Research paper

Circularity in Motion: The Circular Knowledge Management Model

Devrim Yurdaanik-Eskiyerli[1*], Timo Dondrup, [1]

Handling Editor: Sultan Çetin

Received: 03.04.2024 / Accepted: 02.01.2025

Abstract

The role of knowledge management (KM) in international circular business models remains underexplored. Firm capabilities in creating and sharing knowledge are crucial for stimulating circularity. Our research explores KM in supporting the international expansion of Small and Medium-sized Enterprises (SMEs) through International Joint Ventures (IJVs), with a focus on circular business models. We introduce a Circular Knowledge Management Model (CKMM) designed for SMEs to manage cultural and institutional challenges in global markets. The model aims to systematically manage knowledge for competitive advantage in environmentally conscious sectors. Employing a mixed-method collaborative research design, we utilize a longitudinal case study to develop the CKMM. Results show that the CKMM enhances knowledge transfer and integration within IJVs, enables innovation and sustainable adaptation in foreign markets. It promotes a learning culture and stimulates diverse competencies for sustainability and innovation, offering a strategic approach to knowledge management in IJVs that emphasizes global competitiveness and environmental sustainability. This study bridges gaps between internationalization, KM, and the circular economy, providing insights for both theoretical and practical applications.

Keywords: Circular Knowledge Management · Circular Knowledge Management Model · Circular Business Models · International Circular Business Models · Knowledge Management Ecosystem

1. INTRODUCTION

In the global business environment, the shift toward sustainability is driven by international goals, regulatory pressures, and the importance of circular economy (CE) practices. Small and Medium Sized Enterprises (SMEs), increasingly pursuing early internationalization, are central to this shift. Effective Knowledge Management (KM) enhances resource efficiency and innovation, both crucial for developing circular business models. By managing knowledge flows, firms can better respond to environmental challenges and leverage sustainability as a competitive advantage internationally (Barkema et al., 1996; P. Kale et al., 2000).

The literature on KM and CE emphasizes knowledge as critical to achieving sustainability and circularity. Effective KM enables efficient cross-border knowledge transfer, enabling competitive advantage in a knowledge-driven economy(Berdrow & Lane, 2003; Ermine et al., 2006). Integrating KM with CE principles can significantly boost resource efficiency and innovation (Atiku, 2020). However, research often overlooks KM's role within circular business models, particularly for SMEs and IJVs (Kyriakopoulos & Solovev, 2022). The research gap especially relates to the lack of a dedicated framework that supports SMEs in effectively managing and utilizing knowledge within IJVs. Existing studies often emphasize general KM practices without accounting for the nuanced requirements of SMEs managing in cross-cultural and multi-regulatory environments.

This gap is particularly pronounced in the context of circular business models, where the efficient transfer and integration of both tacit and explicit knowledge are crucial for sustainability and competitive advantage. Our study addresses this gap by proposing the CKMM, tailored to enhance KM strategies in SMEs and advance sustainable practices in IJVs. Additionally, our empirical findings demonstrate the CKMM's effectiveness in facilitating knowledge transfer, fostering a learning culture, and building diverse competencies essential for

[1] Research Group Business Innovation, Fontys Venlo University of Applied Sciences, Tegelseweg 255, Venlo, The Netherlands
[*] Corresponding author: d.eskiyerli@fontys.nl

sustainable growth. These contributions provide both theoretical insights and practical applications for KM within circular business contexts.

Our paper explores these issues through a longitudinal case study of Loop Living Innovations, an SME that has aided the development of the CKMM in its IJVs. The findings highlight the importance of structured KM processes, cultural sensitivity, and digital tools in enhancing the development of circular supply chains and achieving sustainable business growth.

In this regard, our main Research Question (MRQ) is: "What strategies/models can SMEs employ to construct a learning network with IJVs that effectively manages and leverages knowledge for business growth, circular economy practices, and sustainability?"

Our paper is organized as follows: initially, we provide a literature review on internationalization strategies, KM, and circular business models in international settings, highlighting the importance of a KM tool for internationalizing businesses with circular business models. We then introduce our case study company and iterative research design, proposing a CKMM aimed at effective KM in IJVs with circular business models. Finally, we discuss the importance of our model and findings for both theory and practice.

1. LITERATURE REVIEW

1.1 Internationalization Strategies and Role of Knowledge

In today's global business environment, SMEs are increasingly pursuing early internationalization driven by reduced barriers, lower transportation and communication costs, shorter product life cycles, and a knowledge-intensive global mindset (Chetty & Campbell-Hunt, 2004; Dunning, 2015; Zahoor et al., 2020). To succeed internationally, SMEs must strategically manage firm-specific knowledge, linking internal capabilities with external opportunities (Cavusgil & Knight, 2015). Dunning's Eclectic Paradigm emphasizes ownership, location, and internalization as drivers of internationalization, with ownership advantages often tied to specialized knowledge assets such as R&D and technological capabilities, which create competitive barriers and facilitate innovation (Dunning, 1977, 1988, 2015). This aligns with the resource-based view, which sees proprietary knowledge as essential to sustainable competitive advantage (Grant & Phene, 2022; Wernerfelt, 2020).

Recent studies highlight the critical role of knowledge transfer in internationalization. Theories of International New Ventures (INVs) and born-globals highlight knowledge as a key source of competitive advantage for rapid international expansion (Oviatt & McDougall, 2018). Similarly, the theory of born-globals highlights knowledge as a key source of competitive advantage (Cavusgil & Knight, 2015). However, effective knowledge transfer in foreign markets involves challenges such as cultural adaptation and understanding local market dynamics. Models like Porter's Diamond and Dunning's Eclectic Paradigm underscore the importance of leveraging and transferring knowledge strategically for international success (Porter, 2008). Engaging in international business also requires businesses to adjust to host country's culture and institutions, guided by Hofstede's theories on cultural differences (Hofstede, 2011).

To bridge knowledge gaps and navigate local dynamics, SMEs often form IJVs, creating platforms for combining diverse knowledge and capabilities. Though IJVs involve risks like regulatory differences, strategic misalignment, and control over knowledge (Barkema et al., 1996; P. Kale et al., 2000; Suseno & Ratten, 2007), they provide essential frameworks for competitive advantage in international markets by facilitating the strategic use and transfer of firm-specific knowledge.

1.2 Knowledge Management in IJVs

In this context, effective KM becomes essential. KM involves the "setting up of a management system of cognitive flows, which allow all the components of an organization to use and enrich its corporate knowledge" (Ermine et al., 2006). In a knowledge-driven economy, KM reduces project costs, shortens timelines, and improves quality standards, thereby bolstering SMEs' competitive positioning in international markets (Arsawan et al., 2022; Azeem et al., 2021; Haghirian, 2010). For SMEs seeking to expand circular business models globally, KM supports sustainable practices and drives innovation.

KM in IJVs, must address the challenges of managing complex knowledge across organizational and national boundaries. These challenges include cultural differences, divergent norms and mental models, geographical distance, technological disparities, and language barriers (Berdrow & Lane, 2003; Javidan et al., 2005; Pérez-Nordtvedt et al., 2008). A significant hurdle lies in managing tacit knowledge, which is difficult to codify compared to explicit knowledge that can be easily articulated (Gupta & Govindarajan, 2000; Polanyi, 2009).

The SECI model (Nonaka & Takeuchi, 1996) offers a structured approach to these challenges by facilitating the transformation of tacit knowledge into explicit knowledge through interactions and organizational practices, essential for sustaining competitive advantage in IJVs. It also aids in integrating and adapting sustainable practices essential for circular business models by encouraging continuous learning and operational efficiency, enhancing competitive advantage in sustainability-focused markets and ensuring effective implementation of circular business models through improved collaboration and innovation across cultural and geographical boundaries.

By addressing these critical aspects, our research aims to explore and develop a practical KM model tailored to the needs of SMEs operating within circular business models and engaging in IJVs. This model will support international business expansion and foster the development of circular business practices, contributing to broader sustainability goals.

1.3 CIRCULAR ECONOMY AND KNOWLEDGE MANAGEMENT

Effective KM is crucial for SMEs transitioning to a CE, which challenges the linear economic model by focusing on resource efficiency, reuse, and recycling. CE promotes a regenerative system aimed at minimizing waste while maximizing resource value (Macarthur, 2017). Recent studies highlight KM's vital role in this transition, as SMEs contribute to CE by recirculating, recycling, and reusing materials. However, many SMEs lack the knowledge to fully exploit CE opportunities due to their focus on core business operations (Binek & Al-Muhannadi, 2020). Strategic KM capabilities—such as knowledge coordination, creation, and dissemination—are essential for eco-innovation, green industry development, and continuous business improvement (Atiku, 2020). Organizational learning (OL) processes also support SMEs in adopting CE practices, with knowledge creation, transfer, and retention processes helping to embed circular business models. Contextual factors like cultural, structural, and regulatory conditions act as both barriers and drivers in these OL processes (Batista et al., 2018; Scipioni, 2021). Collaborative KM approaches are critical for implementing CE strategies, particularly in supply chains that facilitate material recovery, thus advancing economic, social, and environmental sustainability (Atiku, 2018; Prieto-Sandoval et al., 2019).

Multi-level knowledge creation, transfer, and retention processes within an organization help introduce circular business models. Contextual elements, such as cultural, structural, regulatory, and process factors, play a significant role in OL processes, acting as both barriers and drivers. A multi-level culture construct involving external stakeholders, and organizational culture is key to activating OL processes for circular business model implementation. Collaboration and knowledge sharing are critical in executing CE strategies, particularly in closed- and open-loop supply chains to facilitate material recovery (Batista et al., 2018). This collaborative approach, within the framework of eco-innovation, highlights the role of KM in achieving economic, social, and environmental sustainability (Atiku, 2018). Prieto-Sandoval et al. (2019) highlight the significance of eco-innovations, dynamic capabilities such as knowledge management, and environmental management maturity levels in building competitive advantages for SMEs. Both internal factors, such as firm resources, competencies, and dynamic capabilities, and external factors, like public policy and market conditions, are crucial in fostering CE implementation.

On the other hand, CE often necessitates new business models that integrate KM to support sustainability and innovation. Recent empirical studies highlight the importance of KM for circular business models. Scipioni (2021) and Fields & Atiku (2019) illustrate how KM strategies can be tailored to enhance eco-efficiency and sustainable practices, particularly when international partnerships require effective knowledge sharing. The entry into foreign markets with circular models offers SMEs opportunities for differentiation and sustainability but also involves unique challenges that require adaptive KM strategies (Ahlgren Ode & Lagerstedt Wadin, 2019). Systemic collaboration across network actors is crucial for fostering partnerships and knowledge exchange in international CE contexts (Hazen et al., 2020; Witjes & Lozano, 2016).

When comparing KM practices across industries within the CE, KM supports CE by enhancing performance and competitiveness. In agribusiness, KM cycles driven by top management promote sustainability (Shih et al., 2018). In logistics, KM promotes CE principles through efficient resource use, waste reduction, and collaboration within IJVs, emphasizing the importance of knowledge sharing in CE strategies (Suha, 2024). In manufacturing, digital technologies such as IoT, big data, and blockchain aid in real-time data collection and supply chain transparency, which the CKMM can utilize to support continuous learning and effective KM within IJVs (Schöggl et al., 2023).

In summary, the findings from previous studies and the industry comparison emphasize that KM plays a critical role in the success of circular business models within IJVs by integrating advanced technologies and

sector-specific strategies that foster knowledge flows and innovation. Establishing systematic processes for knowledge capture, organization, sharing, and dissemination, supported by top management, is essential for competitive advantage. A strong learning culture and effective knowledge transfer within IJVs facilitate collaboration across boundaries, helping manage cross-cultural complexities. Implementing multi-level knowledge processes supports the sustainability of circular models by addressing cultural, structural, regulatory, and procedural factors essential for organizational learning. Incorporating eco-innovations and dynamic capabilities, such as environmental management maturity, supports continuous adaptation and innovation, enabling SMEs to succeed in a circular economy.

The CKMM aims to integrate circularity into KM practices by promoting dynamic adaptation, fostering collaborative innovation, and refining sustainable approaches for long-term CE goals. This model will enable SMEs to apply sustainable KM practices in IJVs, expand circular business practices, and utilize international partnerships for greater CE impact. This leads to our main research question (MRQ): "What strategies/models can SMEs employ to construct a learning network with IJVs that effectively manages and leverages knowledge for business growth, circular economy practices, and sustainability?"

Given this context, we propose to design a practical CKMM model for businesses operating with a circular business model and in IJV partnerships. This model will assist SMEs in adopting a sustainable KM process, which introduces and encourages circular business development internationally. An implicit impact of such an endeavour is to also expand the benefits of circularity internationally.

2. METHODOLOGY

Our research design for this study is constructed to explore effective KM strategies within SMEs and IJVs in the context of CE. The chosen research design and methodology aim to integrate both primary qualitative data and targeted secondary research to create a powerful and adaptable KM model, specifically the CKMM.

We employed a longitudinal single case study methodology complemented with secondary research and bibliometric analysis, spanning a period of one year. Longitudinal observation approach was chosen because it allows for an in-depth exploration of the phenomena over time, capturing changes and developments in KM practices. This approach facilitates a more detailed description of a phenomenon (Siggelkow, 2007) and a deeper exploration of the subject (Dyer & Wilkins, 1991), aligning with our study objectives. Additionally, a collaborative research design incorporating business perspectives while contributing to theory (Freytag & Young, 2017) was used within a mixed-methods framework.

The longitudinal nature of our case study is established through the continuous observation and analysis of the company, referred to as Loop Living Innovations, over a one-year period. This extended timeframe allowed us to capture significant changes and developments in the company's KM practices as they managed the complexities of implementing circular economy principles in international markets. The longitudinal approach provided a dynamic view of how KM strategies evolved in response to shifting market conditions, cultural adaptation, and knowledge transfer challenges within IJVs. This aligns with established methodologies that emphasize the importance of longitudinal case studies for studying evolving organizational practices over time (Dyer & Wilkins, 1991; Siggelkow, 2007). Therefore, the extended observation enabled us to better understand the iterative and adaptive nature of KM within a circular business model, offering insights that are not achievable through a cross-sectional study

Our case study is an "illustrative" single case study. An illustrative case study offers a thorough and detailed description of the case, capturing essential details that help illuminate the broader phenomenon being studied (Yin, 2013). It situates the case within its broader context, allowing researchers to explore how specific factors and conditions influence the observed outcomes (Stake, 1995). By providing concrete examples, illustrative case studies help explain theoretical concepts, making them more accessible and understandable to readers (Merriam, 2009). They focus on real-world applications and implications, demonstrating how theoretical principles are implemented in practice and highlighting best practices and lessons learned (Eisenhardt & Graebner, 2007).

In the context of this research, the case study company, hereafter referred to as Loop Living Innovations, serves as an illustrative case study due to its pioneering circular economy practices within the furniture industry. Founded in 2015 in the Netherlands, this SME transforms waste materials into coatings for furniture, embracing CE principles by promoting reuse and waste reduction. Within the furniture industry—characterized by high material use and sustainability challenges—the company faces unique KM and CE challenges, including managing diverse materials like wood, metals, textiles, and plastics, creating products for easy disassembly, and meeting varied sustainability standards. Overcoming consumer resistance to recycled products, coordinating

complex supply chains, balancing costs with sustainability, and managing regional environmental regulations further complicate this field. Additionally, innovation in recycling technologies is crucial for progress. Opportunities arise from innovative recycling processes, the development of eco-friendly products, and the potential for significant environmental impact reduction. The company's innovative "concept technology" for transforming waste into coatings and products supports their international expansion through IJVs, aiming to share this technology and enhance circularity globally. It also provides a real-world setting for studying KM in cross-cultural contexts, demonstrating how KM supports sustainability and competitiveness internationally.

Circular principles guide our approach to systematically identifying and cataloguing knowledge related to sustainable practices. We derived elements from the circularity guidelines outlined by Konietzko et al. (2020), adapting their principles to the context of KM and organizing them under the following categories:

Efficiency and Resource Optimization, focusing on maximizing resource use while minimizing waste, ensuring that knowledge is continuously reused and repurposed.

Adaptability and Responsiveness, involving the (eco)system's ability to quickly and effectively respond to changing environments and requirements, making the CKMM inherently adaptable to new insights and evolving practices,

Sustainability and Long-Term Viability, emphasizing that strategies should be sustainable and contribute to long-term success, ensuring SME strategies are effective both in the short term and for sustainable growth.

Collaborative Synergy, highlighting the enhanced outcomes achieved through collaboration, with the CKMM fostering innovation and efficiency by encouraging JV partners to share and co-develop knowledge.

Continuous Improvement, ensuring that the system evolves through constant learning and refinement, with a feedback loop that continually optimizes and enhances KM practices.

The mixed-methods approach included primary data collection through semi-structured interviews with SME representatives, followed by a targeted secondary research phase and aligned with industry comparison. To validate the findings, cross-verification with secondary data sources and existing theoretical frameworks was conducted. This step ensured the reliability and rigor of the interpretations. Where possible, feedback from the interviewees on the preliminary findings was sought to ensure accuracy and authenticity. The secondary research phase also utilized Boolean search operators to identify gaps and address specific KM practices based on empirical insights from the primary data. This iterative process ensured that the secondary research was directly informed by practical needs and challenges identified during the interviews.

To this end, we identified the MRQ and Sub Research Questions (SRQs):

- **MRQ**: What strategies/models can SMEs employ to construct a learning network with IJVs that effectively manages and leverages knowledge for business growth, circular economy practices, and sustainability?
- **SRQ1**: What are the key barriers and facilitators in establishing a learning network between SMEs and IJVs?
- **SRQ2**: How can SMEs adapt their KM practices to foster effective learning and collaboration within IJVs?
- **SRQ3**: How can cultural dynamics be effectively managed to enhance knowledge exchange within IJV learning networks?

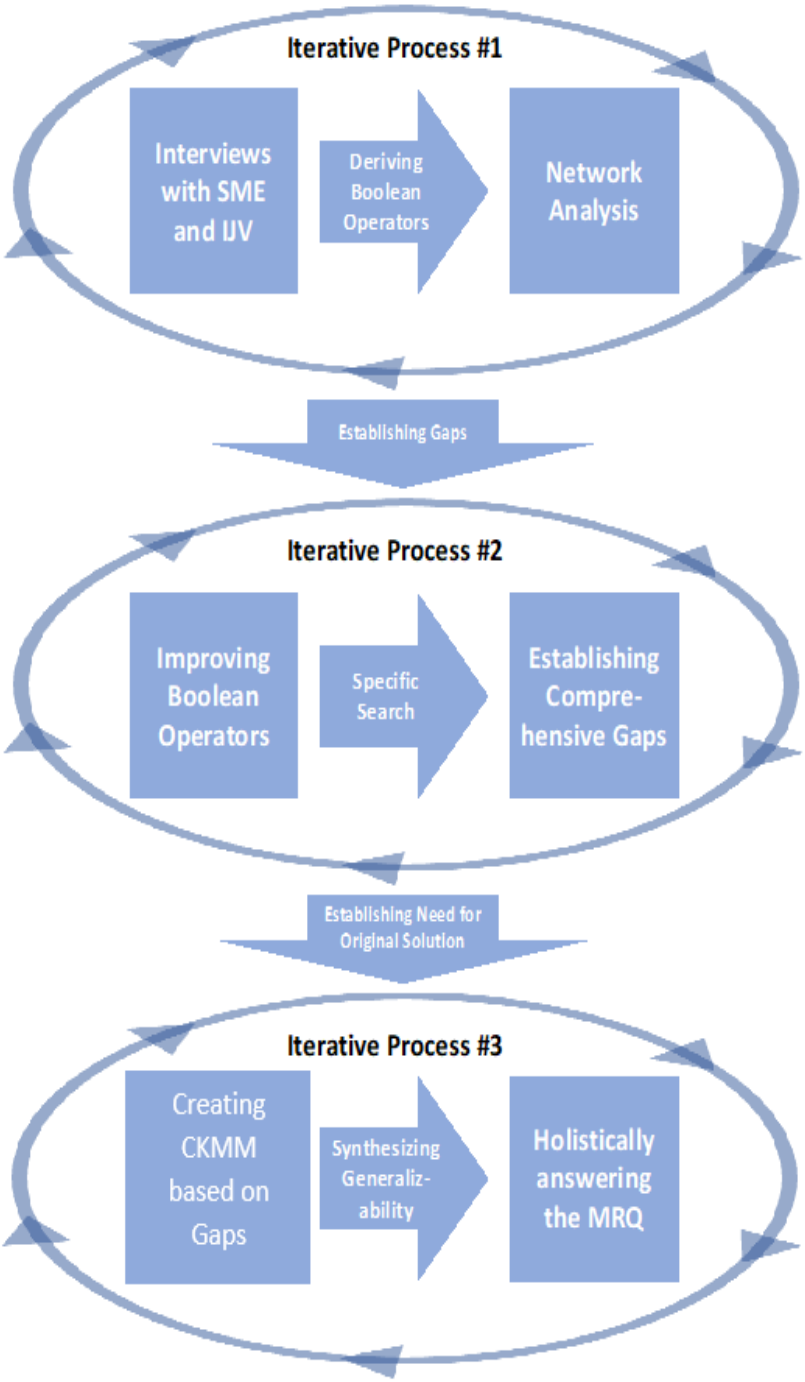

Figure 1. Visualization of Iterative Processes Used to Answer the MRQ

2.1 Iterative Process 1: Primary Data Collection

The study began with primary data collection from Loop Living Innovations and their IJV partner, referred to as Renew Design, focusing on semi-structured interviews with SME representatives to explore existing KM practices and challenges within circular business models. A purposive sampling method was used to select participants with relevant KM experience in circular business contexts (Palinkas et al., 2015). The semi-structured nature of these interviews allowed for flexible and in-depth exploration, revealing critical details of KM that would shape the subsequent phases of the research.

Inclusion criteria, based on Meline (2006) ensured participants held strategic roles in KM and were actively involved in circular economy practices. Exclusion criteria filtered out individuals without direct KM involvement or with less than one year of relevant experience. This focus allowed for rich, specialized insights rather than broad generalizations, with the smaller sample size justified by the study's iterative design and

logistical constraints, enhancing both depth and applicability. These companies were selected for their integration of KM within circular business models, providing a practical context for exploring related challenges and opportunities. Participants were directly involved in the management and execution of IJVs, offering relevant perspectives on KM in cross-cultural contexts. Geographical diversity among participants ensured a broad range of insights.

The sample size is justified by the depth of information obtained from semi-structured interviews, designed to obtain detailed insights rather than broad generalizations. The purposive sampling method ensured the selection of information-rich cases, aligning with the study's objectives. This approach allowed for a detailed exploration of KM practices in circular business models, which might not be achievable with a larger, less specialized sample. The iterative research design involved using initial interview insights to inform subsequent phases, including secondary research and model development, enhancing the findings' depth and applicability. Logistical constraints also favoured a smaller, focused sample, allowing for thorough investigation within the study's timeframe.

The process of descriptive analysis to summarize and interpret the qualitative data collected from semi-structured interviews involved several steps to ensure a comprehensive and accurate analysis. The first step involved transcribing the audio recordings of the interviews verbatim to ensure that all spoken words were accurately captured. The transcripts were then read multiple times to become familiar with the content and to identify preliminary themes and patterns related to KM practices and circular business models. Next, open coding was conducted by tagging segments of text that related to key concepts such as KM practices, challenges, and implementation strategies in circular business models. For example, responses discussing specific KM tools or strategies were tagged accordingly. After open coding, related codes were grouped into broader categories or themes. Key themes were then identified based on the frequency and prominence of specific codes. Within these key themes, sub-themes were identified to capture more specific aspects of the data. For each key theme and sub-theme, descriptive narratives were developed. These narratives summarized the main findings and included direct quotes from the interviewees to illustrate key points.

The interview transcripts are securely stored and can be accessed by authorized researchers involved in the study. To maintain confidentiality and comply with ethical standards, the company names are anonymized. These names do not represent the actual company names, and all identifying information has been altered to ensure anonymity. Access to the transcripts is restricted to ensure privacy and data security. Informed consent was obtained from all interviewees prior to conducting the interviews. The consent process involved explaining the purpose of the study, the nature of the questions, and how the data would be used. Interviewees were assured that their participation was voluntary and that they could withdraw at any time without any negative consequences. They were also informed about the measures taken to ensure the confidentiality of their responses. To ensure the integrity of the research, potential conflicts of interest were addressed at the outset. The researchers disclosed any affiliations or relationships with the companies involved in the study. Measures were taken to ensure that the study was conducted impartially, without any undue influence from the participating companies. The research design included independent oversight to monitor the study's progress and ensure that the findings were unbiased and objective. Additionally, the researchers adhered to ethical guidelines and standards throughout the study to maintain its credibility and reliability.

2.2 Iterative Process 2: Secondary Research Informed by Empirical Insights

Building upon the empirical insights from the primary data, the research advanced into a phase of strategic secondary research. Utilizing specific Boolean Operators, this phase focused on a targeted network analysis, designed to identify and address gaps in existing KM practices. Based on the empirical insights obtained from the interviews, specific themes and gaps in KM practices were identified, which then informed the subsequent bibliometric research phase. Bibliometric analysis using VOSviewer enhanced the empirical insights from the primary data collection. Based on themes arising from the interviews, specific keywords and Boolean operators were selected to guide the literature search. Relevant academic literature from 2018 to 2023 was collected using these keywords, focusing on studies related to KM, circular economy, and IJVs. The collected literature was analysed using VOSviewer, which created co-occurrence maps of terms and identified clusters of related topics. The bibliometric analysis revealed several clusters representing different thematic areas. The visualizations helped understand the structure of the research landscape and the relationships between various themes. The findings from the bibliometric analysis were integrated with the empirical insights from the interviews, providing a comprehensive understanding of KM practices in circular business models and highlighting areas for further research and development.

2.3 Iterative Process 3: Model Development

Informed by the insights from both primary and secondary research, the study proceeded to develop the CKMM. This model is conceptualized as a strategic framework for KM in SMEs and IJVs with circular business models. Influenced by nonlinear thinking and the complexities inherent in KM, the innovative CKMM was designed to be adaptable, effective, and specifically tailored to meet the unique requirements identified earlier in the study.

To validate the CKMM and explore its generalizability, additional empirical and secondary research was undertaken. A second semi-structured interview with Loop Living Innovations' executives has been carried out. Questions focused on practical applicability, alignment with business needs, and the potential impact of the CKMM on collaboration and cultural dynamics. This was coupled with a survey among industry professionals in Thailand, a target market of Loop Living Innovations'. The survey included a structured set of questions aimed at capturing expert insights on the applicability and effectiveness of the proposed CKMM. The respondents were selected from a knowledgeable group, specifically industry professionals familiar with IJVs and circular business practices. Questions focused on practical applicability, alignment with business needs, and the potential impact of the CKMM on collaboration and cultural dynamics. The choice of a purposive sampling was made for the survey, aiming to capture meaningful initial responses. This was done by approaching 75 potential respondents in person in the furniture industry. 26 of them agreed to respond to the survey.

They were then asked to familiarize themselves with a 4-page design of the model's breakdown before answering survey questions. This provided 26 critical evaluations of the model's applicability in various business contexts. The questions included:

Q1. How well does the CKMM align with current industry standards? Respondents were informed that this question assessed how well the CKMM aligns with widely accepted practices in knowledge management and circular economy efforts within their industry. They were asked to consider whether the principles and methods presented in the CKMM matched the typical processes, tools, and strategies used in their sector.

Q2. How well does the CKMM integrate with best practices in IJVs? It was clarified that this question referred to how effectively the CKMM could be integrated with established best practices in knowledge management, especially within the context of International Joint Ventures. Respondents were encouraged to evaluate whether the model addressed common challenges and needs encountered in IJVs, such as knowledge sharing across borders, cultural differences, and collaborative innovation.

Q3. How adaptable is the CKMM across varied industries and business contexts? For this question, respondents were asked to think about how easily the CKMM could be applied to different industries and business settings. They were asked to consider the model's flexibility and whether the principles could be tailored to fit diverse organizational contexts, varying scales of business, and different market dynamics.

Q4. What is the potential long-term impact of the CKMM on the industry? Respondents were guided to evaluate the CKMM's capacity to create sustainable and enduring changes in organizational knowledge management practices. They were asked to reflect on whether implementing the CKMM could lead to significant improvements in efficiency, sustainability, and circular economy goals over time.

3. RESULTS

3.1 Iterative Process 1

4.1.1 Empirical Insights from Interviews with SME and IJV Representatives

The analysis of semi-structured interviews with Loop Living Innovations and Renew Design provides clarity on practical KM in international partnerships. Five interviews with Loop Living Innovations executives, lasting 30-45 minutes each, covered topics such as knowledge awareness, the importance of effective KM, future KM vision, implementation ideas, and KM in IJVs. Four interviews with Renew Design executives, each lasting 45-60 minutes, focused on knowledge awareness in IJVs, the value of effective KM, anticipated barriers, future KM vision, implementation ideas, and data leaks.

Using ATLAS.ti for thematic coding, several key insights emerged. Loop Living Innovations operates with an ad-hoc KM system based on practical ideas rather than theoretical frameworks, lacking the rigor of research-based concepts (Nonaka & Takeuchi, 1996). Renew Design's reference to "silent knowledge" indicates a trust-based, informal KM approach, emphasizing cultural and tacit dimensions (Polanyi, 2009). These findings underscore the need for a systematic KM framework integrating both tacit and explicit knowledge to support organizational goals (Nonaka & Takeuchi, 1996). Balancing theoretical and practical aspects while maintaining trust inherent in informal systems is crucial for this transition.

Table 1: Interviewee Background and Durations

	Company	**Number of Times Interviewed**	**Role**	**Time Spent in this Role**	**Interview Duration**
Interviewee 1	Loop Living Innovations	2	Chief Commercial & Sustainability Officer	10 Years	30 min. 43 min.
Interviewee 2	Loop Living Innovations	1	Owner and Coatings Specialist	25 Years	33 min
Interviewee 3	Loop Living Innovations	2	Designer	7 years	41 min
Interviewee 4	Renew Design	2	Co-Owner	9 years	47 min 52 min
Interviewee 5	Renew Design	2	Co-Owner	9 Years	49 min 55 min

Cultural and communication differences were noted as significant challenges. Loop Living Innovations highlighted challenges in cross-cultural communication due to cultural nuances, while Renew Design noted differing business cultures and documentation formalities between their country and the Netherlands. These insights emphasize the necessity of cultural awareness in KM practices within multinational settings (Hofstede, 1980). The challenge lies in creating KM processes flexible enough to accommodate various cultural expectations while maintaining consistency for effective knowledge sharing.

Digital tools for knowledge sharing were also discussed. Loop Living Innovations uses digital cloud storage platforms for knowledge sharing but expresses concerns about privacy. Renew Design mentions basic digital tools for KM. This highlights the importance of digital transformation in KM, necessitating the integration of more sophisticated digital tools and platforms to enhance security and collaboration.

Training and development were emphasized, particularly for international staff. Training is crucial, especially for international staff. Loop Living Innovations combines practical, hands-on training with supplementary materials such as instruction manuals and videos. Renew Design indicates a need for training in new technology and understanding 'silent knowledge'. Continuous training is vital, integrating tacit

knowledge from in-person training with explicit knowledge from materials to create a comprehensive learning environment (Argyris & Schön, 1997).

The interviews reveal practical KM applications in SMEs and IJVs, forming the basis for further research and identifying specific areas for exploration using Boolean operators. They address the MRQ and SRQs by identifying key facilitators and barriers in KM, highlighting the need for structured, culturally sensitive, and technologically advanced KM strategies in international business partnerships. Loop Living Innovations' ad-hoc approach underscores the barrier of lacking structured KM, while Renew Design's trust-based 'silent knowledge' serves as a facilitator. These insights underline the need for systematic, culturally sensitive KM strategies, informing the first sub-question about barriers and facilitators in establishing a learning network between SMEs and IJVs.

4.2 Iterative Process 2

4.2.1 Network Analysis based on Primary Insights

Utilizing primary data from interviews with Loop Living Innovations' and Renew Design's representatives, this section explores network analysis via VOSviewer, analysing literature from 2018 to 2023 to visualize the KM landscape in IJVs, revealing trends, relationships, and gaps. Informed by the primary research, Boolean operators used were: (1) "Structured Knowledge Management" AND "Tacit Knowledge", (2) ("Cultural Differences OR Communication Styles") AND "Knowledge Sharing", (3) ("Digital Tools OR Digital Transformation") AND "Knowledge Management", (4) "Training and Development" AND ("Continuous Learning OR Silent Knowledge"), plus (5) "SME" OR ("International Joint Venture OR Business Partnership OR Strategic Alliances"). The VOSviewer system analysed 13,780 documents, revealing 190,026 terms, adhering to the rules of Boolean Operators as laid out by the MIT library (MIT Library, 2021). Using full counting, 285 terms surpassed the >250 threshold, with 171 terms visualized. These terms created four clusters with 14,385 links and a link strength of 1,736,902, suggesting a highly cohesive body of literature focusing on certain concepts (Figure 2 and 3).

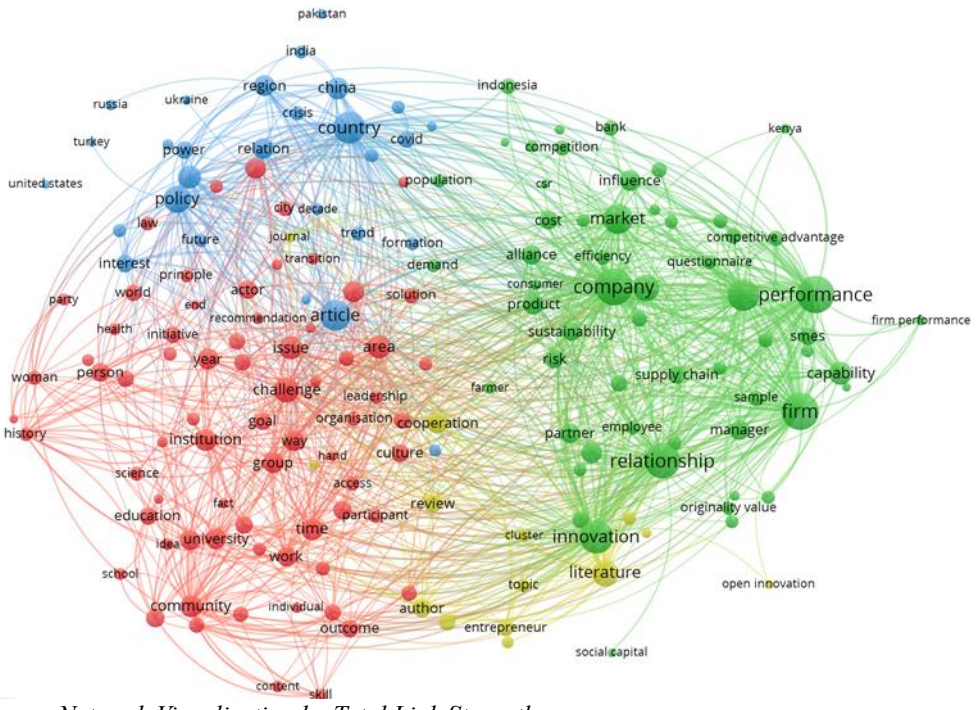

Figure 2. VOSviewer Network Visualisation by Total Link Strength

In Figure 2, the blue cluster focuses on geopolitical and regional aspects; the red cluster on socio-cultural and policy aspects; the yellow cluster on niche or emerging themes; and the green cluster on performance and strategic business concepts. Figure 3 highlights term occurrences, focusing on organizational outcomes and innovations within SMEs, emphasizing "relationship," "supply chain," and "sustainability."

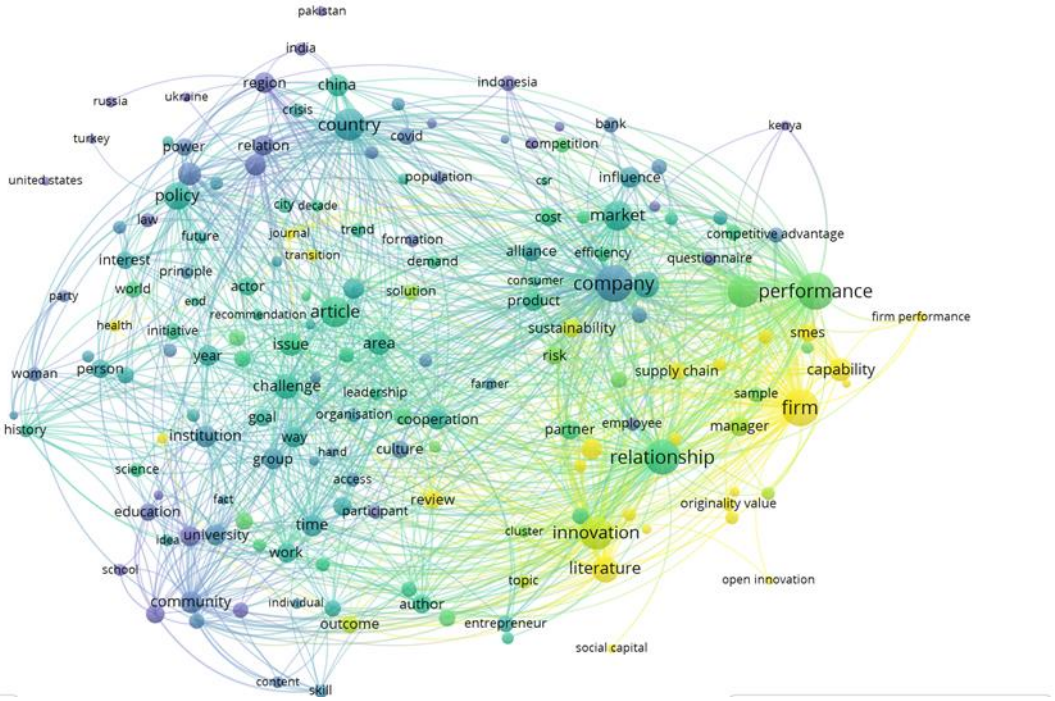

Figure 3. VOSviewer Overlay Visualisation by Occurrences

Network visualization underscores key themes in KM discourse, while the overlay highlights dominant topics, aiding in understanding academic focus and emerging sub-themes. Comparing the figures shows a persistent academic focus on "performance," "company," "relationship," and "innovation," with variations in emphasis indicating shifts in research attention or emerging sub-themes. These recent field dynamics offer insight into the central topics relevant in the recent years:

(1) *Barriers and facilitators in KM within IJVs*. While clusters indicated issues of culture and communication, there was a gap in specific facilitative strategies.

(2) *Adapting KM practices*. The visualization suggested digital tool usage but lacked insights into integration and adaptation practices within IJV environments.

(3) *Managing cultural dynamics*. The clusters showed awareness of cultural differences but did not provide strategies for overcoming these challenges to enhance knowledge exchange.

Based on these insights, the topics for further analysis are structured knowledge management strategies, integration of digital tools, and management of cultural differences.

4.2.2 Knowledge Conversion Processes in SMEs and IJVs

This section focuses on knowledge conversion processes in SMEs and IJVs based on findings from the previous section, aiming to enhance strategies for effective knowledge management. Boolean search operators used were: "Knowledge Management" AND "SME"; "Intercultural Communication" AND "IJVs"; "Digitalization" AND "SMEs" AND "Knowledge Management"; "Tacit Knowledge" AND "IJVs"; and "Knowledge Management" AND "Circular Economy."

After reviewing the main relevant literature (Acerbi et al., 2020; Atiku, 2020; Bagnoli & Vedovato, 2014; Bouwman et al., 2019; Castagna et al., 2020; Cerchione et al., 2016; Cerchione & Esposito, 2017; Dethine et al., 2020; Hund et al., 2020; Isensee et al., 2020; Kapoor & Aggarwal, 2021; Makowski-Komura et al., 2020; Martin & Emptage, 2019; Park et al., 2015, 2022; Park & Vertinsky, 2016; Rotsios et al., 2021; Sijabat, 2022; Wang & Wang, 2020; Zhao & Mills, 2019) based on the findings of the above Boolean operators in Google Scholar, we arrived at following conclusions and gaps in the literature regarding specialized models or strategies for SMEs' KM within IJVs also in connection to CE:

1. **Identification and Mapping of Knowledge**: SMEs need systematic processes to catalogue knowledge.
2. **Integration and Adaptation of Knowledge**: Blending diverse knowledge pools from JV partners and adapting them to fit various international standards and cultural contexts is challenging, affecting contextual relevance and applicability.
3. **Knowledge Sharing and Collaboration**: There is a need to address technological and cultural barriers.
4. **Application of Knowledge for Circularity**: Translating knowledge into actionable strategies and solutions supporting circular economy principles is challenging, limiting the practical application of KM in sustainable business practices.
5. **Continuous Training and Development**: Establishing relevant metrics and fostering a culture of continuous improvement are essential for evaluating and refining KM practices, affecting the ability to adapt and evolve KM strategies in response to changes.

Developing a model that addresses these gaps is important. This model should integrate cultural inclusivity, digital integration, and continuous training, tailored to the unique needs of SMEs in learning networks with IJVs.

4.3 Iterative Process 3

4.3.1 The Circular Knowledge Management Model

The CKMM aligns KM with circularity principles, maximizing knowledge utilization in SMEs within IJVs and ensuring continuous re-evaluation and collaboration. Developed through applied research and business insights, the CKMM addresses gaps identified in previous sections by merging academic and business knowledge. The CKMM supports circular business models by ensuring that knowledge related to circular practices—such as recycling techniques, resource optimization strategies, and sustainable product design—is systematically captured, shared, and applied across organizational boundaries. This facilitates the adoption and refinement of circular strategies by SMEs and their joint venture partners, allowing them to integrate best practices and innovations in CE. Moreover, the CKMM's structure is designed to support adaptability by enabling firms to quickly respond to changing market demands and environmental conditions. This capability is crucial in a circular economy, where businesses need to adjust practices to incorporate new sustainable technologies, policies, or shifts in consumer preferences. The CKMM also emphasizes collaborative synergy by encouraging joint venture partners to co-create solutions that enhance circularity. By facilitating the integration of diverse experiences and knowledge, the model ensures the development of more robust and innovative circular solutions. Finally, the CKMM incorporates a feedback loop for the ongoing evaluation of knowledge management practices. This continuous improvement process ensures that circular strategies evolve over time, allowing for the constant optimization of resources and sustainability practices in line with circular economy principles.

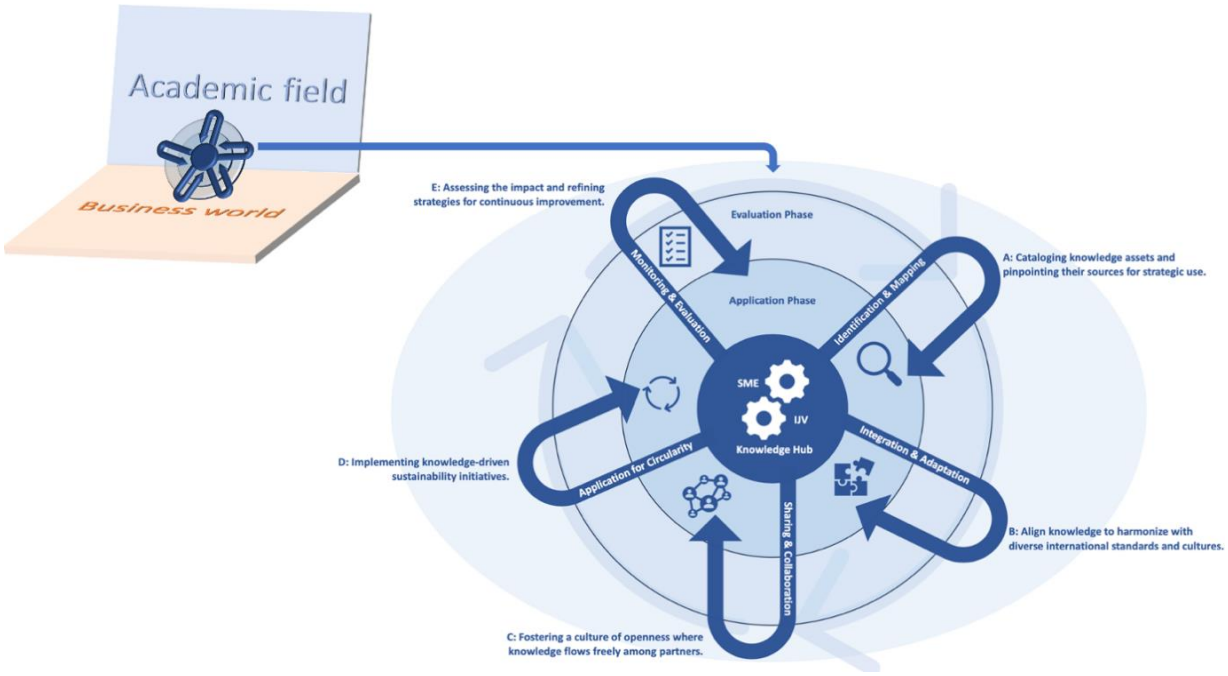

Figure 4: Circular Knowledge Management Model (CKMM)

4.3.2 Breakdown of Each Spoke

A. Knowledge Identification and Mapping involves systematically identifying and cataloguing different types of knowledge within the SME and the IJV. It includes mapping sources, locations, and owners of knowledge to ensure no critical information is overlooked. This foundation facilitates the reuse and adaptation of knowledge related to circular economy practices across international borders.
B. Knowledge Integration and Adaptation blends diverse knowledge pools from IJV partners and adapts them to fit various international standards and cultural contexts. This process ensures knowledge is contextually relevant and applicable, creating a unified approach to circularity that integrates diverse international perspectives.
C. Knowledge Sharing and Collaborations establishes channels and mechanisms for effective knowledge sharing among IJV partners. This fosters a culture of openness and collaborative learning, encouraging the sharing of best practices and innovative solutions in circularity, driving joint initiatives and projects.
D. Knowledge Application for Circularity involves applying integrated and shared knowledge to practical initiatives supporting circular economy principles. This moves KM from theoretical exercises to practical, actionable strategies, directly tying KM efforts to sustainable business practices within the JV.
E. Knowledge Monitoring and Evaluation continuously assesses and refines KM practices to ensure they remain effective and relevant. This feedback loop for constant improvement adapts to new information and changing circumstances, emphasizing ongoing learning and adaptation to support circularity goals.

The CKMM components collectively create a cohesive, adaptable, and sustainable approach to managing knowledge in SMEs involved in IJVs. Knowledge identification (A) feeds into integration and adaptation (B), creating a detailed inventory for harmonizing knowledge across different contexts. Integration (B) then fuels sharing and collaboration (C), making knowledge relevant and valuable in collaborative settings. Collaboration (C) leads to practical applications (D), developing innovative and practical uses of knowledge to enhance circularity practices. Application (D) informs monitoring and evaluation (E), providing tangible outcomes and insights for assessing effectiveness and identifying improvement areas. Finally, evaluation (E) completes the circular loop by informing new knowledge identification (A), ensuring the KM system remains dynamic, self-sustaining, and continuously evolving.

The CKMM's contribution to circularity lies in its ability to create a KM system that is efficient, adaptable, sustainable, collaborative, and continuously improving. Efficiency and Resource Optimization involve utilizing

resources to their maximum potential while minimizing waste. The CKMM ensures that knowledge, as a critical resource, is continuously reused and repurposed. Adaptability and Responsiveness require systems to respond quickly and effectively to changing environments and requirements. The interlinked components of the CKMM ensure that the knowledge management system is inherently adaptable, responding to new insights, changes in the international business landscape, and evolving circularity practices. Sustainability and Long-Term Viability mean that actions and strategies should be sustainable and contribute to long-term success. By embedding circular economy principles into KM, the CKMM ensures that SME strategies are effective in the short term and contribute to sustainable long-term growth. Collaborative Synergy emphasizes that collaboration yields results greater than individual efforts. The CKMM fosters collaboration as a key driver of innovation and efficiency, encouraging JV partners to share and co-develop knowledge, achieving more significant outcomes together. Continuous Improvement involves systems evolving through constant learning and refinement. The cyclical process of the CKMM, particularly the feedback loop from Knowledge Monitoring and Evaluation to Knowledge Identification and Mapping, ensures continuous learning and improvement, always seeking to optimize and enhance KM practices.

The CKMM reimagines the utilization and management of knowledge within organizations, shifting from traditional linear models to a sustainable, efficient cycle of continuous knowledge use and regeneration. Circularity in the CKMM is a foundational principle, transforming knowledge into a renewable resource that is continually enhanced and recycled. This approach maximizes the value derived from knowledge assets and promotes sustainability and adaptability in rapidly changing business environments. By moving away from linear thinking, the CKMM recognizes and utilizes complex, interconnected knowledge dynamics.

Moreover, the circularity principle in the CKMM fosters a culture of continuous learning and improvement, encouraging organizations to view knowledge as a dynamic, evolving resource that can be perpetually enriched and repurposed. This perspective is crucial for SMEs in IJVs, where the ability to rapidly adapt and integrate diverse knowledge pools is key to success. The CKMM redefines KM by embedding circularity principles, transforming knowledge into a renewable resource within SMEs and IJVs, enhancing knowledge utilization, and fostering a culture of sustainability, adaptability, and continuous improvement. This model marks a shift from traditional linear KM approaches to a dynamic, circular model, aligning with the evolving needs of modern businesses.

4.4 Validating and Generalizing the CKMM

To validate the CKMM and explore its generalizability, additional empirical and secondary research was undertaken. Initially a survey has been carried out with questions aiming at capturing expert insights on the applicability and effectiveness of the proposed CKMM

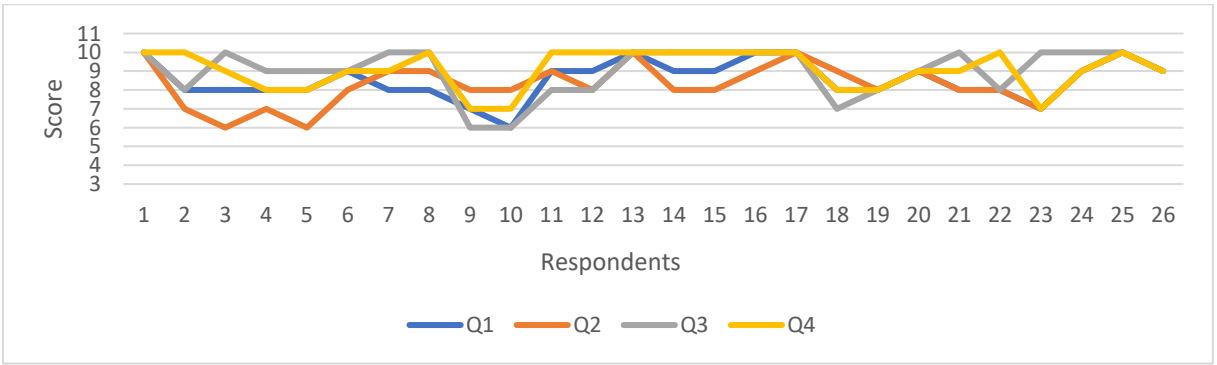

Figure 5. CKMM Survey Results

The survey results indicated a positive reception of the CKMM among industry professionals. With an average score of 8.5 out of 10 for alignment with current industry standards, the model was seen as relevant to existing KM practices. Its fit with best practices in IJVs scored 8.3, suggesting the CKMM's ability to integrate and enhance established procedures. The model's adaptability across varied industries received a score of 9.0, emphasizing its flexibility and potential for global application. Finally, the CKMM's potential for long-term industry impact was rated at 9.1, reflecting confidence in its sustainable benefits and role in driving future advancements.

Additionally, a semi-structured interview with Loop Living Innovations' executives further validated the CKMM in a practical setting. The interview covered topics such as the CKMM overview, practical application, alignment with business needs, improvement suggestions, collaboration impact, cultural aspects, performance metrics evaluation, benchmarking, and cost-benefit analysis. The interview provided practical perspectives, emphasizing the CKMM's structured approach to knowledge management, the need to incorporate commercial and legal considerations, cultural sensitivity, feedback mechanisms for continuous improvement, and effectiveness metrics. The executives also highlighted the model's potential economic benefits, such as cost savings and increased revenue, and its environmental impact, like reducing the time IJV partners take to start sourcing their own materials.

Combining the survey and interview findings, validates and generalizes the CKMM as follows. The survey indicated that the CKMM aligns with current industry standards and IJV best practices, supported by Loop Living Innovations' emphasis on structured knowledge management and the incorporation of commercial and legal aspects. The model's adaptability across various industries was complemented by insights on cultural sensitivity and dynamics, suggesting the CKMM's applicability in diverse international settings. The design of the CKMM allows for continuous improvement, with feedback mechanisms ensuring its long-term impact and sustainability. The importance of metrics to assess the CKMM's effectiveness was highlighted, with specific metrics such as economic and environmental impact analysis providing a concrete framework for measurement. The synthesis of survey data, empirical insights, and industry comparisons offers a comprehensive view of the CKMM's practicality in real-world scenarios, reinforcing its relevance and potential benefits across different international business environments.

The findings from our analysis clearly address the MRQ and SRQs by outlining effective strategies and models for SMEs to construct a learning network with IJVs that leverage knowledge for business growth, circular economy practices, and sustainability. The empirical insights highlight the barriers and facilitators in establishing such networks, emphasizing the need for structured, culturally sensitive KM strategies and the integration of digital tools. The network analysis and bibliometric review further underscore these points by identifying gaps in existing literature related to facilitative strategies, cultural management, and digital integration. The development and validation of the CKMM provide a comprehensive framework that addresses these gaps, offering practical and adaptable solutions for knowledge identification, integration, sharing, application, and continuous improvement. This model, supported by empirical validation and comparative analysis across different industries, confirms its applicability and effectiveness in enhancing KM practices within SMEs and IJVs, thus answering the MRQ and each SRQ with concrete, actionable insights.

4. CONCLUSIONS AND DISCUSSION

Our research has developed and validated the CKMM as an innovative framework for SMEs operating in IJVs within circular business models. By addressing the gaps highlighted in the literature—particularly the underexplored integration of KM in circular business models for internationalization—the CKMM provides a systematic approach for the effective identification, sharing, and application of knowledge. The study's empirical findings emphasize the CKMM's capacity to facilitate sustainable and innovative practices, enhancing SMEs' global competitiveness while following the principles of the circular economy. This validation not only supports the theoretical underpinnings of KM's role in successful internationalization and circular business model implementation but also offers practical implications for SMEs looking to explore the complexities of international markets sustainably.

Our research bridges a gap in the literature where the intersection of KM, CE, and internationalization has been underexplored. By incorporating cultural sensitivity, digital tools, and continuous improvement mechanisms into the CKMM, our research extends existing KM theories. It builds on frameworks such as Nonaka & Takeuchi's SECI model (1996) by applying them to the context of circular business models and international SMEs, thereby offering a more detailed understanding of KM in these settings. The SECI Model is central to the CKMM, revealing how knowledge transitions between tacit and explicit, is crucial for SMEs in IJVs. The model's phases of socialization and internalization are applied within the CKMM to support the sharing of tacit knowledge through interactions and experiential learning. This extends the SECI model's applicability by integrating it with circular business practices. Furthermore, the empirical findings from the longitudinal case study of Loop Living Innovations validate the theoretical underpinnings of the CKMM. Our study provides new empirical evidence supporting the model's effectiveness in facilitating knowledge transfer, promoting a learning culture, and enhancing innovation and sustainability within IJVs (Ermine et al., 2006; S. Kale & Karaman, 2011). Our research also addresses the call by Barkema et al. (1996), P. Kale et al. (2000),

and Suseno & Ratten (2007) for strategic KM processes that help overcome cultural and institutional barriers in international markets.

By integrating KM with CE principles, the CKMM enhances resource efficiency and innovation, contributing to the body of work that emphasizes the importance of KM in achieving sustainability. Additionally, the continuous improvement mechanisms embedded in the CKMM are supported by the theories of Argyris & Schön (1997) on organizational learning. Our model ensures that KM practices are regularly assessed and refined, promoting a culture of continuous learning and adaptation. This aligns with the need for dynamic capabilities in international business, as discussed by Cavusgil & Knight (2015) and Zahoor et al. (2020). This model thus extends the theoretical framework by providing a tangible approach to managing knowledge in SMEs, particularly in the context of international joint ventures and circular business models.

The CKMM also offers a comprehensive, practical and managerial framework that SMEs can implement to manage knowledge effectively in IJVs. This model helps SMEs overcome specific challenges related to cultural and institutional adaptation, efficient resource management, and maintaining sustainability standards. The research provides clear, actionable recommendations for SMEs. These include adopting the CKMM for systematic knowledge management, investing in cultural sensitivity training, integrating advanced digital tools, and establishing continuous improvement processes. By following the CKMM, SMEs can enhance their global competitiveness and sustainability. The model's emphasis on continuous learning and improvement ensures that SMEs can adapt to changing market conditions and evolving sustainability standards.

Our research effectively answers our research questions by demonstrating how SMEs can employ the CKMM to construct a learning network with IJVs that manages and leverages knowledge for business growth, circular economy practices, and sustainability. The study identifies the key barriers (such as lack of structured KM and cultural differences) and facilitators (such as trust-based knowledge and digital tools) in establishing learning networks. It shows how SMEs can adapt their KM practices through the CKMM's structured processes, digital integration, and continuous training. Furthermore, the CKMM's development and empirical validation through industry feedback highlight its practical applicability and relevance, offering a strategic tool for SMEs to compete successfully in the complexities of internationalization and sustainability.

5. LIMITATIONS AND DIRECTIONS FOR FURTHER RESEARCH

Despite the comprehensive findings, this research has several limitations. Firstly, the study is based on a single illustrative case study, which may limit the generalizability of the findings to other contexts and industries. Additionally, the reliance on qualitative data from semi-structured interviews may introduce subjectivity and bias, despite efforts to ensure rigor and validity. The research also focuses primarily on SMEs and IJVs within the circular economy framework, which may not capture the full diversity of KM practices and challenges in other types of business models or organizational structures. Future research could address these limitations by expanding the scope of the study to include multiple case studies across different industries and geographical regions. This would enhance the generalizability of the CKMM and provide a broader understanding of its applicability. Quantitative methods, such as surveys with larger sample sizes, could complement the qualitative findings and provide more robust data for analysis. Additionally, further research could explore the long-term impacts of the CKMM on business performance and sustainability outcomes, as well as its adaptability to other emerging business models beyond the circular economy.

AUTHOR CONTRIBUTIONS

Devrim Yurdaanik-Eskiyerli: Overall planning, supervision, interpreting the results, writing, editing, proof reading.
Timo Dondrup: Conceptualisation, methodology, analysing the data, designing tables and figures, writing.

DECLARATIONS

Competing interests: The authors declare no competing interests.

APPENDIX

For full-size figures click here or copy the following URL:
http://circulareconomyjournal.org/wp-content/uploads/2025/02/Appendix_Eskiyerli_and_Dondrup_Circularity-in-Motion-The-Circular-Knowledge-Management-Model.pdf

REFERENCES

Acerbi, F., Sassanelli, C., Terzi, S., & Taisch, M. (2020). Towards a Data-Based Circular Economy: Exploring Opportunities from Digital Knowledge Management. *Lecture Notes in Networks and Systems*, *122*. https://doi.org/10.1007/978-3-030-41429-0_33

Ahlgren Ode, K., & Lagerstedt Wadin, J. (2019). Business model translation—The case of spreading a business model for solar energy. *Renewable Energy*, *133*. https://doi.org/10.1016/j.renene.2018.09.036

Argyris, Ch., & Schön, D. A. (1997). Organizational Learning: A Theory of Action Perspective. *Reis*, *77/78*. https://doi.org/10.2307/40183951

Arsawan, I. W. E., Koval, V., Rajiani, I., Rustiarini, N. W., Supartha, W. G., & Suryantini, N. P. S. (2022). Leveraging knowledge sharing and innovation culture into SMEs sustainable competitive advantage. *International Journal of Productivity and Performance Management*, *71*(2). https://doi.org/10.1108/IJPPM-04-2020-0192

Atiku, S. O. (2018). *Institutionalizing Social Responsibility Through Workplace Green Behavior*. https://doi.org/10.4018/978-1-5225-6286-3.ch010

Atiku, S. O. (2020). *Knowledge Management for the Circular Economy*. https://doi.org/10.4018/978-1-7998-5116-5.ch027

Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. *Technology in Society*, *66*. https://doi.org/10.1016/j.techsoc.2021.101635

Bagnoli, C., & Vedovato, M. (2014). The impact of knowledge management and strategy configuration coherence on SME performance. *Journal of Management and Governance*, *18*(2). https://doi.org/10.1007/s10997-012-9211-z

Barkema, H. G., Bell, J. H. J., & Pennings, J. M. (1996). Foreign entry, cultural barriers, and learning. *Strategic Management Journal*, *17*(2). https://doi.org/10.1002/(sici)1097-0266(199602)17:2<151::aid-smj799>3.3.co;2-q

Batista, L., Bourlakis, M., Liu, Y., Smart, P., & Sohal, A. (2018). Supply chain operations for a circular economy. In *Production Planning and Control* (Vol. 29, Issue 6). https://doi.org/10.1080/09537287.2018.1449267

Berdrow, I., & Lane, H. W. (2003). International joint ventures: Creating value through successful knowledge management. *Journal of World Business*, *38*(1). https://doi.org/10.1016/S1090-9516(02)00106-2

Binek, D., & Al-Muhannadi, K. (2020). Small and Medium-Sized Enterprises Within the Circular Economy: Challenges and Opportunities. *Hungarian Agricultural Engineering*, *37*. https://doi.org/10.17676/hae.2020.37.5

Bouwman, H., Nikou, S., & de Reuver, M. (2019). Digitalization, business models, and SMEs: How do business model innovation practices improve performance of digitalizing SMEs? *Telecommunications Policy*, *43*(9). https://doi.org/10.1016/j.telpol.2019.101828

Castagna, F., Centobelli, P., Cerchione, R., Esposito, E., Oropallo, E., & Passaro, R. (2020). Customer knowledge management in SMEs facing digital transformation. *Sustainability (Switzerland)*, *12*(9). https://doi.org/10.3390/su12093899

Cavusgil, S. T., & Knight, G. (2015). The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. In *Journal of International Business Studies* (Vol. 46, Issue 1). https://doi.org/10.1057/jibs.2014.62

Cerchione, R., & Esposito, E. (2017). Using knowledge management systems: A taxonomy of SME strategies. *International Journal of Information Management*, *37*(1). https://doi.org/10.1016/j.ijinfomgt.2016.10.007

Cerchione, R., Esposito, E., & Spadaro, M. R. (2016). A literature review on knowledge management in SMEs. In *Knowledge Management Research and Practice* (Vol. 14, Issue 2). https://doi.org/10.1057/kmrp.2015.12

Chetty, S., & Campbell-Hunt, C. (2004). A Strategic Approach to Internationalization: A Traditional Versus a "Born-Global" Approach. *Journal of International Marketing*, *12*(1). https://doi.org/10.1509/jimk.12.1.57.25651

Dethine, B., Enjolras, M., & Monticolo, D. (2020). Digitalization and SMEs' export management: Impacts on resources and capabilities. *Technology Innovation Management Review*, *10*(4). https://doi.org/10.22215/TIMREVIEW/1344

Dunning, J. H. (1977). Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach. In *The International Allocation of Economic Activity*. https://doi.org/10.1007/978-1-349-03196-2_38

Dunning, J. H. (1988). The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions. *Journal of International Business Studies*, *19*(1). https://doi.org/10.1057/palgrave.jibs.8490372

Dunning, J. H. (2015). The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions. In *The Eclectic Paradigm*. https://doi.org/10.1007/978-1-137-54471-1_3

Dyer, W. G., & Wilkins, A. L. (1991). Better Stories, Not Better Constructs, To Generate Better Theory: A Rejoinder to Eisenhardt. *Academy of Management Review*, *16*(3). https://doi.org/10.5465/amr.1991.4279492

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1). https://doi.org/10.5465/AMJ.2007.24160888

Ermine, J., Boughzala, I., & Tounkara, T. (2006). Critical Knowledge Map as a Decision Tool for Knowledge Transfer Actions. *Electronic Journal of Knowledge Management*, *4*(2).

Fields, Z., & Atiku, S. O. (2019). Collective Green Creativity and Eco-Innovation as Key Drivers of Sustainable Business Solutions in Organizations. In *Green Business*. https://doi.org/10.4018/978-1-5225-7915-1.ch022

Freytag, P. V., & Young, L. (2017). Collaborative research design: Working with business for meaningful findings. In *Collaborative Research Design: Working with Business for Meaningful Findings*. https://doi.org/10.1007/978-981-10-5008-4

Grant, R., & Phene, A. (2022). The knowledge based view and global strategy: Past impact and future potential. *Global Strategy Journal*, *12*(1). https://doi.org/10.1002/gsj.1399

Gupta, A. K., & Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic Management Journal*, *21*(4). https://doi.org/10.1002/(SICI)1097-0266(200004)21:4<473::AID-SMJ84>3.0.CO;2-I

Haghirian, P. (2010). Multinationals and Cross-Cultural Management: The Transfer of Knowledge within Multinational Corporations. In *Multinationals and Cross-Cultural Management: The Transfer of Knowledge within Multinational Corporations*. https://doi.org/10.4324/9780203846759

Hazen, B. T., Russo, I., Confente, I., & Pellathy, D. (2020). Supply chain management for circular economy: conceptual framework and research agenda. *International Journal of Logistics Management*, *32*(2). https://doi.org/10.1108/IJLM-12-2019-0332

Hofstede, G. (1980). Geert Hofstede: Culture's Consequences. *Beverly Hills, CA: Sage Publications.*

Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, *2*(1). https://doi.org/10.9707/2307-0919.1014

Hund, A., Holotiuk, F., Wagner, H. T., & Beimborn, D. (2020). Knowledge management in the digital era: How digital innovation labs facilitate knowledge recombination. *27th European Conference on Information Systems - Information Systems for a Sharing Society, ECIS 2019*.

Isensee, C., Teuteberg, F., Griese, K. M., & Topi, C. (2020). The relationship between organizational culture, sustainability, and digitalization in SMEs: A systematic review. In *Journal of Cleaner Production* (Vol. 275). https://doi.org/10.1016/j.jclepro.2020.122944

Javidan, M., Stahl, G. K., Brodbeck, F., & Wilderom, C. P. M. (2005). Cross-border transfer of knowledge: Cultural lessons from Project GLOBE. *Academy of Management Executive*, *19*(2). https://doi.org/10.5465/AME.2005.16962801

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

Kale, S., & Karaman, E. A. (2011). A fuzzy logic model for benchmarking the knowledge management performance of construction firms. *Canadian Journal of Civil Engineering*, *38*(4). https://doi.org/10.1139/l11-019

Kapoor, M., & Aggarwal, V. (2021). Comprehending a knowledge framework as a source of dynamic capabilities in IJVs through PLS-SEM. *Journal of Knowledge Management*, *25*(4). https://doi.org/10.1108/JKM-03-2020-0212

Konietzko, J., Bocken, N., & Hultink, E. J. (2020). A tool to analyze, ideate and develop circular innovation ecosystems. *Sustainability (Switzerland)*, *12*(1). https://doi.org/10.3390/SU12010417

Kyriakopoulos, G. L., & Solovev, D. B. (2022). Circular Economy (CE) Innovation and Internationalization of Small and Medium Enterprises (SMEs): Geographical Overview and Sectorial Patterns. *Smart Innovation, Systems and Technologies*, *275*. https://doi.org/10.1007/978-981-16-8829-4_10

Macarthur, E. (2017). What is a Circular Economy? | Ellen MacArthur Foundation. In *Ellen Macarthur Foundation*.

Makowski-Komura, L., Bebenroth, R., & Malik, A. (2020). Effects of language proficiency and communication on procedural justice in an international joint venture. *Labour & Industry*, *30*(3). https://doi.org/10.1080/10301763.2020.1815270

Martin, H., & Emptage, K. (2019). Knowledge-Transfer Enablers for Successful Construction Joint Ventures. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, *11*(3). https://doi.org/10.1061/(asce)la.1943-4170.0000313

McDermott, R. (2009). Why information technology inspired but cannot deliver knowledge management. In *Knowledge and Communities*. https://doi.org/10.4324/9780080509785-7

Meline, T. (2006). Selecting Studies for Systemic Review: Inclusion and Exclusion Criteria. *Contemporary Issues in Communication Science and Disorders*, *33*(Spring). https://doi.org/10.1044/cicsd_33_s_21

Merriam, S. B. (2009). Dealing with validity, reliability, and ethics. *Qualitative Research: A Guide to Design and Implementation*.

Nonaka, I., & Takeuchi, H. (1996). The knowledge-creating company: How Japanese companies create the dynamics of innovation. *Long Range Planning*, *29*(4). https://doi.org/10.1016/0024-6301(96)81509-3

Oviatt, B. M., & McDougall, P. P. (2018). *Toward a Theory of International New Ventures* (pp. 31–57). https://doi.org/10.1007/978-3-319-74228-1_2

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(5). https://doi.org/10.1007/s10488-013-0528-y

Park, C., Ghauri, P. N., Lee, J. Y., & Golmohammadi, I. (2022). Unveiling the black box of IJV innovativeness: The role of explicit and tacit knowledge transfer. *Journal of International Management*, *28*(4). https://doi.org/10.1016/j.intman.2022.100956

Park, C., & Vertinsky, I. (2016). Reverse and conventional knowledge transfers in international joint ventures. *Journal of Business Research*, *69*(8). https://doi.org/10.1016/j.jbusres.2015.12.051

Park, C., Vertinsky, I., & Becerra, M. (2015). Transfers of tacit vs. explicit knowledge and performance in international joint ventures: The role of age. *International Business Review*, *24*(1). https://doi.org/10.1016/j.ibusrev.2014.06.004

Pérez-Nordtvedt, L., Kedia, B. L., Datta, D. K., & Rasheed, A. A. (2008). Effectiveness and efficiency of cross-border knowledge transfer: An empirical examination. *Journal of Management Studies*, *45*(4). https://doi.org/10.1111/j.1467-6486.2008.00767.x

Polanyi, M. (2009). The Tacit dimension. In *Knowledge in Organisations*. https://doi.org/10.2307/j.ctv36xvpgt.10

Porter, M. E. (2008). *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press. https://books.google.co.in/books?id=7UqQXsQ_dj4C

Prieto-Sandoval, V., Jaca, C., Santos, J., Baumgartner, R. J., & Ormazabal, M. (2019). Key strategies, resources, and capabilities for implementing circular economy in industrial small and medium enterprises. *Corporate Social Responsibility and Environmental Management*, *26*(6). https://doi.org/10.1002/csr.1761

Rotsios, K., Sklavounos, N., & Hajidimitriou, Y. (2021). Successful knowledge transfer in IJVs: The role of trust, partner compatibility and expected benefits. *European Journal of International Management*, *15*(4). https://doi.org/10.1504/EJIM.2021.114625

Schöggl, J. P., Rusch, M., Stumpf, L., & Baumgartner, R. J. (2023). Implementation of digital technologies for a circular economy and sustainability management in the manufacturing sector. *Sustainable Production and Consumption*, *35*. https://doi.org/10.1016/j.spc.2022.11.012

Scipioni, S. (2021). A novel taxonomy of organizational learning contextual factors: Review of 2004–2020 top-ranked journals. *Online Journal of Applied Knowledge Management*, *9*(1). https://doi.org/10.36965/ojakm.2021.9(1)16-30

Shih, D. H., Lu, C. M., Lee, C. H., Parng, Y. J. M., Wu, K. J., & Tseng, M. L. (2018). A strategic knowledge management approach to circular agribusiness. *Sustainability (Switzerland)*, *10*(7). https://doi.org/10.3390/su10072389

Siggelkow, N. (2007). Persuasion with case studies. *Academy of Management Journal*, *50*(1). https://doi.org/10.5465/AMJ.2007.24160882

Sijabat, R. (2022). The Effects of Business Digitalization and Knowledge Management Practices on Business Performance: Findings from Indonesian Micro, Small, and Medium Enterprises. *BISNIS & BIROKRASI: Jurnal Ilmu Administrasi Dan Organisasi*, *29*(2). https://doi.org/10.20476/jbb.v29i2.1350

Stake, R. E. (1995). The Art of Case Study Research. Thousand Oaks,. *CA: SAGE, CA*.

Suha, K. F. (2024). *The Knowledge Management Transition to Smart Circular Economy: A Study on Logistics Industry*. Abo Akademi University.

Suseno, Y., & Ratten, V. (2007). A theoretical framework of alliance performance: The role of trust, social capital and knowledge development. *Journal of Management and Organization*, *13*(1). https://doi.org/10.5172/jmo.2007.13.1.4

Wang, S., & Wang, H. (2020). Big data for small and medium-sized enterprises (SME): a knowledge management model. *Journal of Knowledge Management*, *24*(4). https://doi.org/10.1108/JKM-02-2020-0081

Wernerfelt, B. (2020). A Possible Micro-Foundation for the RBV and its Implications. *Strategic Management Review*, *1*(1). https://doi.org/10.1561/111.00000003

Witjes, S., & Lozano, R. (2016). Towards a more Circular Economy: Proposing a framework linking sustainable public procurement and sustainable business models. *Resources, Conservation and Recycling*, *112*. https://doi.org/10.1016/j.resconrec.2016.04.015

Yin, R. K. (2013). Case study research: Design and methods. *Applied Social Research Methods Series*, *18*(2). https://doi.org/10.1097/00001610-199503000-00004

Zahoor, N., Al-Tabbaa, O., Khan, Z., & Wood, G. (2020). Collaboration and Internationalization of SMEs: Insights and Recommendations from a Systematic Review. *International Journal of Management Reviews*, *22*(4). https://doi.org/10.1111/ijmr.12238

Zhao, X., & Mills, C. (2019). Reconciling multiple realities in an international joint venture: a case for deliberately fostering communication hybridity at the interfirm interface. *Communication Research and Practice*, *5*(1). https://doi.org/10.1080/22041451.2019.1561397