

FROM STRATEGY TO PRACTICE: IMPLEMENTING SUSTAINABLE PROCUREMENT IN CONSTRUCTION SMES— A SYSTEMATIC REVIEW

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ABSTRACT

Sustainable procurement (SP) has become a critical mechanism for improving environmental, social, and economic performance in the construction sector, thereby contributing to achieve UN-SDG goals (SGD12). However, SP implementation within construction SMEs is rarely examined in existing studies, indicating a significant gap in the literature. This study addresses this gap through a systematic literature review of 47 peer-reviewed articles. The review applies inductive and deductive content analysis to identify the most prominent SP implementation strategies that help SMEs to foster sustainability. The findings reveal a total of 12 implementation strategies. Among them stakeholder collaboration, awareness and knowledge enhancement, and top management support are the strategies most frequently highlighted in the literature, while project-specific measures and the use of project power structures remain underexamined. The study contributes to theory by articulating the strategies in practicing sustainability tailored to construction SMEs context and to practice by identifying actionable recommendations for addressing financial and capability constraints. SMEs and policy makers in construction can use this set of implementation strategies to promote sustainable practices and researchers are presented with enhanced opportunities on contributing to the body of knowledge systematically and effectively.

KEYWORDS: Construction; Implementation Strategies; Procurement; SMEs; Sustainable.

1. INTRODUCTION

Given that the construction sector is one of the leading growing industries (Oyegoke et al., 2024; Sarvari et al., 2021; Wedawatta et al., 2010), it significantly impacts sustainability outcomes. For instance, it is responsible for climate changes (Erasmus & Iyer-Raniga, 2022), approximately 38% of total of CO₂ emissions and around 35% of global energy consumption (UNEP, 2020). With highest accident rates, the construction sector is recognised among the most hazardous industries for workers in terms of health

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and safety performance (Bernaciak et al., 2021; Xia et al., 2018). On the other hand, construction supports creation of infrastructure, and is a source of employment, that shapes social lifestyle of people (Xia et al., 2018). This indicates that construction sector significantly impacts three pillars of sustainable development: social, environmental and economic (Opoku et al., 2022) and thereby influencing on the achievement of UN-SDGs, particularly on SDG12. Construction is generally driven by projects that are primarily made up of procurement-related activities (Khouja et al., 2021). Hence, sustainability measures must be initiated through project procurement (Ershadi et al., 2021). Subsequently, the concept of ‘Sustainable Procurement’ (hereafter referred to as SP) in construction projects emerged and gained prominence among scholars seeking to advance sustainable development within construction (Erasmus & Iyer-Raniga, 2022).

Small and medium-sized enterprises (hereafter referred to as SMEs) play a critical role in executing construction procurement (Tezel et al., 2020), as they constitute around 90% of organisations globally (Adzivor et al., 2023). Particularly, SMEs’ cumulative procurement decisions exert a significant influence on sustainability outcomes across construction supply chains (Nangpiire et al., 2024). Subsequently, improving SP practices among SMEs has the potential to generate system-wide sustainability benefits that extend beyond individual projects. Yet, in the absence of support mechanisms, SMEs frequently struggle to successfully implement sustainable procurement practices (Charkaoui, 2025). Unlike large organisations, SMEs typically operate with limited financial resources, reduced access to specialist expertise, and less formalised management systems (Michna et al., 2020). These constraints often restrict their capacity to absorb high initial investments (Scipioni & Niccolini, 2021) and interpret complex sustainability standards (Balasubramanian et al., 2020). Although SP has been widely examined within the construction sector, existing research predominantly focuses on large organisations (for example, (Erasmus & Iyer-Raniga, 2022; Ershadi et al., 2021; Ruparathna & Hewage, 2015)). Far less attention has been given to how construction SMEs can practically implement SP with limited guidance available. To address this gap, the present study seeks to answer the research question: “*What implementation strategies are critical in promoting SP within construction SMEs?*” This finding could help SMEs, policy makers, and researchers in the promotion of SP in the construction industry.

The subsequent sections of this paper are structured as follows: Section 2 explains the methodology, Section 3 reports the results, Section 4 outlines the discussion and finally Section 5 concludes the study with limitations, and suggestions for future research directions.

2. RESEARCH METHODOLOGY

This study examines research question that is not sufficiently explored in existing studies. Due to this lack of theoretical development in the domain, it requires in-depth investigation of literature through a rigorous, and evidence-based protocol (Briner & Denyer, 2012; Durach et al., 2017; Taherdoost, 2023). Subsequently, this study adopts the systematic literature review methodology based on Tranfield et al. (2003), and Durach et al. (2017). The review process entails three stages: (i) planning; (ii) screening and selection; and (iii) analysis and reporting.

In Stage 1, a preliminary search for the exploration of literature on the key concepts was performed to ensure that appropriate search string is developed that consists of all

possible keywords. This was performed since the construction of search strings critically affects the validity, reliability, and comprehensiveness of the extracted research papers (Yu et al., 2020). Afterward, the following keywords (Table 1) were generated and combined with ‘AND’ to develop the search string used in the literature search.

Table 1: Keywords used in the literature search (Author’s own work)

Concepts	Keywords	Search Through
Sustainable Procurement	sustainab* OR green OR environment* OR tbl OR “triple bottom line” OR "construction procure*" OR "project procure*" OR procur*	Title, abstract, keyword
Construction	construction OR "construction industry" OR building OR "built environment"	All fields
SMEs	sme* OR "small firm*" OR "small business*" OR "small enterprise*" OR "medium enterprise*" OR "small compan*" OR "medium business*" OR "medium compan*" OR "mid-sized compan*"	Title, abstract, keyword

Stage 2 comprises of literature search and the selection of relevant papers for the study. Scopus database was used to explore potentially relevant articles due to its widespread repository known for multidisciplinary scientific writings in line with other scholars who used this as standalone academic database (Adekunle et al. (2022); Nagariya et al. (2021); Wang et al. (2020); and Yu et al. (2020)). Moreover, eligibility criteria were used to define inclusion and exclusion parameters as:

- publication stage - final publications.
- document types - peer-reviewed journal articles and conference papers.
- subject areas – ‘Engineering, Business, Management and Accounting, Decision Science, Environmental Science, Energy, Earth and Planetary Sciences, and Materials Science’
- language - English.

Applying these criteria yielded 295 papers. An initial screening of titles, abstracts, and keywords reduced the number to 193 papers. A subsequent cross-checking process was conducted to obtain full texts, during which 6 papers were excluded due to unavailable full text access. Finally, a comprehensive full text assessment was undertaken, resulting in 38 papers being retained for detailed analysis. An additional 9 studies were identified through snowball citation sampling. Figure 1 summarises this research process.

During Stage 3, a descriptive analysis of the final set of 47 studies was conducted in Excel. Further, the selected papers were carefully scrutinised through inductive and deductive content analysis proposed by Xia et al (2018) to identify the most frequently researched ‘Implementation Strategies’ (hereafter referred to as ISs). Findings are reported in Section 3 to ensure the rigor and transparency of the review protocol.

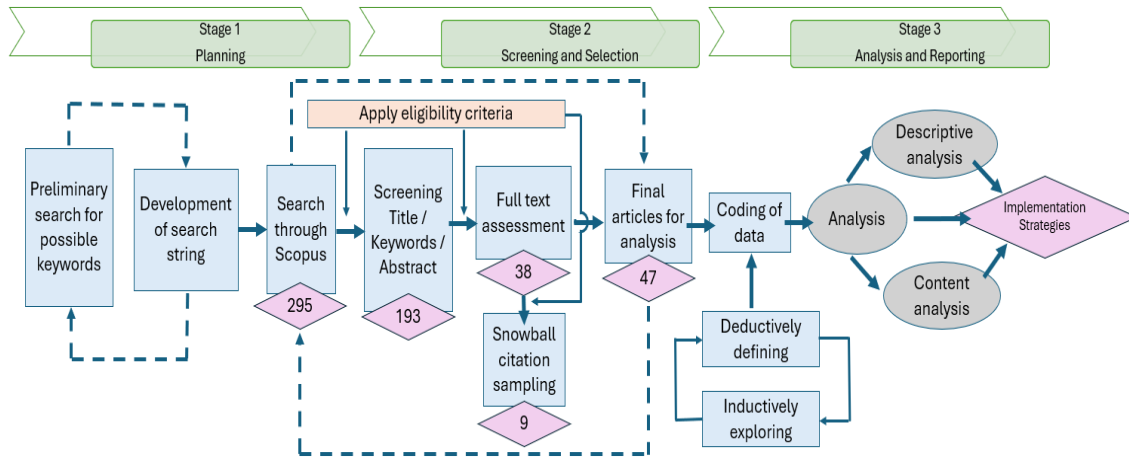


Figure 1: Research process

3. ANALYSIS AND RESULTS OF SYSTEMATIC REVIEW

3.1 PRESENTATION OF DESCRIPTIVE ANALYSIS

The descriptive analysis presented in this section offers insight into the characteristics of research contributions to the paradigm of SP of construction SMEs, specifically in relation to annual publication trends, publications by countries, and journal distribution.

3.1.1 Annual Publication Trends

Figure 2 illustrates a general upward trend in research activity after 2000, although certain years show an absence of publications on SP. The increase from an average of 1.12 papers per year (2000-2018) to 3.85 papers per year (2019-May, 2025) reflects the growing scholarly attention to SP, with the first notable spike occurring in 2019. This rise may be attributed to the renewed global emphasis on sustainable development in the aftermath of the COVID-19 pandemic and subsequent economic disruptions (Baral et al., 2023).

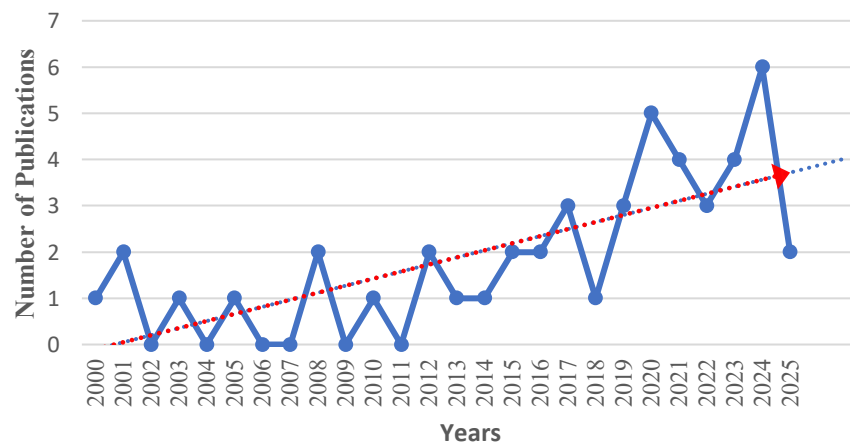


Figure 2: Annual publication trends

3.1.2 Publications by Countries

As illustrated in Figure 3, the United Kingdom emerges as the leading contributor to research on this domain. Other countries, including Indonesia, the United States, and Italy

have also made notable contributions. The category labelled ‘International’ refers to studies conducted across multiple countries, most commonly in the form of literature reviews.

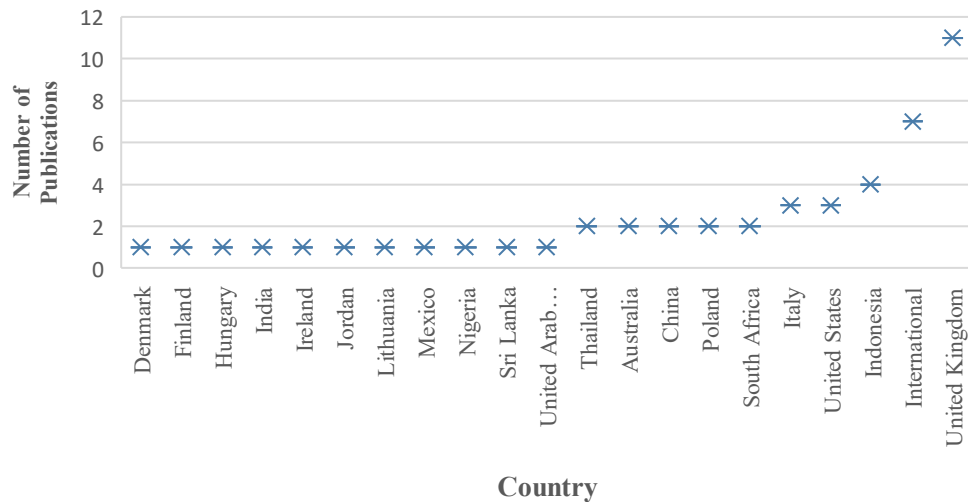


Figure 3: Publication by countries

3.1.3 Journal Distribution

The review indicates that research concerning SP in construction is dispersed across a wide range of academic journals (Table 2). Among these, *Sustainability (MDPI)* and *Construction Management and Economics* emerge as the most prominent sources of relevant publications. Notably, both journals are classified as Q1 in the Scimago Journal and Country Rank (SJR), reflecting strong scholarly interest and the growing academic significance of this research domain.

Table 2: Distribution of publication outlets

Paper Outlets	Number of Publications
Sustainability	5
Construction Management and Economics	3
Association of Researchers in Construction Management, ARCOM	2
European Journal of Purchasing & Supply Management	2
Journal of Cleaner Production	2
IOP Conference Series: Earth and Environmental Science	2
Advances in Intelligent Systems and Computing	2
Automation in Construction	2
Buildings	2
Construction Innovation	2
Engineering, Construction and Architectural Management	1
Engineering Economics	1
Frontiers in Built Environment	1
Institution of Civil Engineers: Management, Procurement and Law	1
International Business Management	1
International Conference on System Sciences	1

Paper Outlets	Number of Publications
International Journal of Agile Systems and Management	1
International Journal of Building Pathology and Adaptation	1
International Journal of Life Cycle Assessment	1
International Journal of Manufacturing Technology and Management	1
International Journal of Project Management	1
International Structural Engineering and Construction	1
Journal of Civil Engineering and Management	1
Journal of Construction Engineering	1
Journal of Construction Engineering and Management	1
Journal of Financial Management of Property and Construction	1
Logforum	1
Management of Environmental Quality: An International Journal	1
Nanotechnology Perceptions	1
Resources	1
Sinergie	1
Structural Integrity and Life	1
World Construction Symposium	1

3.2 PRESENTATION OF CONTENT ANALYSIS

The following sub-sections present the key findings from the content analysis conducted through coding, synthesis, and categorisation techniques as outlined by Seuring and Gold (2012). Initially, the codes were inductively explored from the selected literature based on the key themes of the pertinent research question. Subsequently, the papers were deductively re-examined enabling the systematic synthesis and categorisation of identified codes across studies (Xia et al., 2018).

3.2.1 Inductive Content Analysis

This part includes the identification of codes during the inductive content analysis on the implementation strategies (ISs) which promote SP. A total of 12 ISs emerged (Table 2) and were subsequently coded to enable further deductive analysis.

Table 3: Implementation strategies for promoting SP

Codes	Implementation Strategies for Promoting SP
IS1	Communication channels
IS2	Stakeholder collaboration
IS3	Effective information flow
IS4	Top-management support
IS5	Client accountability
IS6	Role of government and industry body
IS7	Project and site-specific measures
IS8	Change management protocol
IS9	Training to leverage skills and competencies

Codes	Implementation Strategies for Promoting SP
IS10	Increase awareness and knowledge
IS11	Use of power structure of project
IS12	Integrating to existing business and systems

3.2.2 Deductive Content Analysis

Further to the inductive analysis, the deductive content analysis of all the selected papers was carried out to re-examine the codes on ISs (Section 3.2.1). From Table 2, the descriptions of the potential ISs were extracted as additional attributes to these strategies. Figure 4 summarises the frequency distribution of the strategies using a radar image. The numerical values in the figure indicate the total frequency of citations corresponding to each implementation strategy across the reviewed studies.

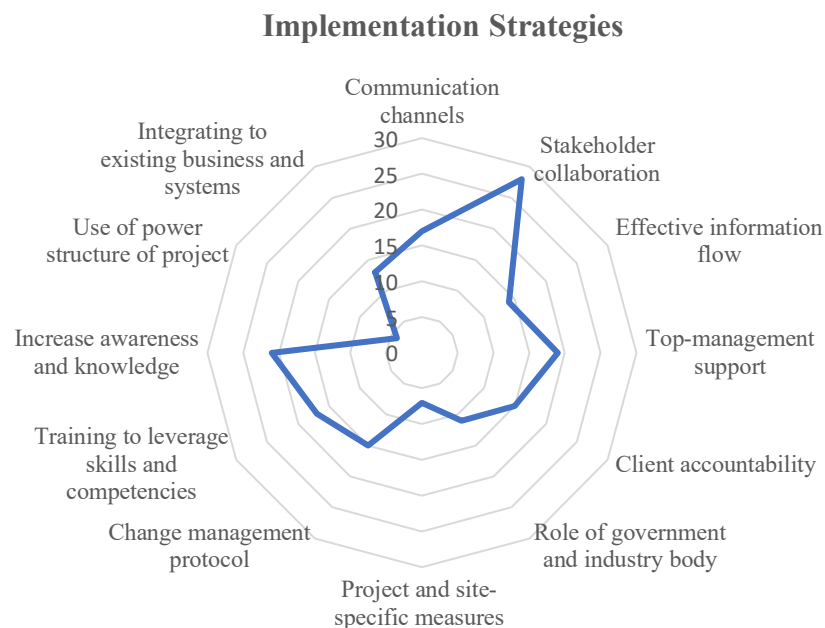


Figure 4: Citation frequency distribution for ISs

Focusing on the top strategies identified across studies based on occurrence, *stakeholder collaboration* (IS2) seemed the most popular strategy. Manu et al. (2015) stated the collaboration is more contractual due to greater emphasis on money. In contrast, Dey et al. (2008) and Taggart et al. (2014) identified it is based on personal trust rather than contract laws. Yet, mapping and prioritising the main business targets of partners towards the ecosystem help to achieve initial holistic collaboration (Han et al., 2017; Korpela et al., 2016), which is facilitated through open knowledge sharing (Cyfert et al., 2024). This helps SMEs to overcome the barriers of resource constraints and to improve agility (Han et al., 2017; Scipioni & Niccolini, 2021). In line with these scholars, the strategy to *increase awareness and knowledge* (IS10) appears as second highest that emphasises the need for conducting promotion campaigns on various aspects of sustainable development. For instance, Arvizu-Piña et al. (2017) and Garoghan et al. (2025) emphasised the importance of awareness campaigns focusing on waste management practices and the adoption of a life-cycle approach, whereas Alnhoud et al. (2021) highlighted the need to promote safety culture in procurement.

Top-management support (IS4) in embedding sustainability within procurement processes of SMEs is widely recognised as a critical strategy, given their central influence on organisational culture (Scipioni et al., 2021; Scipioni & Niccolini, 2021). Positive management can manifest through the provision of training and incentives for environmentally responsible initiatives (Qi et al., 2010), as well as safety tours and workforce engagement activities that reinforce sustainable and safe practices (Stiles et al., 2019). This can be further operationalised with the use of appropriate *communication channels (IS1)*, along with *training to leverage skills and competencies (IS9)*. Appropriate communication channels are essential to ensure that accurate and timely information is conveyed, thereby supporting informed decision-making within procurement processes (Ko et al., 2016; Lukson et al., 2024). In specific, communicating with local authorities, research institutions, and public organisations plays a crucial role in enabling sustainable procurement among SMEs (Salvador et al., 2023). In parallel, targeted training on SP approaches like safety management practices is especially important (Alnhoud et al., 2021). However, SMEs face notable challenges in this regard, for example, substantial financial costs associated with external training programmes (Briscoe et al., 2001). To mitigate these constraints, internal training for existing personnel is recommended (Scipioni & Niccolini, 2021).

The literature assigns considerable importance to *client accountability (IS5)* and *change-management protocols (IS8)* within SMEs. Clients influence several sustainability-oriented practices. For example, responsible material sourcing (Glass et al., 2012), the adoption of e-procurement systems (Vitkauskaite & Gatautis, 2008), and the procurement of green products and sustainable construction technologies (Scipioni & Niccolini, 2021). This indicates the involvement of client throughout the procurement life cycle. Transitioning SME culture from traditional routines to environmentally responsible practices represent another central strategy for supporting sustainable procurement (Gusmao Brissi & Debs, 2023; Lukson et al., 2024; Scipioni & Niccolini, 2021). Nonetheless, SMEs frequently exhibit resistance to organisational change, particularly when it disrupts established procedures or when return on investment is perceived as uncertain (Ashish Mankar et al., 2024; Taggart et al., 2014). To overcome this, *effective information flow (IS3)* strategy can be utilised. Yet, issues like data reliability, traceability, and completeness disincentives SMEs to share information truthfully, that in result negatively impact on procurement performance (Di Giuda et al., 2020). Addressing this issue, SMEs can think of *integrating to existing business and systems (IS12)* to ensure SMEs' commitment to sustainability (Balasubramanian et al., 2020). Relatedly, Robeiro and Love (2003) and Upstill-Goddard et al. (2012) also emphasises the need of more holistic approach that could be integrated into corporate decision making.

The *role of government and industry body (IS6)* strategy provides motivations for the uptake of SP, as fines and penalties for non-compliance led to a negative impact among contractors (Qi et al., 2010). Alternatively support mechanisms, such as incentives, tax discount, and preferential treatment to be deployed to increase the implementation of SP among construction SMEs (Glass et al., 2012; Balasubramanian et al., 2020). Distinctly government and regulatory bodies could set clear rules without frequent revisions (Ashish Mankar et al., 2024). Finally, *project- and site-specific measures (IS7)*, as well as the *strategic use of power structures of project (IS11)*, receive comparatively less attention in the literature than other implementation strategies. These measures are highly

context-dependent, i.e. varying significantly across projects and procurement arrangements. Thus, it is difficult to generalise them across studies (Taggart et al., 2014), resulting in limited scholarly focus relative to broader organisational or sector-wide strategies (Manu et al., 2015). Yet, implementing green is highly depending on power of different members in the project team (Glass et al., 2012). Stiles et al. (2019) further highlighted the divergent power relationship between main contractor and subcontractors that influence the reported levels of safety culture for the project. In addition, trust issue linked to payment practices of main contractor is observed due to the lower power position of subcontractor (Manu et al., 2015).

4. DISCUSSION

The best practices for SP in construction seem less developed (Wirahadikusumah et al., 2020). Specially, SMEs face several challenges implementing SP in construction (Ashish Mankar et al., 2024; Balasubramanian et al., 2020; Gusmao Brissi & Debs, 2023; Robeiro & Love, 2003; Scipioni et al., 2021). Nonetheless, the findings of Kelly et al. (2019) indicate that construction SMEs are generally receptive to a wide range of sustainable initiatives. This provides a strong motivation for the present study and a potential to explore implementation strategies. The reviewed articles most often emphasise stakeholder collaboration, increased awareness and knowledge, and top management support as implementation strategies. As the construction process involves many participants, intra and inter relationship and collaboration between members are basic requirement (Dey et al., 2008; Di Giuda et al., 2020). In contrast, project- and site-specific measures and the strategic use of project power structures received considerably less scholarly attention, indicating that these areas remain underexplored within the existing literature.

While this review findings are drawn from international contexts, the findings hold strong relevance for Sri Lanka, as SMEs constitute most construction firms and play a critical role in procurement (Lukson et al., 2024). Moreover, several policies emphasis on sustainable development, infrastructure revitalisation and reforms has created increasing pressure for SME contractors to demonstrate environmental and social responsibility (Ratnayake et al., 2025). In this context, the outcomes of this review provide a transferable and contextually relevant foundation of implementation strategies among construction SMEs in Sri Lanka.

Further, this study offers valuable recommendations to SMEs and policy makers in general. Firstly, the existing literature stressed high initial investment costs consistently emerge as the most frequently cited obstacle for SMEs (Ashish Mankar et al., 2024; Balasubramanian et al., 2020; Gusmao Brissi & Debs, 2023; Robeiro & Love, 2003; Scipioni et al., 2021). To overcome this, SMEs are encouraged to adopt incremental implementation approaches, seek government grants or green financing schemes, and leverage collaborative procurement models that allow cost and resource-sharing with partners. Secondly, SP requires expertise knowledge and technical infrastructure (Ashish Mankar et al., 2024; Scipioni et al., 2021). SMEs should therefore invest in internal capacity-building through targeted training and upskilling initiatives. Where external training costs are prohibitive, SMEs may prioritise low-cost internal training, peer-learning networks, or participation in industry-led workshops that provide accessible knowledge resources. Thirdly, SMEs need to put more effort into maintaining partnerships with industry associations, and technology providers to overcome resource

and development constraints (Cyfert et al., 2024). Despite these challenges, SMEs' ability to adopt radical changes support transition of business towards sustainability when proactive measures are taken (Scipioni & Niccolini, 2021). Industry bodies in construction can also use the proposed ISs to promote sustainable practices and researchers are presented with enhancing opportunities on contributing to the body of knowledge systematically and effectively.

5. CONCLUSIONS

This study conducted a systematic review of existing literature on SP in construction. A total of 12 ISs were retrieved for SP implementation in construction SMEs from literature. Moreover, this review enables the identification of several important gaps in the existing literature. First, it highlights that project- and site-specific measures, as well as the strategic use of project power structures, have received comparatively little attention as effective implementation strategies for sustainable procurement. Second, clients can encourage SMEs adopting these ISs through enforcement of mandatory sustainability clauses in tender submissions and engage SMEs from early stages. Together, these observations point to clear opportunities for future research to explore these underexamined areas and to advance both theoretical understanding and practical application. This study also has its limitations. It performed through a single database and included only peer-reviewed papers, excluding other valuable sources such as grey literature. Although Scopus is a widely recognised database that indexes high-quality publications, relying solely on this source may limit access to the full breadth of potentially relevant literature. Replicating this review using multiple databases and broader literature sources is therefore recommended. One key limitation is the absence of empirical evidence, like other literature reviews. Hence, it could be the starting point for future research to empirically validate the proposed implementation strategies.

6. REFERENCES

- 2020 Global Status Report for Buildings and Construction towards a Zero-emissions, efficient and Resilient Buildings and Construction sector. (2020). In *Global ABC*. Retrieved July 7, 2026, from https://globalabc.org/sites/default/files/inline-files/2020%20Buildings%20GSR_FULL%20REPORT.pdf
- Adekunle, S. A., Aigbavboa, C., Ejohwomu, O., Ikuabe, M., & Ogunbayo, B. (2022). A critical review of maturity model development in the digitisation era. *Buildings* 12(6). <https://doi.org/10.3390/buildings12060858>
- Adzivor, E. K., Emuze, F., & Das, D. K. (2023). Indicators for safety culture in SME construction firms: a Delphi study in Ghana. *Journal of Financial Management of Property and Construction*, 28(3), 293–316. <https://doi.org/10.1108/JFMPC-04-2022-0020>
- Alnhoud, O. T., Shaqadan, A., & Alkasasbeh, R. (2021). Developing framework for safety analysis and risk assessment in construction site environment in Jordan. *Structural Integrity and Life*, 21(2), 135–145. <http://divk.inovacionicentar.rs/ivk/ivk21/135-IVK2-2021-OTA-AS-RA.pdf>
- Arvizu-Piña, V. A., & Cuchí Burgos, A. (2017). Promoting sustainability in Mexico's building sector via environmental product declarations. *International Journal of Life Cycle Assessment*, 22(11), 1744–1759. <https://doi.org/10.1007/s11367-017-1269-z>
- Ashish Mankar, V., Vichoray, C., & Shukla, H. (2024). Sustainable Supply Chain Management in SMEs: Analyzing Drivers and Barriers to Green Practices in Nagpur. *Nanotechnology Perceptions*, 20(S7), 1133–1140. www.nano-ntp.com
- Balasubramanian, S., Shukla, V., & Chanchaichujit, J. (2020). Firm size implications for environmental sustainability of supply chains: evidence from the UAE. *Management of Environmental Quality: An International Journal*, 31(5), 1375–1406. <https://doi.org/10.1108/MEQ-01-2020-0004>

- Baral, M. M., Singh, R. K., & Kazançoğlu, Y. (2023). Analysis of factors impacting survivability of sustainable supply chain during COVID-19 pandemic: an empirical study in the context of SMEs. *International Journal of Logistics Management*, 34(4), 935–961. <https://doi.org/10.1108/IJLM-04-2021-0198>
- Bernaciak, A., Halaburda, M., & Bernaciak, A. (2021). The construction industry as the subject of implementing corporate social responsibility (The case of Poland). *Sustainability (Switzerland)*, 13(17). <https://doi.org/10.3390/su13179728>
- Briner, R. B., & Denyer, D. (2012). Systematic review and evidence synthesis as a practice and scholarship tool. In *The Oxford Handbook of Evidence-Based Management* (pp. 112–129). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199763986.001.0001>
- Briscoe, G., Dainty, A. R. J., & Millett, S. (2001). Construction supply chain partnerships: skills, knowledge and attitudinal requirements. *European Journal of Purchasing & Supply Management*, 7, 243–255. <http://www.cf.ac.uk/masts/>
- Charkaoui, A. (2025). Developing a Sustainable Procurement Performance Index based on ISO 20400 Standard: A Structural Equation Modelling Approach. *Journal of Optimization and Supply Chain Management*, 2(3), 198–214. <https://doi.org/10.22034/ISS.2025.9021.1034>
- Cyfert, S., Szumowski, W., & Glabiszewski, W. (2024). Building SME performance through relationship quality. The role of supply chain flexibility. *Logforum*, 20(1), 71–80. <https://doi.org/10.17270/J.LOG.000946>
- Dey, P. K., Ho, W., Charoengnam, C., & Deewong, W. (2008). Relationship characteristics within the supply chain of small and medium-sized construction enterprises in Thailand. *Int. J. Manufacturing Technology and Management*, 15(1), 102–118. <https://doi.org/10.1504/IJMTM.2008.018242>
- Di Giuda, G. M., Giana, P. E., & Pattini, G. (2020). The shortening and the automation of payments: The potentiality of smart contract in the aeoo sector. *Proceedings of International Structural Engineering and Construction*, 7(2). [https://doi.org/10.14455/ISEC.2020.7\(2\).CON-12](https://doi.org/10.14455/ISEC.2020.7(2).CON-12)
- Durach, C. F., Kembro, J., & Wieland, A. (2017). A New Paradigm for Systematic Literature Reviews in Supply Chain Management. *Journal of Supply Chain Management*, 53(4), 67–85. <https://doi.org/10.1111/jscm.12145>
- Erasmus, P., & Iyer-Raniga, U. (2022). Sustainability in Construction Procurement. In W. Leal Filho, A.M. Azul, L Brandli, P. G. Özuyar, T. Wall (Ed.), *UN Sustainable Development Goals* (pp. 1–10). Responsible Consumption and Production. https://doi.org/10.1007/978-3-319-71062-4_105-1
- Ershadi, M., Jefferies, M., Davis, P., & Mojtahedi, M. (2021). Barriers to achieving sustainable construction project procurement in the private sector. *Cleaner Engineering and Technology*, 3. <https://doi.org/10.1016/j.clet.2021.100125>
- Garoghan, S., Adewumi, A. S., Ofetotse, E. L., Onyango, V., & Dawodu, A. (2025). Enhancing sustainable waste management strategies for small and medium-sized enterprises: a focus on commercial refurbishment projects in the United Kingdom. *Frontiers in Built Environment*, 11. <https://doi.org/10.3389/fbuil.2025.1469398>
- Glass, J., Achour, N., Parry, T., & Nicholson, I. (2012). Engaging small firms in sustainable supply chains: responsible sourcing practices in the UK construction industry. *Int. J. Agile Systems and Management*, 5(1), 29–58. <http://www.responsible-sourcing.co.uk/>
- Gusmao Brissi, S., & Debs, L. (2023). Principles for adopting offsite construction in design and construction companies focused on multifamily projects in the USA. *Engineering, Construction and Architectural Management*. <https://doi.org/10.1108/ECAM-03-2022-0262>
- Han, Y., Skibniewski, M. J., & Wang, L. (2017). A market equilibrium supply chain model for supporting self-manufacturing or outsourcing decisions in prefabricated construction. *Sustainability (Switzerland)*, 9(11). <https://doi.org/10.3390/su9112069>
- Kelly, M., Burke, K., & Gottsche, J. (2019). Exploring material circularity opportunities for a construction-SME on small-scale projects in Ireland. *IOP Conference Series: Earth and Environmental Science*, 225(1). <https://doi.org/10.1088/1755-1315/225/1/012066>
- Khouja, A., Lehoux, N., Cimon, Y., & Cloutier, C. (2021). Collaborative interorganizational relationships in a project-based industry. *Buildings*, 11(11). <https://doi.org/10.3390/buildings11110502>

- Ko, H. S., Azambuja, M., & Felix Lee, H. (2016). Cloud-based Materials Tracking System Prototype Integrated with Radio Frequency Identification Tagging Technology. *Automation in Construction*, 63, 144–154. <https://doi.org/10.1016/j.autcon.2015.12.011>
- Korpela, K., Mikkonen, K., Hallikas, J., & Pynnonen, M. (2016). Digital business ecosystem transformation - Towards cloud integration. *Proceedings of the Annual Hawaii International Conference on System Sciences, 2016-March*, 3959–3968. <https://doi.org/10.1109/HICSS.2016.491>
- Lukson, E. E., Ranadewa, K. A. T. O., Parameswaran, A., Wijerathna, M. R. D. P., & Kodituwakku, D. (2024). Integrated project delivery implementation among construction SMEs in Sri Lanka: barriers and strategies. *12th World Construction Symposium - 2024*, 619–633. <https://doi.org/10.31705/WCS.2024.49>
- Manu, E., Ankrah, N., Chinyio, E., & Proverbs, D. (2015). Trust influencing factors in main contractor and subcontractor relationships during projects. *International Journal of Project Management*, 33(7), 1495–1508. <https://doi.org/10.1016/j.ijproman.2015.06.006>
- Michna, A., Kmiecik, R., & Czerwinska-Lubszyk, A. (2020). Dimensions of intercompany cooperation in the construction industry and their relations to performance of SMEs. *Engineering Economics*, 31(2), 221–232. <https://doi.org/10.5755/j01.ee.31.2.21212>
- Nagariya, R., Kumar, D., & Kumar, I. (2021). Service supply chain: from bibliometric analysis to content analysis, current research trends and future research directions. *Benchmarking*, 28(1), 333–369. <https://doi.org/10.1108/BIJ-04-2020-0137>
- Nangpiire, C., Gyebi, F. O., & Nasse, T. (2024). Sustainable Procurement Practices and Organisational Performance of Small and Medium Enterprises in Ghana. *International Journal of Economics and Financial Issues*, 14(1), 95–106. <https://doi.org/10.32479/ijefi.15444>
- Opoku, A., Deng, J., Elmualim, A., Ekung, S., Hussein, A. A., & Buhashima Abdalla, S. (2022). Sustainable procurement in construction and the realisation of the sustainable development goal (SDG) 12. *Journal of Cleaner Production*, 376. <https://doi.org/10.1016/j.jclepro.2022.134294>
- Oyegoke, A. S., Fisher, B. W., Ajayi, S., Omotayo, T. S., & Ewuga, D. (2024). The disruptive factors and longevity effects of Covid-19 and Brexit on the SMEs construction supply chain in the UK. *Journal of Financial Management of Property and Construction*, 29(1), 115–134. <https://doi.org/10.1108/JFMPC-11-2022-0057>
- Qi, G. Y., Shen, L. Y., Zeng, S. X., & Jorge, O. J. (2010). The drivers for contractors' green innovation: An industry perspective. *Journal of Cleaner Production*, 18(14), 1358–1365. <https://doi.org/10.1016/j.jclepro.2010.04.017>
- Ratnayake, M. R. I. U. K., Wijerathna, M. R. D. P., Ranadewa, K. A. T. O., & Perera, B. A. K. S. (2025). A scoping review of construction SMEs: Global vs local. In: Waidyasekara, K.G.A.S., Jayasena, H.S., Wimalaratne, P.L.I. and Tennakoon, G.A. (eds). *Proceedings of the 13th World Construction Symposium, 15-16 August 2025, Sri Lanka*. pp. 69-82. <https://doi.org/10.31705/WCS.2025.6>
- Robeiro, F. L., & Love, P. E. D. (2003). Value creation through an e-business strategy: implication for SMEs in construction. *Construction Innovation*, 3, 3–14. <https://doi.org/10.1191=1471417503ci043oa>
- Ruparathna, R., & Hewage, K. (2015). Sustainable procurement in the Canadian construction industry: Current practices, drivers and opportunities. *Journal of Cleaner Production*, 109, 305–314. <https://doi.org/10.1016/j.jclepro.2015.07.007>
- Salvador, R., Søberg, P. V., Jørgensen, M. S., Schmidt-Kallesøe, L. L., & Larsen, S. B. (2023). Explaining sustainability performance and maturity in SMEs – Learnings from a 100-participant sustainability innovation project. *Journal of Cleaner Production*, 419. <https://doi.org/10.1016/j.jclepro.2023.138248>
- Sarvari, H., Chan, D. W. M., Alaeos, A. K. F., Olawumi, T. O., & Abdalridah Aldaud, A. A. (2021). Critical success factors for managing construction small and medium-sized enterprises in developing countries of Middle East: Evidence from Iranian construction enterprises. *Journal of Building Engineering*, 43. <https://doi.org/10.1016/j.job.2021.103152>
- Scipioni, S., & Niccolini, F. (2021). How to close the loop? Organizational learning processes and contextual factors for small and medium enterprises' circular business models introduction. *Italian Journal of Management*, 39(3), 141–162. <https://doi.org/10.7433/s116.2021.08>
- Scipioni, S., Russ, M., & Niccolini, F. (2021). From barriers to enablers: The role of organizational learning in transitioning smes into the circular economy. *Sustainability (Switzerland)*, 13(3), 1–32. <https://doi.org/10.3390/su13031021>

- Seuring, S., & Gold, S. (2012). Conducting content-analysis based literature reviews in supply chain management. *Supply Chain Management*, 17(5), 544–555. <https://doi.org/10.1108/13598541211258609>
- Stiles, S., Ryan, B., & Golightly, D. (2019). Readiness to Change: Perceptions of Safety Culture up and down the Supply Chain. In S. Bagnara et al. (Ed.), *Proceedings of the 20th Congress of the International Ergonomics Association (IEA 2018)* (Vol. 819, pp. 213–223). Springer Verlag. https://doi.org/10.1007/978-3-319-96089-0_24
- Taggart, M., Koskela, L. K., & Rooke, J. A. (2014). An improvement strategy for the defects and rework management process within an SME: An action research. In A. B. Raiden & E. Aboagye- Nimo (Eds.), *In: Proceedings of the 30th Annual ARCOM Conference*. (pp. 1059–1068). Association of Researchers in Construction Management. <http://eprints.hud.ac.uk/id/eprint/26210/http://eprints.hud.ac.uk/>
- Taherdoost, H. (2023). Towards nuts and bolts of conducting literature review: A typology of literature review. *Electronics (Switzerland)* 12(4). <https://doi.org/10.3390/electronics12040800>
- Tezel, A., Taggart, M., Koskela, L., Tzortzopoulos, P., Hanahoe, J., & Kelly, M. (2020). Lean construction and BIM in small and medium-sized enterprises (SMEs) in construction: A systematic literature review. *Canadian Journal of Civil Engineering*, 47(2), 186–201. <https://doi.org/10.1139/cjce-2018-0408>
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review*. In *British Journal of Management* (Vol. 14).
- Upstill-Goddard J, Glass J, Dainty A.R.J, & Nicholson, I. (2012). Integrating responsible sourcing in the construction supply chain. In S. D. Smith (Ed.), *Proceedings of 28th Annual ARCOM Conference* (pp. 1311–1319). Association of Researchers in Construction Management.
- Vitkauskaitė, E., & Gatautis, R. (2008). e-Procurement perspectives in construction sector SMEs. *Journal of Civil Engineering and Management*, 14(4), 287–294. <https://doi.org/10.3846/1392-3730.2008.14.28>
- Wang, M., Wang, C. C., Sepasgozar, S., & Zlatanova, S. (2020). A systematic review of digital technology adoption in off-site construction: Current status and future direction towards industry 4.0. *Buildings*, 10(11), 1–29. <https://doi.org/10.3390/buildings10110204>
- Wedawatta, G., Ingirige, B., & Amaratunga, D. (2010). Building up resilience of construction sector SMEs and their supply chains to extreme weather events. In *International Journal of Strategic Property Management* 14(4), 362–375. <https://doi.org/10.3846/ijspm.2010.27>
- Wirahadikusumah, R., Abduh, M., & Messah, Y. (2020). Framework for Sustainable Procurement - Identifying Elements for Construction Works. *Applied Mechanics and Materials*, 897, 245–249. <https://doi.org/10.4028/www.scientific.net/amm.897.245>
- Xia, B., Olanipekun, A., Chen, Q., Xie, L., & Liu, Y. (2018). Conceptualising the state of the art of corporate social responsibility (CSR) in the construction industry and its nexus to sustainable development. *Journal of Cleaner Production*, 195, 340–353. <https://doi.org/10.1016/j.jclepro.2018.05.157>
- Yu, A. T. W., Yevu, S. K., & Nani, G. (2020). Towards an integration framework for promoting electronic procurement and sustainable procurement in the construction industry: A systematic literature review. *Journal of Cleaner Production*, 250. <https://doi.org/10.1016/j.jclepro.2019.119493>