge-intensive service triads, currently, only isolated studies (e.g., Kalra, Lewis, & Roehrich, 2020; Vlachos & Dyra, 2020) have addressed parts of this complex topic. The recent challenges and opportunities arising in service procurement and management, driven by the pandemic, global conflicts, and rapid digitalization (Knight et al., 2022) call for a review with the purpose that integrates and explains (Kunisch et al., 2023) sourcing buying knowledge-intensive business services, their overarching themes, actor relationships, and proposes a future research agenda.

Despite extensive research conducted in distinct domains—KIBS (e.g., Amancio et al., 2022; Blackler, 1995; Freel, 2006; Miozzo et al., 2016; Strambach, 2001), service sourcing (e.g., Ellram, Tate, & Billington, 2008; Freeman & Cavinato, 1990; Park, Ro, & Kim, 2017; Parmigiani, 2007), and service triads (e.g., Choi & Wu, 2009a; Nätti et al., 2014; Shipilov & Li, 2010; Wynstra, Spring, & Schoenherr, 2015), the integration of

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these domains remains underexplored. Addressing this challenge of domain-linkage (Ford, 2011), our paper aims “to review a sub-stream of a particular literature that is more focused compared to what an existing review may have done” (Michailova, 2023, p. 362). We conduct a systematic literature review (SLR) to examine the integration of KIBS, service sourcing, and service triads, thereby addressing two main research questions aimed at understanding current research in service triads and identifying future theoretical directions:

- RQ1: What does extant literature regarding the sourcing and management of knowledge-intensive service triads find in terms of sourcing KIBS triads?
- RQ2: What future research directions should be pursued to enhance the theoretical understanding of sourcing KIBS triads?

Utilizing the SPAR-4-SLR protocol put forward by Paul et al. (2021), we concentrate on a comprehensive review sample of 205 academic articles that meet our stringent inclusion criteria, exploring the integration between KIBS, service sourcing, and service triads. The objective is to merge and distill key insights from the extant literature on knowledge-intensive service triads and to facilitate the derivation of structured theoretical recommendations for future research that adopts a theory-building perspective, directly addressing RQ1 and RQ2.

Our study identifies seven key themes and several insights within the thematic areas of service sourcing, service delivery, ante-contract considerations, and overarching relationship dynamics: We organize the literature and highlight sourcing strategies, contractual topics, management approaches, disruptions in triads, relationship aspects and their implications for service performance and sustainability. Firstly, we respond to Wynstra, Spring, & Schoenherr (2015) call by exploring the interdisciplinary connections, actor relationships, stages across the lifecycle, and influences such as disruptions in knowledge-intensive service triads. Furthermore, following Vedel, Holma, & Havila (2016), who noted that triads have “aroused increasing interest among researchers” (p. 1), our study expands the understanding by adding KIBS specific insights such as triad sourcing strategies and triad relationship types. Secondly, recognizing the need for a revised research perspective in light of recent global developments such as the pandemic, political tensions, and advancements in innovation and digitization, our study is “planting the seed” (Knight et al., 2022, p. 3) by introducing identifying critical aspects and describing three innovative future research avenues: an intersecting model on sourcing KIBS triads, the role of environmental uncertainty and research on individual behavior in this context. Thirdly, our study aligns with Ostrom et al.’s (2021) identification of resource and capability constraints as a top service research priority, offering “real, valuable insight that can be immediately applied by

practitioners” (Knight et al., 2022, p. 1) on resource solutions such as sourcing strategies and contractual aspects within the KIBS and service triads context.

CONCEPTUAL BACKGROUND

In the rapidly evolving landscape of professional services, businesses are increasingly turning to specialized providers to gain competitive advantages, making the strategic sourcing of these services a critical factor for success. This study delves into the complex dynamics of business-to-business (B2B) service procurement. As firms venture into the services market, the decision to procure professional services from external, specialized providers becomes pivotal. This strategic move not only broadens their knowledge base and technical capabilities but also offers potential cost efficiencies. Utilizing a make-or-buy decision framework, companies not specialized in offering complex services increasingly prefer to outsource these functions to adept vendors (Welch & Nayak, 1992). These ‘buying companies’ are central to the strategic business-to-business (B2B) sourcing landscape, distinguishing themselves from business-to-consumer (B2C) service dynamics. In the realm of B2B business services, strategic sourcing becomes a key endeavor, with these firms recognizing the profound impact of vendor selection on their economic trajectory (Lawrence et al., 2019; Parmigiani, 2007). The interaction between suppliers and entities providing B2B business services, and buying companies often evolves into complex triadic relationships to meet tender requirements. Unlike the procurement of goods, sourcing professional services frequently navigates beyond the confines of standardized performance and price descriptions (Hasija, Pinker, & Shumsky, 2008). This paper aims to conduct an SLR to examine the integration of KIBS, service sourcing, and service triads.

Service sourcing

Sourcing, the act of procuring goods or services from an external provider, encompasses supplier search and evaluation, and management of order delivery (Ellram, Tate, & Billington, 2008). Strategic sourcing, which emerged in the 1980s and 1990s, aims for the ongoing optimization of procurement activities, emphasizing the make-or-buy decision (Freeman & Cavinato, 1990; Welch & Nayak, 1992). This approach has made the service provider market more competitive and innovative. Buying organizations strive to procure high-quality services at favorable prices, developing methods to evaluate, negotiate with, and select suppliers. These methods aim to reduce information asymmetry and improve the benefit–cost ratio for the buying organization (Obloj & Zemsky, 2015).

Payne & Dorn (2012) outline the sourcing process as six steps: data collection and spend analysis, market research, request for x (RFx) process, negotiations, contracting, implementation, and continuous improvement. Sourcing initiatives typically start with collecting and analyzing data to evaluate benefit–cost ratios, cost-effectiveness, and opportunities for cost minimization of both internal processes and external service providers. This analysis forms the foundation of the tendering process. The RFx process, serving various objectives, ultimately leads to selecting a prospective provider and constitutes a key part of the due diligence process, guiding negotiations on contractual goals and responsibilities (Katok, Engelbrecht-Wiggans, & Haruvy, 2007). The negotiation phase aims to finalize a contract that kick-starts the service provision. These procurement steps can be undertaken separately or together to generate new information, refine service requirements, monitor service delivery, and inform future sourcing efforts (Li, Zhang, & Fine, 2012).

Giving the current conditions of sourcing services, Ostrom et al. (2021) underscore the importance of addressing resource and capability constraints, recognizing these as critical priorities in service research. These constraints significantly impact the strategic sourcing process, as organizations must align their procurement strategies with their internal resources and capabilities to effectively manage and mitigate these limitations.

Knowledge-intensive business services

Although a precise definition of KIBS remains unspecified, they are often described as entities “providing knowledge-intensive inputs to the business processes of other organizations, including private and public sector clients” (Muller & Doloreux, 2009, p. 65). Research on KIBS has mainly concentrated on their unique characteristics, as illustrated by scholars like Strambach (2001), von Nordenflycht (2010), and Ritala et al. (2013). Key features identified include the requirement of substantial human capital and expertise, high intangibility, and limitations in standardization (Strambach, 2001). Von Nordenflycht (2010) highlights KIBS’ knowledge intensity, low capital intensity, and professionalized workforce. Ritala et al. (2013, p. 18) detail “four capability categories” for KIBS: knowledge management, service productization, process management, and relationship orchestration. Moreover, Muller & Doloreux (2009) point out KIBS’ intermediary role in providing B2B knowledge and innovation inputs to client companies. Aligned with the purpose of our study and building on the insights of leading KIBS researchers, we define KIBS as *services providing specialized, expert knowledge with a focus on customization and significant standardization constraints*.

Common KIBS in the B2B sector encompasses a wide range of services, including computer and IT services, telecommunications, information services, video and film

production, scientific research and development, legal and accounting services, management consulting, architecture and engineering services, advertising and market research, employment services, and financial services, including (re)insurance and pension fund management. The complexity of the KIBS sector in today’s competitive B2B environment mirrors the growing challenges of the global business landscape. KIBS providers face competition across different geographies, navigating international regulations and cultural differences. They often deal with complex regulations, especially concerning data privacy, security, and intellectual property, necessitating continuous updates on evolving standards. The rapid technological evolution further compounds the sector’s complexity. Businesses facing challenges increasingly require specialized and advanced services, intensifying the KIBS sector’s complexity (Miozzo et al., 2016).

Service triads

Dyads, consisting of two nodes like a buyer and supplier, represent the most basic social units (Choi & Wu, 2009a). Service triads add a third node, creating configurations with a service supplier, a buyer, and a third party. For instance, a common triad might involve one buyer and two suppliers, serving as the simplest unit in a service network. This arrangement not only offers a simplified model for more complex structures beyond dyads (Choi & Wu, 2009a; Wynstra, Spring, & Schoenherr, 2015) but also provides insights into business interactions (Ford, 2011). In traditional business service sourcing, common triads include combinations of one buyer with two suppliers, one supplier with one intermediary and one end-user, or one supplier with two buyers (Smith & Laage-Hellman, 1992).

To fully appreciate the complexity of multi-relationship dynamics, we avoid narrowly defining the triad nodes beyond the basic buyer–supplier dyad, permitting the third party to assume various roles depending on the context (Choi & Wu, 2009a; Smith & Laage-Hellman, 1992; Wynstra, Spring, & Schoenherr, 2015). Peng, Martinez, & Yu (2010) suggest that triad relationships vary based on different conditions and actor configurations, identifying three triad types, each centered around a focal node, as depicted in Figure 1. These triads

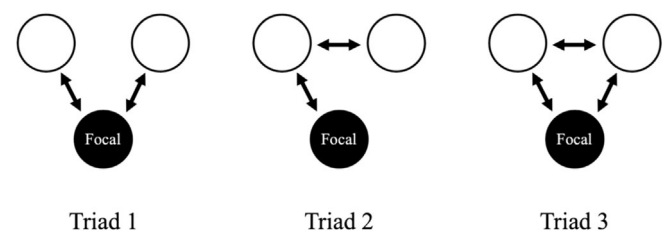


FIGURE 1 Types of triads (based on Peng, Martinez, & Yu, 2010).

are termed “synonymous” because they encompass all three nodes with various interconnections. We advocate for a comprehensive model using indefinite directional arrows to represent diverse relationships, including unilateral dependency, mutual dependency, and collaboration. This approach reflects complex organizational structures, such as when an internal service unit (like accounting or IT) procures KIBS from an external provider while also delivering KIBS to other company departments (Freel, 2006). Considering this complexity, there is a compelling need to explore the interdisciplinary connections, actors, stages, and influences that shape the dynamic landscape of knowledge-intensive service triads (Wynstra, Spring, & Schoenherr, 2015). Such exploration will enable a deeper understanding of the multi-layered, interconnected nature of these service networks, highlighting how they adapt and respond to evolving market conditions and organizational needs.

METHODS

Qualitative approaches, flexible for varied research goals, identify, analyze, and link concepts (Braun & Clarke, 2006). In our qualitative study, we systematically conduct a literature review (SLR) focusing on the sourcing and management of knowledge-intensive service triads. This process reveals mutual causal relationships and thematic similarities, laying the groundwork for future research directions (Tranfield, Denyer, & Smart, 2003). This comprehensive topical coverage (Paul, Khatri, & Kaur Duggal, 2023) allows for theoretical reframing in relation to each other and to be theoretically paved in response to current developments and challenges in these domains.

We adopted the SPAR-4-SLR protocol put forward by Paul et al. (2021), designed to “anticipate problems, reduce arbitrariness, promote accountability, and uphold research integrity” (Paul et al., 2021, p. 5). This protocol structures the review process into three distinct phases:

- **Assembling:** The initial phase centers on defining the review’s scope, which entails selecting the publication types and our period from 2006 onwards. This step includes identifying search keywords guided by existing research (e.g., Choi & Wu, 2009a; Wynstra, Spring, & Schoenherr, 2015) and systematically collecting pertinent literature, relevant literature on KIBS, service sourcing, and service triads.
- **Arranging:** The arranging phase follows the initial assembly, focusing on organizing, filtering, and processing the collected literature. It involves categorizing studies by domain, temporal distribution, research methods, and supply chain types. In this stage, we define inclusion and exclusion criteria to precisely scope our systematic literature review on sourcing and managing knowledge-intensive service triads.

- **Assessing:** In the assessing phase, we analyze and evaluate 205 selected papers to uncover insights and identify gaps in KIBS, service sourcing, and service triads research, pinpointing future research avenues. This phase involves visual representation of results in Figures 3 and 4 and a critical examination of the study’s limitations.

Figure 2 graphically outlines our systematic review methodology, showcasing the structured protocol ensuring thorough analysis in SLR methods.

Assembling phase: identification and acquisition

In the first phase of our systematic literature review, adhering to the SPAR-4-SLR protocol by Paul et al. (2021), we focused on systematically identifying and acquiring relevant literature to build a strong research foundation. This phase was methodically split into two key sub-stages: identification and acquisition. These steps were carefully designed and implemented to ensure a

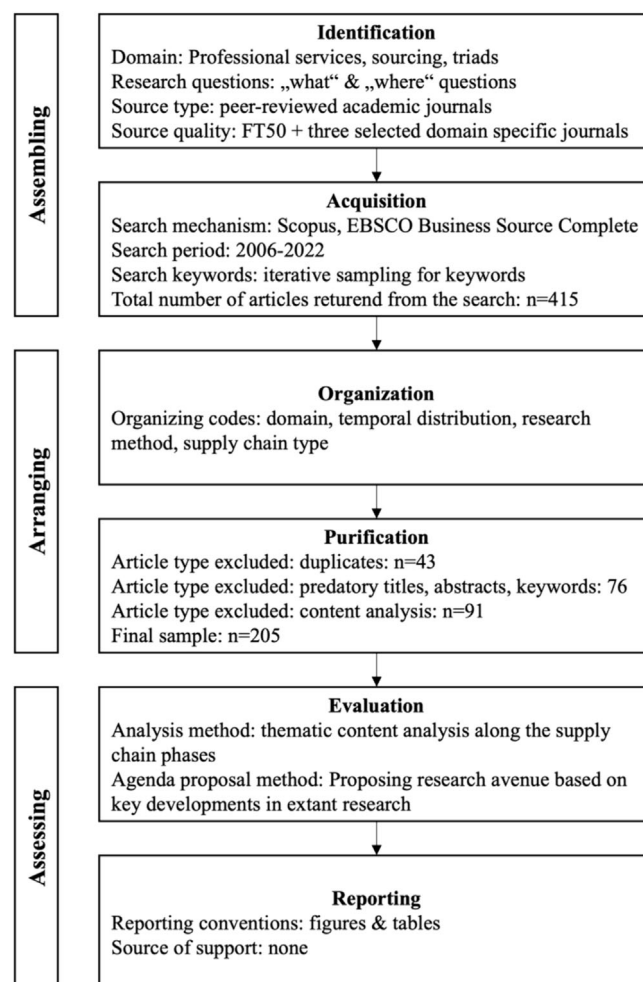


FIGURE 2 Process according to SPAR-4-SLR protocol.

comprehensive and pertinent literature collection, crucial for our study. We started by precisely defining the research domain, concentrating on the interplay among KIBS, service sourcing, and service triads.

Following Burgess, Singh, & Koroglu (2006) and Paul et al. (2021), we maintained stringent data quality and consistency standards by focusing on published peer-reviewed primary studies and excluding books, book chapters, conference proceedings, and whitepapers from our review, as they “as they are less likely to contribute substantially to scholarly advancement (i.e., explanatory > exploratory or often do not undergo rigorous peer review” (Paul et al., 2021, p. 7). After setting our publication inclusion and exclusion criteria to published peer-reviewed primary studies, we used the 2016 Financial Times FT50 journal list as our quality benchmark (Paul et al., 2021) “to manage the number of articles reviewed, wherein articles included are published in the top percentiles of journals in relevant subject areas and/or categories” (Paul et al., 2021, p. 7). We focused on publications within the top percentiles of journals across relevant subject areas and categories, mirroring the rigorous methodology employed by predecessors such as Biehl, Kim, & Wade (2006), Burgess & Shaw (2010), and Palmatier, Houston, & Hulland (2018). Our methodology not only encapsulates the pursuit of top-tier literature but also adopts a broader, more inclusive lens, as underscored by Hiebl (2023), who critically examines the prevailing “an A is an A” mentality. Hiebl (2023) suggests “that valuable research can be found, published, and cited outside of A-ranked journals, too.” (p. 7), thus reinforcing the importance of our expanded search beyond traditional confines to encompass databases such as Google Scholar and the Web of Science SSCI. This expansion facilitated the inclusion of pivotal works from the Journal of Supply Chain Management, Journal of Purchasing and Supply Management, and International Journal of Operations and Production Management, serving as rich sources of pertinent papers. Our criteria, integrating insights from Hiebl (2023) and Paul et al. (2021), covered a wide range of domains, balancing top-tier literature inclusion and source diversity, and maintaining a manageable sample size. Our review, reflecting trends in globalization, emerging technologies, and digitalization over the past 25 years, starts from seminal works around the millennium (e.g., Antonelli, 1998; Blackler, 1995; Cohen & Zysman, 1988). The thematic relevance in our corpus noticeably increased since 2006 (e.g., Anderson, Morrice, & Lundeen, 2006; Cousins et al., 2006; Goffin, Lemke, & Szwajkowski, 2006), reaching the threshold of at least three papers with thematic relevance, leading to a sample timeframe of 2006 to 2022, ensuring contemporary and qualitative relevance.

Guided by existing research (e.g., Choi & Wu, 2009a; Wynstra, Spring, & Schoenherr, 2015), our sampling began with keyword searches in key databases like EBSCO, Scopus, Emerald, and JSTOR, aiming to

pinpoint significant work on the service supply chain and to grasp foundational studies. These initial searches refined our keywords through trials in database searches on sample datasets, checking their alignment with our research focus. This approach led to the discovery of less obvious keywords, like “human resource outsourcing,” related to the service supply chain. We narrowed our search by excluding terms like “logist*”, “health*”, and “transport*” to concentrate on the business service sector, service supply chain, KIBS sourcing, and triads, avoiding areas not directly related to our discipline (e.g., Boute & Van Mieghem, 2014; Kros, Kirchhoff, & Falasca, 2018). This exclusion was confirmed after reviewing several studies in logistics, health, and transportation, which were not pertinent to KIBS sourcing or service triads. Consequently, we constructed a refined search string:

```
TITLE-ABS-KEY("knowledge intensive services") OR TITLE-ABS-KEY("service triads") OR TITLE-ABS-KEY("service supply chain") OR TITLE-ABS-KEY("supplier relationship") OR TITLE-ABS-KEY("human resource outsourcing") OR TITLE-ABS-KEY("strategic sourcing") OR TITLE-ABS-KEY("supply chain networks") AND NOT TITLE-ABS-KEY("logist*") AND NOT TITLE-ABS-KEY("transport*") AND (LIMIT-TO (PUBYEAR,AFT2005))
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We applied our search string at the title, abstract, and article keyword level in the Scopus database and, in adapted form, in the EBSCO Business Source Complete database. This targeted search was limited to FT50 journals and specifically included the Journal of Supply Chain Management, Journal of Purchasing and Supply Management, and International Journal of Operations and Production Management. This strategic approach resulted in 415 articles meeting our strict inclusion criteria, focusing on credible sources in the field.

Arranging phase: organization and purification

During the arranging phase of our systematic literature review, we organized and purified the collected literature to ensure a rigorous and transparent synthesis of findings related to service supply chains. We classified the articles using codes for domain, temporal distribution, research method, and supply chain type: (1) Domain: We identified each article's specific study area within KIBS, sourcing, and triads, enabling the detection of research patterns and gaps. (2) Temporal distribution: coding by publication year helped trace the evolution of research interests and methodological advancements, shedding light on the field's historical development. (3) Research method: articles were categorized by their primary research method (e.g., conceptual, survey, case study, mathematical), crucial for assessing

methodological diversity and evidence robustness. (4) Supply chain type: classifying articles based on the supply chain type (e.g., general, dyad, triad, network) they focused on allowed targeted literature analysis specific to service supply chains. This classification provided a structured way to systematically identify patterns and trends, following Paul et al. (2021)'s recommendations on the importance of methodical organization in enhancing literature review coherence and navigability.

We proceeded with the purification process, guided by Liberati et al. (2009), refining our search results through multiple phases by applying specific inclusion or exclusion criteria to remove non-relevant articles. Initially, we eliminated duplicates ($n = 43$), titles and abstracts from predatory journals or unrelated to the domain ($n = 76$), and studies on unrelated topics like production process/component modularity and price-differentiating mechanisms, as seen in works by Furlan, Cabigiosu, & Camuffo (2014), Jap (2007), and Lösch & Lambert (2007), excluding another 91 articles. Conversely, we retained some manufacturing supply chain research with generalizable findings to service sectors within a theoretical context. This refinement, in line with Liberati et al. (2009), was crucial to include only the most relevant studies, narrowing down to 205 articles from the initial 415, thereby ensuring a focused and pertinent collection for analysis, in compliance with the SPAR-4-SLR protocol by Paul et al. (2021), to distill the body of literature into a manageable and relevant corpus for analysis.

Assessing phase: evaluation and reporting

Our systematic literature review employs thematic content analysis to examine the intersection of KIBS, service sourcing, and service triads along supply chain phases. This methodological approach enables us to identify mutual causalities, thematic similarities, major themes, and research gaps. Following the guidelines by Tranfield, Denyer, & Smart (2003), we aim to reframe these domains in relation to each other and address current developments and challenges in purchasing and marketing. Our thematic comparison and aggregation of scholarship demands a minimum quality standard, requiring at least five articles per theme to ascertain the strongest subject connections in unclear situations. To ensure the reliability of our thematic aggregation, we conduct a randomized blind test on a sample, following qualitative research standards recommended by Madill, Jordan, & Shirley (2000). This rigorous evaluation process ensures our findings augment significantly to the existing body of knowledge.

In our review, we analyzed 205 articles, finding 97 spread across 24 FT50 international scientific journals and 108 in domain-specific journals (Journal of Purchasing and Supply Management, International Journal of Operations and Production Management, and the

Journal of Supply Chain Management). Operations-focused articles predominated, with 83 entries, including 31 in the Journal of Operations Management, highlighting its significant impact. Supply management journals contributed 73 articles, showing a strong academic inclination toward this area. The remaining 49 articles were distributed among 17 journals with diverse themes like business ethics, marketing, information systems, and applied psychology, underscoring the interdisciplinary nature of our research theme. Our temporal analysis, illustrated in Figure 3, revealed a heterogeneous publication pattern, with a peak in 2019 and 2020, suggesting heightened academic interest, and a decline in 2021 and 2022 due to the global disruptions from the COVID-19 pandemic. Our comprehensive reporting, detailed in figures and tables (e.g., Figures 3 and 4), adheres to the SPAR-4-SLR protocol's assessment stage, ensuring our review's findings are coherently presented and beneficial for guiding future research (Figure 5).

REVIEW INSIGHTS

Below, we synthesize and summarize the research on sourcing KIBS triads based on organized thematic sections along the supply chain phases. Table 1 offers a visual overview of the findings. It maps the focus of research topics within specific supply chain stages—service sourcing, service delivery, and ante-contract. It details the main and critical aspects per stage. Following this, we discuss key developments in the existing research.

Thematic section 1: sourcing KIBS triads and the sourcing phase

The sourcing phase was examined in 53 research papers, with 36 focusing on sourcing strategies and 17 addressing contracting and financial issues. Research in these areas advanced steadily, peaking around 2018/2019. While diverse theories were applied to explore sourcing themes, agency theory emerged as the most prominent.

Key theme 1

The sourcing strategy a buying company adopts is a pivotal initial step in the procurement process, significantly affecting costs and performance (Ellram & Tate, 2015). In making a make-or-buy decision, the company decides whether to internalize service provision, delegate parts or all tasks to a service provider, outsource through a long-term buyer-supplier relationship, or engage a new service provider (Park, Ro, & Kim, 2017). While the literature often emphasizes relationships, it tends to overlook the role of technology in these processes. Studies highlight

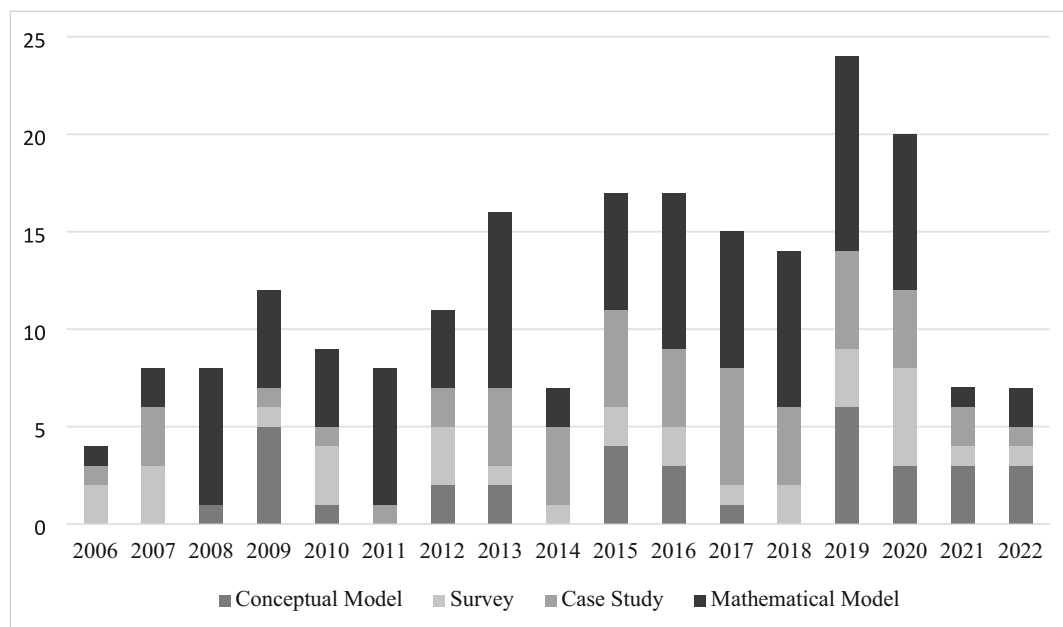


FIGURE 3 Distribution of articles over time and with regard to research methodology.

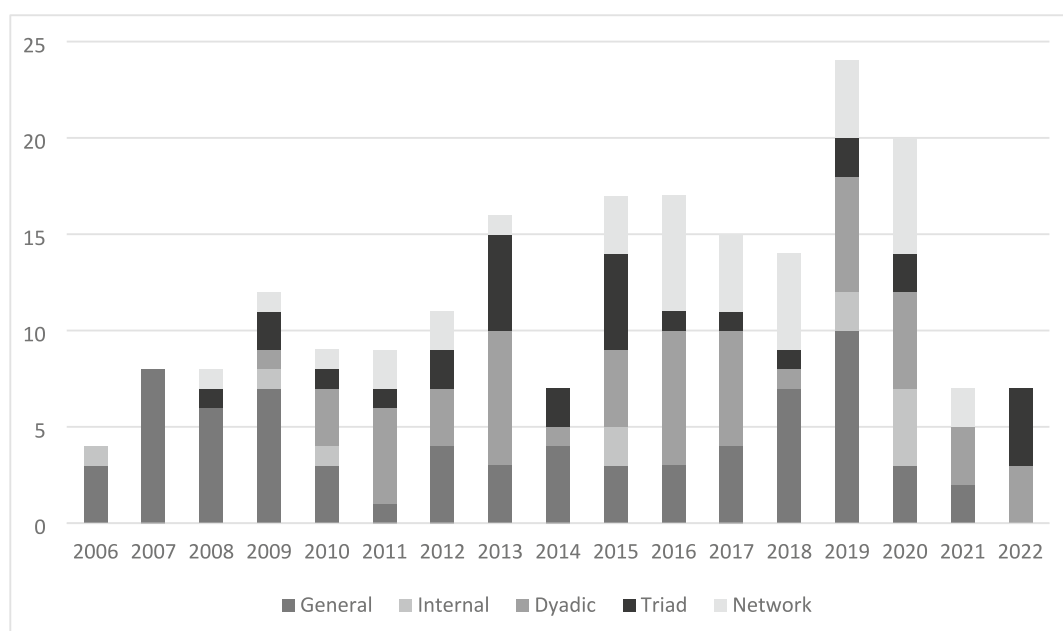


FIGURE 4 Distribution of articles over time with regard to supply chain type.

the benefits of independent service provision for new, innovative services that established suppliers might not support due to lacking specific knowledge or infrastructure (Park, Ro, & Kim, 2017; Parmigiani, 2007). However, combining independent service provision with outsourcing introduces the necessity for effective risk management (Uenk & Taponen, 2020). Outsourcing tasks to either new or long-standing service providers enables buying companies to tap into external expertise and pre-established processes (Parmigiani, 2007). A key

strength of existing research lies in examining the make-or-buy decision's impact on subsequent phases, such as service delivery quality (Aral, Bakos, & Brynjolfsson, 2017), though there's a noted gap in exploring the factors driving these strategic sourcing decisions.

Buyers face a crucial decision between minimizing risk through supplier diversification and achieving scale economies via supplier consolidation (Goldschmidt et al., 2020). Sourcing strategies vary widely from establishing preferred suppliers (Sieweke, Birkner, & Mohe, 2012;

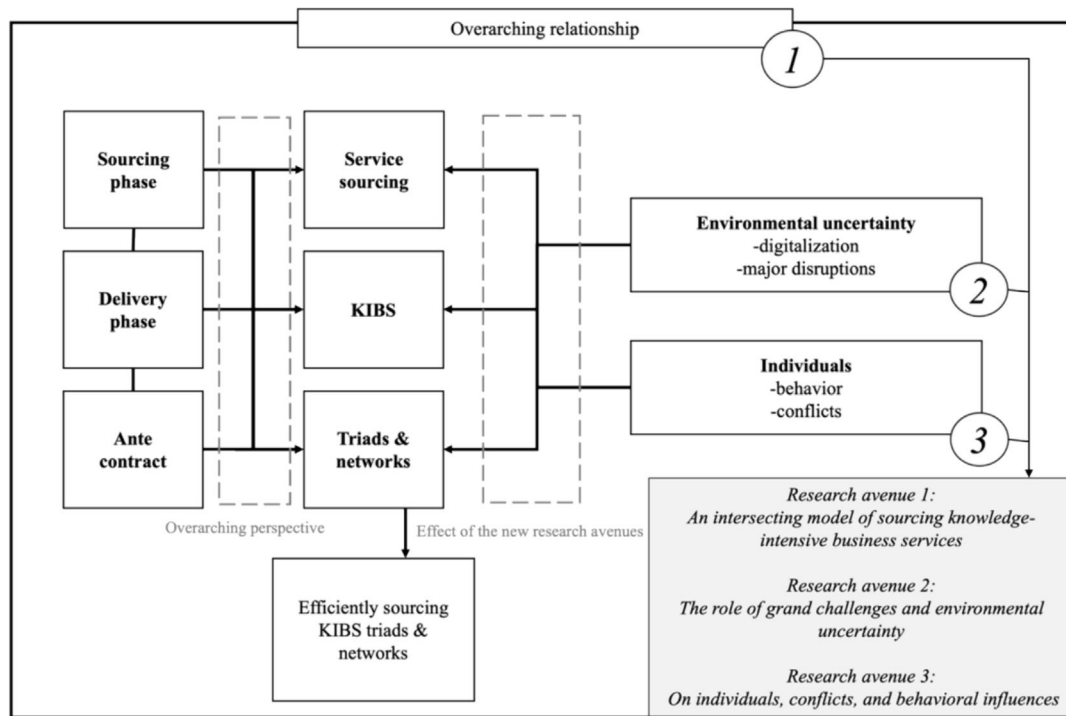


FIGURE 5 A research framework on sourcing KIBS in triads and networks.

TABLE 1 Identified thematic sections, key themes, and main insights.

Thematic section	Key themes	Main insights	Critical aspects
Service Sourcing	1. Sourcing strategy	Outsourcing	Limited research on technology utilization
		Risk mitigation	Less research on factors influencing outsourcing decision
		Sourcing strategy in triads and networks	No main research direction
Service Delivery	2. Contracting & financials in service sourcing	Supplier positioning	
		Search costs	Limited research on technology utilization
		Contract design	Limited use of modern theories
	3. Management approaches & governance in KIBS	Governance framework	Lack of longitudinal studies
Ante Contract		International collaboration	
		Opportunism	Lack of comparative studies
	4. Disruptions in triads & networks	Origin and areas of disruptions	Lack of KIBS-specific research and questionable transferability
Overarching Relationship		Risk mitigation approaches	
	5. Service performance	Relationship impact on performance	Contradictory findings
		Factors influencing service performance	
	6. Buyer–supplier relationship	Relationship types	Granularity in relationship analysis
		Ethics	
	7. Sustainable supply chain	ESG aspects	Missing innovative solutions for sustainability

Tchokogué & Merminod, 2021) and formalizing sourcing processes (Pemer & Skjølsvik, 2016) to implementing enterprise resource planning systems (Huang & Handfield, 2015). This indicates a diverse range of approaches in the sourcing phase without a clear predominant direction. Further research investigates how sourcing strategies influence organizational behavior, affecting suppliers' adaptation patterns (Pulles & Loohuis, 2020) and their capacity for value creation (Kähkönen & Lintukangas, 2018). The study of sourcing strategies also covers triads and networks, where rival triads, featuring competing suppliers or buyers, lead to increased price transparency (Chen & Guo, 2014). Competition among suppliers can generate uncertainty, leading to higher initial costs (Li & Debo, 2009), miscoordination (Bimpikis, Fearing, & Tahbaz-Salehi, 2018), inefficiencies (Obloj & Zemsky, 2015), but potentially enhancing service delivery performance (Sting, Stevens, & Tarakci, 2017). Multi-sourcing strategies and networked relationships allow buying companies to meet efficiency goals and reduce supply chain vulnerabilities (Hearnshaw & Wilson, 2013). Moreover, buyers have the flexibility to retroactively change sourcing decisions, dynamically adjust to uncertain service requirements, or negotiate lower prices, which significantly impacts relationship commitment (Chae, Choi, & Hur, 2017; Li, Zhang, & Fine, 2012).

The literature highlights the importance of the supplier's perspective in the sourcing phase, influenced by their goals and the duration of buyers' sourcing projects. Suppliers can act as generalists or specialists, taking on roles like one-stop shops or strategic partners (Chatain & Zemsky, 2007). Some services may be associated with specific supplier employees, creating unique buyer-supplier relationships that elevate the service provider to a preferred supplier status (Andersen, Ellegaard, & Kragh, 2015), which could affect the objectivity of sourcing decisions (Lawrence et al., 2019). Although supplier strategy is crucial, there is no consensus on a dominant sourcing strategy pathway, with the literature presenting hundreds of approaches generally categorized under broader sourcing strategy topics.

Key theme 2

After completing the sourcing phase, the contracting process begins, involving multiple negotiation rounds and the establishment of a pricing agreement, which significantly impacts KIBS scope. Initial sourcing project expenses pose a substantial barrier to finding new suppliers. However, investing in robust information technology systems to manage and tender suppliers can greatly reduce search costs (Aral, Bakos, & Brynjolfsson, 2017), enhancing the selection process and improving service delivery quality (Moxnes, Bernard, & Saito, 2018). Despite these benefits, there is limited research on technology's role in the KIBS contracting process.

In contract design, large buying companies strive to make procurement decisions efficiently across departments, ensuring individual needs are met while considering the total cost of sourcing on a company-wide scale (Fang & Natarajan, 2020). Contract design elements are often negotiated and adjusted based on service delivery needs or linked to direct performance metrics (Kleemann & Essig, 2013). Research in this area leverages established theories to examine negotiation strategies that provide mutual benefits or those resulting in a win-lose situation due to imbalances. Studies also highlight the effectiveness of information sharing (Thomas et al., 2013) and building relational capital based on historical negotiation strategies (Thomas, Murfield, & Eastman, 2020). However, a noted limitation is the infrequent application of contemporary theories in this research domain.

Thematic section 2: sourcing KIBS triads and the delivery phase

Key theme 3

In this phase, the governance framework is crucial in regulating numerous service-sourcing processes and defining the norms and guidelines governing all service delivery activities. This framework distributes responsibilities across stakeholders, rather than isolating them to specific individuals or roles (Bastl, Johnson, & Finne, 2018). Effective governance mechanisms enhance collaboration within the supply chain (Um & Oh, 2020). Research has explored how governance details influence process standardization and monitoring across the service supply chain, as well as collaboration between internal business units (e.g., Aoki & Wilhelm, 2017; Jayaraman et al., 2013). Various coordination mechanisms can be applied among service partners to improve inter-organizational coordination (Ateş, Van den Ende, & Ianniello, 2015). With the increasing complexity of service delivery systems, governance and relational governance approaches also grow in complexity (Roehrich & Lewis, 2014). The management and governance aspect is a major research area with 32 papers, while a newer research line focuses on disruptions within triads and networks, which began gaining attention in 2014.

Research on the delivery phase, especially in international KIBS, emphasizes the need for clear standards, processes, and systems to facilitate cross-border collaboration, which contributes to stable service performance (Hydle & Hopwood, 2019). The resilience of supply chain networks relies on the mutual complementarity of its members (Ostrovsky, 2008), highlighting the importance of service delivery networks that offer consolidated and cooperative services in strategic sourcing management. Structured yet adaptable information flows, knowledge sharing, and flexible task allocation are key to improving collaboration between buyers and suppliers (Dong,

Johar, & Kumar, 2011; Dong, Ju, & Fang, 2016). Although global connectivity through IT systems provides compelling advantages (Jean, Sinkovics, & Cavusgil, 2010), some researchers have noted that KIBS tends to create local hubs of knowledge communities (e.g., Hwang & Krackhardt, 2019). Management strategies in governance processes and sourcing arrangements, like fixed-price contracts, are designed to either capitalize on knowledge spillovers by leveraging information asymmetries (Zanarone, Lo, & Madsen, 2016) or to integrate external knowledge via the sourcing strategy or through partnerships within a triad (Isaksson, Simeth, & Seifert, 2016; Protogerou, Caloghirou, & Vonortas, 2017; Wu, Choi, & Rungtusanatham, 2010). Researchers emphasize managing distributed knowledge as crucial for effectiveness and productivity (Isaksson, Simeth, & Seifert, 2016). However, there is a noted lack of longitudinal studies examining the evolution and long-term effectiveness of governance frameworks.

Research on service delivery management has shown how opportunistic actions can impact the buyer–supplier relationship, stemming from factors like behavioral uncertainty (Wang et al., 2012), power dynamics (Huo et al., 2018), or differences in relational capital (Villena & Craighead, 2017). Mellewigt, Hoetker, & Lütke Witt (2018) suggest that governance processes and detailed administrative methods can reduce opportunism, noting that streamlined processes or balanced stakeholder dependencies can prevent it effectively. Established relationship norms via governance or the cooperativeness of an intermediary sourcing agent can also curtail opportunism (Tangpong, Hung, & Ro, 2010). While dedicated monitoring can decrease opportunistic behavior (Heide, Wathne, & Rokkan, 2007), there is a scarcity of comparative studies assessing the effectiveness of different governance frameworks across industries or regions.

Key theme 4

Extensive research has explored disruptions affecting performance in the service delivery process, examining potential causes and mitigation strategies within the KIBS, service sourcing, and service triads environment. Disruption risks escalate with network size and are influenced by the economic conditions of the involved geographic areas, affecting both upstream and downstream suppliers. Disruptions span various industries, impacting supply chains even in distant locations, and are intensified by the timing of order aggregations (Osadchiy, Gaur, & Seshadri, 2015). The influence of different supplier tiers on the network is variable and phase-dependent. Although having more suppliers may enhance efficiency, this does not always lead to optimal network performance (Bimpikis, Candogan, & Ehsani, 2019). While the focus is often on the network perspective, some studies investigate the individual-level impacts. Risks

related to individual stakeholders can precipitate disruptive events, adversely affecting performance and share prices, which can harm supply chain partners (Intintoli, Serfling, & Shaikh, 2017). The national cultures of individuals influence the repercussions of psychological contract breaches, especially concerning trust and future collaboration after a disruption (Eckerd et al., 2016). Additionally, the cognitive abilities of managers and corporate leaders play a significant role in either exacerbating dysfunctional conflicts or fostering constructive interactions at both the individual and organizational levels (Reimann, Kosmol, & Kaufmann, 2017).

Research has explored strategies to counteract disruptive events in service delivery. Reactively, companies may pressure suppliers to resolve disruptions or threaten contract termination. Proactively, they can restructure higher-tier suppliers to pre-empt potential disruptions (Zhao, Zuo, & Blackhurst, 2019). Firms with a keen understanding of disruptions and their management can establish contingency plans and security protocols, gaining a competitive edge (Park, Min, & Min, 2016). Post-disruption, maintaining trust hinges on perceived procedural justice, which can be bolstered by ensuring transparency, neutrality, and inclusivity in resolving the incident (Wang, Craighead, & Li, 2014). Although these insights generally apply to networks or service industries, there's a research gap regarding disruptions in the KIBS sector. The critical concern is whether the existing findings adequately apply to KIBS, given their qualitative nuances.

Thematic section 3: sourcing KIBS triads and the ante contract phase

Key theme 5

The current research investigating the correlation between KIBS, service sourcing, and service triads is focused mainly on service performance. This represents one of our sample's dominant research focuses, with 47 studies. The preponderance of research on this subject can be attributed to the diverse forms of performance and the dependence of an individual node's performance on its level of structural integration into the entire supply chain (Choi & Kim, 2008). The main goal of the research in this area is to achieve high-quality service execution. Several studies have demonstrated that execution quality and performance, particularly in the context of innovation, are significantly related to the characteristics of contact relationships in dyadic connections (e.g., Autry & Golicic, 2010; Jajja et al., 2017), in triadic constructs (e.g., Karatzas, Johnson, & Bastl, 2016; Karatzas, Johnson, & Bastl, 2017), and in more extensive networks (e.g., Cheung et al., 2020; Donada et al., 2019; Zhang, Lawrence, & Anderson, 2014), as well as the establishment of partnerships based on justice, equality, and

efficient communication (Paulraj, Lado, & Chen, 2008; Liu et al., 2012; Zacharia et al., 2011). However, recent research has revealed an exciting and somewhat unexpected insight. Beyond a specific threshold, trust can have more negative consequences than benefits, such as a drop in service performance (Villena, Choi, & Revilla, 2019). To limit the vulnerability of trust, direct monitoring, assurance of service maintenance, and confirmation within the business relationship are potential control mechanisms (Gundlach & Cannon, 2009; van der Valk & van Iwaarden, 2011).

Innovation performance in KIBS is influenced by various factors such as collaboration (Miozzo et al., 2016), sourcing (Heidenreich, 2009), outsourcing (Cabigiosu, Zirpoli, & Camuffo, 2012), and customer input (Sampson & Spring, 2012), necessitating broad adaptation in the service sector. Relationships with geographically distant suppliers can offer unique, non-redundant knowledge, boosting innovation and productivity (Todo, Matous, & Inoue, 2016). Interactive knowledge exchange is vital for competitive advantage, trust, and enhanced performance (Raddats et al., 2016; Revilla & Knoppen, 2015). Studies suggest that information asymmetries can be mitigated in flexible networks by setting baseline service performance and quality standards, with contracts and penalties for non-compliance (Craig, DeHoratius, & Klabjan, 2020; Ren, Zhang, & Feng, 2019). Organizations might also dynamically adjust expenditures based on actual performance to improve supplier outcomes (Li, Zhang, & Fine, 2012). Social capital elements like interdependencies, relationship duration, and interaction intensity are key to performance improvement (Kulangara, Jackson, & Prater, 2016; Lawson, Tyler, & Cousins, 2008; Villena, Revilla, & Choi, 2011), with social capital bonds being crucial for optimizing performance (Cousins et al., 2006; Krause, Handfield, & Tyler, 2007; Lawson, Tyler, & Cousins, 2008). In the KIBS context, employee performance is central to enhancing service quality and customer satisfaction, crucial for organizational success (Liao et al., 2009).

Research in this field seeks to assess the diverse factors, mechanisms, and methodologies that influence service performance and its outcomes. Notably, even with extensive prior research, there remains a rich and sometimes contradictory discussion, often due to minor variables like trust intensity, highlighting the complexity and nuanced nature of service performance dynamics.

Thematic section 4: sourcing KIBS triads and the overarching relationship

Key theme 6

Beyond focusing on individual phases, another research direction has provided insights across multiple process phases. Studies exploring KIBS, service triads, and

service networks have delved into the cooperation between buyers and suppliers, identifying a range of individual and collective factors impacting these relationships. Research has shown that asymmetric relationships can have a significantly negative impact on satisfaction and performance, as demonstrated by studies by Kim & Choi (2015), Villena & Craighead (2017), Lashley & Pollock (2020), and Ma, Hofer, & Aloysius (2021). A close partnership between stakeholders is associated with increased performance and service quality, as well as positive externalities such as increased innovation and development skills, or administrative improvements, which are correlated with long-lasting and close relationships (Brito & Nogueira, 2009; Elfenbein & Zenger, 2017; Goffin, Lemke, & Szejczewski, 2006; Krause, Handfield, & Tyler, 2007). The buyer-supplier relationship is a central research theme within our sample, encompassing 49 studies. This theme is closely associated with the sustainable supply chain research stream, which includes 10 studies within the broader category of relationships.

Research has explored various relationship types, with the buyer-supplier dynamic receiving substantial focus. Studies have examined how actor influence affects satisfaction and performance within these relationships, spanning dyadic constructs (Griffith et al., 2016; Narayanan, Narasimhan, & Schoenherr, 2014; Nyaga et al., 2013), triads (Choi & Wu, 2009b; Lawrence et al., 2019; Shipilov & Li, 2010; Yang et al., 2022), and networks (Eckerd & Hill, 2012; Moxnes, Bernard, & Saito, 2018; Slot, Wuyts, & Geyskens, 2020). The literature suggests that strategic supplier development can significantly enhance participants' economic and social satisfaction, highlighting the importance of various influencing factors in these relationships (Glavee-Geo, 2019). Similarly, good cooperation with goal-oriented interaction stems, on the one hand, from fundamental ethical values that are consolidated in formal codes of ethics (Saini, 2010) and, on the other hand, from open interpersonal exchange among contractual partners (Brito & Nogueira, 2009; Fan, Stevenson, & Li, 2020). Previous research has demonstrated that socialization in past and present relationship phases (van de Vijver, Vos, & Akkermans, 2011) and the influence of third parties mitigate costs of exchange and relationship distance (Adobor & McMullen, 2014) within a triadic structure. There is a demand for more detailed research on the specific factors that lead to the success or failure of buyer-supplier relationships, focusing on the micro-level interactions and processes that drive the dynamics of these relationships.

Prior research by Hill et al. (2009) and Kaynak & Sert (2012) indicates that ethical behavior, adherence to social norms, and effective communication are crucial in establishing and maintaining successful buyer-supplier relationships. Efficient communication leads to greater economic and social satisfaction for both parties (Kaynak & Sert, 2012). Studies have examined how

ethical conduct and adherence to standards affect a company's reputation both internally and externally, with ethical perceptions fostering open, respectful, and trustworthy collaboration (Bendixen & Abratt, 2007; Gullett et al., 2009). Trust, however, can be fragile, affected by external factors even without direct incidents, underscoring the need for companies to carefully manage their actions in service sourcing or delivery to positively influence perceptions (Hill et al., 2009). Additionally, the organizational and national cultures of the parties involved can impact the duration and success of the buyer-supplier relationship (Cannon et al., 2010). There is a call for more detailed research into the elements that drive the success or failure of these relationships, focusing on the micro-level interactions and processes that shape their dynamics.

Key theme 7

Sustainability scholars have delved into the significance of extra-financial aspects of services, encompassing sustainability, social responsibility, and environmental concerns, collectively referred to by the environment, social, and governance (ESG) criteria. This research highlights the growing imperative for buyers to enhance the sustainability performance of their service suppliers (Ahmed & Shafiq, 2022). As early as the sourcing stage, sustainable supply chain objectives can be achieved based on various sourcing criteria while lowering procurement costs (Knight et al., 2017). Scholars have proven that the relevance of sustainability is evident in the interactions in a service triad or network. Demanding a sustainable way of working can result in an asymmetric level of CSR expression that harms relationship performance (Liu et al., 2021). The individual corporate strategy significantly impacts sustainable and socially responsible customer-supplier relationship management. A central position in a service network exerts significant influence in shaping sustainability and tangible CSR approaches on other participants. The position of power can shape norms and expectations of sustainability (Hoejmose, Brammer, & Millington, 2013; Vurro, Russo, & Perrini, 2009). One approach to improve social and environmental performance and enhance the external perception of the service network is to invest in the buyer's competence through mentoring activities (Asslander, Roloff, & Nayir, 2013). While monitoring service activities alone may not have sustainable implications for the partners' operations, cooperative green supply chain initiatives lead to direct and favorable outcomes (Tachizawa, Giménez, & Sierra, 2015). The buyer-supplier relationship is crucial across all phases of the service network, with sustainability research evolving from merely describing issues to pinpointing and enacting solutions. While there has been progress in transitioning to identifying and implementing innovative sustainability

solutions, there is a gap in detailed studies that demonstrate how sustainability is integrated into procurement practices.

Key developments in extant research

Our literature review sheds light on the first aspect of our research question: "*What does extant literature regarding the sourcing and management of knowledge-intensive service triads find in terms of sourcing KIBS triads?*" The findings from the reviewed studies are varied and not always cohesive, influenced by different strategic approaches, firm types, country settings, and supply chain phases examined. As a result, the conclusions regarding the impact of specific strategic characteristics on service outcomes often differ. Notably, the research on sourcing, KIBS, and triads employed various theories and spanned multiple disciplines. Comparing research across the themes and phases highlights three major developments and corresponding gaps.

First development: most research on sourcing KIBS primarily focuses on isolated phases or aspects, such as the sourcing process or strategic consequences of sourcing decisions. Limited studies examine the interplay between supply chain phases and relationship levels. While existing literature offers insights into various factors, there is a gap in understanding how firms manage complex sourcing decisions over time in triads and networks and adapt their strategies to evolving conditions. This area presents a crucial opportunity for future research exploration.

The second development is that research on sourcing KIBS often focuses on isolated domains, like cost reduction, supplier selection, and collaboration, yielding insights into current practices and areas for improvement. Studies have investigated how factors like knowledge transfer, supplier trust, and contractual frameworks affect sourcing outcomes, also considering supplier capabilities, technology, and institutional influences. While these contributions enhance our understanding of sourcing practices, there remains a gap in addressing how sourcing adapts to contemporary business challenges (Cova, Ford, & Salle, 2009). The current business landscape, shaped by the pandemic, political tensions, and digitalization, necessitates a shift in focus. These elements have disrupted global supply chains and altered resource access, underscoring the need for research on sourcing strategies that foster resilience and adaptability in response to these dynamics (Knight et al., 2022). Addressing these challenges will help organizations develop effective sourcing strategies that are valuable and relevant to today's evolving business context.

The third development in sourcing knowledge-intensive business services research is the heightened focus on inter-organizational relationships across various industries, regardless of the relationship level (dyad,

triad, or network). However, the influence of individual actors, including role conflicts, psychological aspects, and behavior on sourcing outcomes, remains underexplored. This gap suggests a need to understand individual roles in KIBS sourcing decisions better. Future research directions include examining how conflicts in roles and responsibilities among individuals affect KIBS sourcing in both intra- and inter-organizational contexts, investigating the psychological factors of actors in KIBS sourcing and their impact on decision-making, and analyzing how individual behavior influences KIBS sourcing outcomes in inter-organizational settings.

Our analysis of 205 papers indicates a need to shift the research focus from inter-organizational relationships to the influences of individual actors. Incorporating cross-disciplinary perspectives from management, psychology, and sociology could be valuable in enriching this area of study.

An intersecting model of sourcing knowledge-intensive business services (research avenue 1)

Aligned with the general trend in research meeting our inclusion criteria, we have observed a persistent increase in interest in our three primary conceptual associations of KIBS, service sourcing, and service triads. Although current research has made significant advancements by focusing on specific concepts, phases of the sourcing process, or the outcomes of sourcing aspects in isolation, there is still a considerable gap in our understanding of sourcing KIBS combined. This bifurcated approach provides valuable insights into the factors that influence sourcing decisions, such as the financial and efficiency consequences of information asymmetry in the service sourcing process (Li & Debo, 2009; Obloj & Zemsky, 2015) or ethical factors and reputation (Bendixen & Abratt, 2007; Gullett et al., 2009; Wagner, Coley, & Lindemann, 2011). However, few studies have explored the combined effects over time or transferability on different relationship levels. This is surprising, given the need for and importance of an integrated model of sourcing knowledge-intensive business services. Due to the complexity of the KIBS sector and its environment (Ford, 2011; Miozzo et al., 2016), firms require an overarching strategy to respond effectively to its complexity.

While strategy scholars have investigated multiple aspects of sourcing strategies, a clear direction has yet to emerge. Previous research has examined these topics in isolation, making it difficult to understand their interrelations. By following the field of sourcing KIBS over time in complex triads and networks, current and emerging insights should be streamlined to question how firms manage complexities in tandem with other factors such as service performance, governance, and disruptions. Future research could provide valuable insights into overarching approaches by examining how governance specifications

of outsourcing projects could be influenced when focusing on KIBS. Outsourcing has become a popular strategy for firms seeking to reduce costs and improve service quality (Jayaraman et al., 2013; Roehrich & Lewis, 2014). However, it also involves significant risks, especially for the human capital intensity of KIBS (Strambach, 2001). We need to understand better how governance affects KIBS sourcing strategy and how it can be used to mitigate risks.

An increasingly critical topic for an overarching view on sourcing KIBS in triads and networks is how the quality of buyer–supplier relationships affects service performance. Previous studies have explored the impact of ethical factors and reputation on their quality. More research is needed to understand the degree of connectedness of buyer–seller relationships' insights and how they apply to the complexity of KIBS. Future research could focus on the role of trust and collaboration in sourcing KIBS. This could include investigating the role of trust in enabling firms to manage complex portfolios of sourcing decisions over time and the impact of collaborative relationships on sourcing strategies and firm performance. Information asymmetry is a critical issue in the buyer–supplier relationship. Research is needed to understand its financial and efficiency consequences and how contract design can be used as a countermeasure against opportunism. Previous studies have explored the impact of information asymmetry on sourcing strategy, but more research is needed to understand its implications throughout all phases within a holistic view. It would be valuable to examine the use of online knowledge communities to facilitate knowledge transfer along the supply chain in the context of sourcing KIBS. Online knowledge communities are virtual spaces where individuals with similar interests share knowledge and experiences to mitigate information asymmetries. However, more research is needed to understand their role in sourcing KIBS and how they can improve sourcing strategy and service performance.

Future research in this area could investigate how firms dynamically adjust their sourcing strategies throughout the lifecycle of buyer–supplier relationships and how they simultaneously navigate the complexities of sourcing knowledge-intensive services from multiple partners. Research could shed light on the challenges firms encounter in sourcing individual services and how to manage them effectively. There is a pressing need for further research to fill the gaps in our understanding of how firms manage their sourcing decisions for knowledge-intensive services by integrating multiple aspects and considering both the supply chain phase and the level of relationship in tandem.

The role of grand challenges and environmental uncertainty (research avenue 2)

Based on the insights gained from our analysis of existing practices, perspectives, and challenges, it is recommended

that future research addresses the challenges and barriers posed by new technologies in the context of digitalization. Furthermore, it is crucial to reexamine classic concepts of sourcing strategy, service performance, and buyer–supplier relationships considering emerging trends and technologies.

Future research could investigate the potential of AI and other digital technologies in improving sourcing strategy and service performance in KIBS. This could include examining how firms can use AI to automate and optimize their sourcing decisions and how AI can be used to improve the quality and efficiency of KIBS. However, it is also essential to consider the potential drawbacks of AI, such as the risk of bias and ethical issues. Therefore, future research should also explore ways to mitigate these risks and ensure the responsible use of AI in KIBS sourcing. Overall, research in this area could provide valuable insights into how firms can effectively leverage digital technologies to improve their sourcing strategy and service performance in the context of KIBS.

The existing body of research on disruptions predominantly focuses on network provider service management, with little attention paid to KIBS sourcing. Incorporating proactive parameters in the sourcing design can anticipate and mitigate disruptions, as suggested by Zhao, Zuo, & Blackhurst (2019). Nevertheless, KIBS suppliers have encountered unresolved disruptions due to environmental uncertainties, including resource and staff absences resulting from events like COVID-19 and political conflicts such as the Ukraine war in 2022. To address the role of grand challenges and environmental uncertainty, future studies should adopt a mixed-methods approach, blending quantitative research with field studies for comprehensive insights. The human capital of a KIBS plays a crucial role in the success of business relationships in triadic or network constructs, underscoring the need to simplify sourcing complexity and reduce classical network concepts to dyads and triads. Drawing on the dynamic capabilities approach, service firms must recognize their resource endowment and promptly respond to environmental uncertainties (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997) to advance supply chain research. The paradoxical perspective (e.g. paradox theory) of a fewer suppliers sourcing strategy to reduce network dependencies versus a more supplier sourcing strategy to minimize critical partner failures raises questions about the performance and relationship implications of opportunism, trust, and cooperation. Existing research has mainly focused on specific aspects of the sourcing strategy, such as its structure (e.g., Park, Ro, & Kim, 2017) or proper adjustment concerning cost and time perspectives (e.g., Li, Zhang).

The existing body of research on disruptions has primarily been concentrated on the management of network provider services, with a noticeable lack of focus on KIBS sourcing. The introduction of proactive

measures into the sourcing framework, as Zhao, Zuo, & Blackhurst (2019) have suggested, could foresee, and alleviate disruptions. However, KIBS suppliers still face persistent challenges due to environmental uncertainties, such as resource shortages and staff unavailability, which have been exacerbated by occurrences like the Covid-19 pandemic and political upheavals, notably the Ukraine conflict in 2022. Addressing the impact of significant challenges and environmental unpredictability necessitates future research to embrace a mixed-methods strategy, integrating quantitative analysis with field research to yield thorough insights. The significance of human capital in KIBS underscores its pivotal role in fostering successful business relationships within triadic or network configurations, highlighting the urgency to streamline sourcing complexity and simplify classical network concepts to dyads and triads. Leveraging the dynamic capabilities framework, service organizations must acknowledge their resource base and swiftly adapt to environmental uncertainties (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997), thereby enriching supply chain research. The paradoxical perspective (e.g. paradox theory) of fewer suppliers to lessen network dependencies against a strategy involving more suppliers to reduce the risk of critical partner failures invites further examination of the implications for performance, trust, and cooperative competition. Previous studies have predominantly concentrated on facets of the sourcing strategy, such as its structure (e.g., Park, Ro, & Kim, 2017) or its adjustment in terms of cost and timing (e.g., Li, Zhang, & Fine, 2012). Given the growing importance of sustainability initiatives (Knight et al., 2017), service buyers and suppliers should depart from the conventional concept of price and quality in their sourcing strategy. Instead, they should explore new forms of service provision beyond regular business to achieve disruptive shifts from traditional KPIs and attain business success. Procurement can play a crucial role in this endeavor.

On individuals, conflicts, and behavioral influences (research avenue 3)

Given the involvement of multiple individuals from diverse buying company departments and potential bidders in KIBS tendering procedures, it is imperative to investigate how individual behavior and conflicts impact the sourcing process. In this regard, future research could explore the following directions:

By adopting a network perspective as the unit of analysis, researchers can investigate individual influences and power within KIBS sourcing networks. This approach can enhance network theory by shedding light on the relative power dynamics of each actor involved in buyer–supplier, supplier–supplier, and intra-organizational relationships and offer new insights into KIBS sourcing

strategies for addressing grand challenges (Haakansson & Ford, 2002; Hearnshaw & Wilson, 2013). To analyze the impact of individual behaviors and conflicts on KIBS sourcing, applying structural equation modeling (SEM) to survey data can offer quantitative insights. This method enables the examination of complex relationships between observed and latent variables, revealing how individual differences and conflict perceptions influence sourcing strategies and outcomes in a statistically rigorous manner.

Future research could delve into the sourcing strategy of knowledge-intensive commodities and explore how this transition impacts the traditional buyer–supplier relationship in the service supply chain. It is essential to consider the cyber vulnerabilities and associated risks arising from the shift toward fully electronic handling of activities, particularly in political tensions (Peteraf, 1993). Will service sourcing and KIBS need to undergo a process of self-reinvention?

Expanding the industrial organization approach: scholars may investigate the welfare implications of KIBS sourcing by employing either microeconomic models or macroeconomic factors and demands (Chen & Guo, 2014; Grether, 1970; Rumelt, Schendel, & Teece, 1991). One pertinent inquiry is to what extent individual stakeholders' actions impact the practical procedure, and how can objectives beyond the present contract be incorporated into the sourcing process? Additionally, how does the triadic construct influence conventional sourcing preferences, and how does triad cooperation affect ongoing and future sourcing based on competition? Lastly, can the purchaser exert pressure by implementing a targeted triad sourcing strategy?

Revisiting expenses and sustainable approaches: subsequent studies may examine how the sourcing strategy, sourcing project, and contracting authorities are swayed by the complexity and externalities arising from societal demands for sustainable practices (Zanarone, Lo, & Madsen, 2016). Specifically, how do the sourcing process and contracting individuals respond to the societal demand for genuine, comprehensive, and unwavering sustainable practices? Additionally, can buyers' innovation ability benefit from individual knowledge transfer by strategically investing in driving sourcing activities?

Taking a comprehensive perspective on KIBS sourcing: scholars can enhance the resource-based view approach by creating value in resources through potential innovation on internal processes derived from sourcing activities. This entails reevaluating the sourcing concept by exploring opportunities for within-contract innovation grounded in the knowledge and distinctive characteristics of innovation sourcing (Peteraf, 1993; Connor & Prahalad, 1996; Williamson, 1991, 2000). How can service buyers assess a benefit that cannot yet be measured? How can conflicting sourcing processes be designed to anticipate innovations' most significant possible impact? Do novel procurement management and behavioral

management approaches or supplier strategies foster innovation? By pursuing these future research directions, we can better understand how individuals, conflicts, and behavioral influences influence KIBS sourcing and develop strategies to enhance the sourcing process.

Limitations and conclusion

This domain-based literature review (Palmatier, Houston, & Hulland, 2018; Paul & Criado, 2020) contributes to the growing academic and practical interest in KIBS, service sourcing, and service triads, despite facing challenges. Adhering to the SPAR-4-SLR protocol (Paul et al., 2021), a main difficulty was managing the breadth of literature and selecting the journal quality threshold, as our research on KIBS, service sourcing, and service triads touches a very wide range of literature. Keeping in mind Hiebl's (2023) discussion on "an A is an A" mentality, we decided to choose the FT50 list, as it touched a wide array of different industries, and opted for the inclusion of pivotal works in further selected journals. A notable limitation is the limited geographic diversity of the journals from the FT50 list, which might bias the results due to the lack of varied regional perspectives. Furthermore, aligning all papers with KIBS, service sourcing, and service triads was challenging, as many studies target broad groups and yield generalizable findings. To address this, the authors discussed the results regularly and conducted a randomized blind test on a sample, following Madill, Jordan, & Shirley (2000).

In summary, our goal is to deepen our understanding by synthesizing existing research, pinpointing gaps, and offering a roadmap for future inquiries. Research across these three disciplines and supply chain phases remains largely fragmented. Our theoretical contribution maps the crucial interconnections between phases and the unique attributes of KIBS, pinpointing research voids and charting directions for future investigations that bridge the existing divides. Our framework not only aims to connect research silos but also emphasizes emerging insights and limitations of previous studies, advocating for the inclusion of major contemporary challenges in future research (Cova, Ford, & Salle, 2009; Knight et al., 2022). We encourage scholars to examine the interrelations among these issues and their potential to enrich broader interdisciplinary studies.

AUTHOR CONTRIBUTION STATEMENT

Dominik Schlee led the conception, design, execution, and data analysis of the study, and was the principal author of the manuscript. Kai Förstl and Tobias Gutmann contributed to the research by providing critical revisions, conception, and intellectual input into the study design and manuscript preparation. All authors, Dominik Schlee, Kai Förstl, and Tobias Gutmann, have read and agreed to the published version of the manuscript.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICAL INFORMATION

Not applicable. This research did not involve human participants or animals and therefore did not require ethical approval.

DATA AVAILABILITY STATEMENT

Data supporting the findings of this study are available from the corresponding author, Dominik Schlee, upon request.

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