Sustainable Procurement Practices and Supplier Compliance in Emerging Markets

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Abstract

Sustainable procurement has moved from a peripheral concern of corporate social responsibility to a central element of supply chain strategy. Buying organisations, both public and private, increasingly expect their suppliers to meet environmental, social and ethical standards alongside traditional requirements of cost, quality and delivery. Emerging markets occupy a pivotal position in this shift: they host a large and growing share of global manufacturing and sourcing activity, yet they are frequently characterised by weak regulatory enforcement, institutional voids, resource-constrained small and medium-sized enterprises (SMEs) and complex informal supply networks. This paper reviews the foundational literature published up to 2019 on sustainable procurement practices and supplier compliance in emerging markets, including 89 related and semi-related peer studies on procurement, supply chain governance, compliance, auditing, safety and sector practice in emerging economies. Drawing on a structured narrative review of peer-reviewed studies, policy reports and international standards, it synthesises the main conceptual foundations, identifies the principal challenges that inhibit supplier compliance, and examines the opportunities that are emerging to strengthen sustainable procurement outcomes. The review finds that compliance-oriented approaches based on codes of conduct and third-party auditing have produced limited and uneven results, largely because they fail to address the capability gaps, cost pressures and multi-tier opacity that define emerging-market supply bases. In contrast, collaborative, capability-building and institutionally embedded approaches show greater promise. The paper proposes an integrative framework linking institutional pressures, buyer practices, supplier capabilities and enabling mechanisms to compliance outcomes, and it outlines an agenda for future research and practice.

Keywords: sustainable procurement; supplier compliance; emerging markets; supplier codes of conduct; sustainable supply chain management; institutional theory; capability building

1. Introduction

Procurement shapes a large portion of an organisation's environmental and social footprint. For many manufacturers and retailers, the majority of greenhouse gas emissions, water use and labour-

related risks lie not in their own operations but upstream, among first-tier and lower-tier suppliers. Governments are equally significant buyers: public procurement accounts for an estimated 12 to 20 per cent of gross domestic product in many economies, giving the state considerable leverage to steer markets towards more sustainable outcomes (UNEP, 2017). It is therefore unsurprising that sustainable procurement, broadly understood as the integration of environmental, social and economic considerations into purchasing decisions across the whole life cycle of goods and services, has become a prominent topic for scholars, practitioners and policymakers (Walker & Brammer, 2009; Meehan & Bryde, 2011).

Within emerging markets, conceptual work on strategic procurement optimisation in oil and gas, inventory availability, contract negotiation and vendor governance, and supply chain risk management for EPC and gas processing projects shows that procurement is increasingly framed as a lever for risk control and accountability as well as cost (Agbabiaka et al., 2019; Okonkwo et al., 2018a; Okonkwo et al., 2018b; Okonkwo et al., 2019).

The adoption of the United Nations 2030 Agenda for Sustainable Development in 2015, and in particular Sustainable Development Goal (SDG) 12.7 on promoting sustainable public procurement practices, gave the field fresh momentum (United Nations, 2015). The publication of ISO 20400:2017, the first international guidance standard on sustainable procurement, further signalled the institutionalisation of the concept (ISO, 2017). At the same time, high-profile failures in global supply chains, most notably the 2013 Rana Plaza building collapse in Bangladesh, which killed more than 1,100 garment workers, exposed the gap between the sustainability commitments made by global buyers and the conditions that prevail in supplier facilities (Huq, Stevenson, & Zorzini, 2014).

Emerging markets sit at the centre of this tension. Countries such as China, India, Bangladesh, Vietnam, Brazil, Mexico, Indonesia, Nigeria and South Africa supply a large proportion of the world's manufactured goods, agricultural commodities and extracted raw materials. They are also domestic markets in their own right, with growing public and private procurement budgets. Yet these economies often display what Khanna and Palepu (2010) describe as institutional voids: the absence or weakness of the intermediaries, regulatory systems and contract-enforcing mechanisms that underpin market transactions in advanced economies. Such conditions complicate both the design of sustainable procurement policies and the achievement of supplier compliance with them (Silvestre, 2015).

The significance of these conditions is visible across several sectors that dominate emerging-market procurement. In energy and infrastructure, procurement strategy, vendor governance, supply chain risk management and risk-based process engineering determine plant uptime, cost control and regulatory exposure (Agbabiaka et al., 2019; Asibor & Isong, 2019; Okonkwo et al., 2018a; Okonkwo et al., 2019). In pharmaceuticals, traceability and chain-of-custody integrity shape access to safe medicines (Aneke & Adesemoye, 2019). In agriculture, access to agribusiness finance and entrepreneurial competencies determine whether rural enterprises can participate in

more demanding value chains (Michael & Ogunsola, 2019a; Michael & Ogunsola, 2019b). Public infrastructure delivery, including healthcare facilities and affordable housing, adds a further layer of public accountability to procurement decisions (Aminu-Ibrahim et al., 2018; Aminu-Ibrahim et al., 2019; Gil-Ozoudeh et al., 2018; Nwafor et al., 2019b).

Despite a rapidly expanding body of research on sustainable supply chain management (SSCM), much of the foundational work was developed in, and about, organisations based in North America and Western Europe (Seuring & Müller, 2008; Carter & Rogers, 2008). Studies explicitly focused on emerging markets have grown in number since around 2010, but they remain fragmented across sectors, countries and theoretical traditions. There is consequently a need to consolidate what is known about how sustainable procurement operates in emerging-market contexts, why supplier compliance so often falls short, and what avenues exist for improvement.

This paper addresses that need through a review of the literature available up to 2019. It pursues three objectives: (1) to clarify the conceptual foundations of sustainable procurement and supplier compliance as they apply to emerging markets; (2) to identify and categorise the principal challenges that constrain supplier compliance; and (3) to examine the opportunities, including governance innovations, capability-building approaches and technological developments, that may enable more effective outcomes. The remainder of the paper is organised as follows. Section 2 describes the research method. Section 3 presents the results and discussion, covering the conceptual foundations, challenges and opportunities identified in the literature, a conceptual model with research propositions, and implications for practice, policy and theory. Section 4 concludes and sets out directions for future research.

2. Research Method

The paper adopts a structured narrative review approach, informed by the principles of evidence-informed management review proposed by Tranfield, Denyer and Smart (2003). A fully systematic review with meta-analysis was judged unsuitable given the conceptual heterogeneity of the field, the diversity of research designs and the importance of policy and practitioner literature alongside academic studies. Nevertheless, the review followed explicit steps to enhance transparency and rigour.

Relevant literature was identified through searches of major academic databases, including Scopus, Web of Science, Emerald Insight and ScienceDirect, using combinations of terms such as "sustainable procurement", "sustainable purchasing", "green procurement", "socially responsible sourcing", "supplier compliance", "supplier code of conduct", "sustainable supply chain management" and "emerging markets", "emerging economies", "developing countries" or the names of specific countries. Searches were supplemented by backward and forward citation tracking of key articles and by a review of reports from international organisations, including the United Nations Environment Programme (UNEP), the International Labour Organization (ILO), the World Bank and the International Organization for Standardization (ISO).

Studies were included if they (a) addressed sustainable procurement, supplier sustainability management or supplier compliance; (b) examined, wholly or substantially, organisations or supply chains located in emerging or developing economies, or offered conceptual insights directly applicable to them; and (c) were published in English up to the end of 2019. Purely technical studies of supplier selection algorithms without substantive engagement with sustainability or compliance issues were excluded. The retained literature was analysed thematically: recurring themes were coded inductively, grouped into higher-order categories of challenges and opportunities, and then related to established theoretical perspectives.

To broaden the evidence base beyond the foundational literature, the review then screened a consolidated list of more than 1,000 peer studies spanning procurement, supply chain management, risk governance, regulatory compliance and sector practice, most of them focused on African and other emerging economies. Only studies published in or before 2019 were eligible, which left 108 candidates. Each study was assessed for its relevance to sustainable procurement, supplier management or compliance, either directly (related studies) or through adjacent mechanisms such as internal audit, occupational safety, contract governance, digital traceability and workforce capability (semi-related studies). A total of 89 studies were retained and coded thematically alongside the foundational literature.

3. Results and Discussion

This section presents the results of the review and discusses their meaning. It first sets out the conceptual and theoretical foundations, then examines the challenges that constrain supplier compliance and the opportunities for strengthening sustainable procurement in emerging markets. It then integrates these findings into a conceptual model, discusses them and sets out implications for practice, policy and theory.

Sustainable procurement has been defined in numerous ways, reflecting its roots in several disciplines. Most definitions draw on the triple bottom line concept (Elkington, 1997), which holds that organisations should balance economic, environmental and social performance. Walker and Brammer (2009) characterise sustainable procurement as the pursuit of sustainable development objectives through the purchasing and supply process. ISO 20400:2017 frames it as procurement that has the most positive environmental, social and economic impacts possible over the entire life cycle. Related terms, including green purchasing, environmentally preferable purchasing, socially responsible purchasing and ethical sourcing, typically emphasise one dimension of sustainability rather than all three (Ahi & Searcy, 2013).

Sustainable procurement is closely linked to, but narrower than, sustainable supply chain management. Seuring and Müller (2008) define SSCM as the management of material, information and capital flows, and cooperation among supply chain companies, while taking into account goals from all three dimensions of sustainable development, derived from customer and stakeholder requirements. Procurement represents the point at which the buying organisation's sustainability

goals are translated into supplier selection criteria, contract terms, performance expectations and ongoing supplier management. It is thus the primary mechanism through which sustainability requirements are transmitted upstream.

The scope of sustainable procurement also extends to the materials and designs that buyers specify. Evaluations of locally sourced building materials for low-income housing, green corrosion inhibitors derived from agricultural extracts, climate-responsive building envelope design and traditional versus contemporary building morphologies in Nigeria show how procurement specifications can embed resource efficiency and local sourcing at the design stage (Atta et al., 2018; Nwafor et al., 2019c; Nwafor, Uduokhai, Giloid, & Aransi, 2018; Nwafor, Uduokhai, Ifechukwu, et al., 2018).

Supplier compliance refers to the extent to which suppliers conform to the sustainability requirements set by buyers, regulators or voluntary standards. These requirements are commonly codified in supplier codes of conduct, which typically cover labour rights (for example, prohibitions on child and forced labour, working-hour limits, minimum wages and freedom of association), health and safety, environmental management, anti-corruption and business ethics (Jiang, 2009). Compliance is usually verified through self-assessment questionnaires, second-party audits conducted by the buyer, third-party audits by commercial auditing firms, or certification against standards such as SA8000, ISO 14001 or sector-specific schemes.

The literature distinguishes between two broad governance approaches to achieving supplier compliance (Gimenez & Sierra, 2013; Lund-Thomsen & Lindgreen, 2014). The first, often termed the compliance or assessment approach, relies on setting standards, monitoring supplier performance and applying sanctions, including termination of business, when violations are found. The second, the cooperation or collaboration approach, emphasises joint problem-solving, supplier training, technical assistance, information sharing and long-term relationships aimed at building suppliers' capabilities to meet sustainability requirements. A growing body of evidence suggests that these approaches are complementary rather than mutually exclusive, but that reliance on assessment alone tends to produce superficial or temporary conformance (Locke, Qin, & Brause, 2007; Sancha, Gimenez, & Sierra, 2016).

Evidence from emerging-market energy procurement reinforces this view, showing that structured vendor governance and negotiation frameworks produce more durable cost and performance gains than transactional purchasing (Okonkwo et al., 2018a; Okonkwo et al., 2019). Relationship-based models in emerging-market distribution, trade finance and banking similarly suggest that long-term collaboration is a source of performance across sectors (Agboada, Ezeako, Okoli, & Ibeh, 2018; Ezeako et al., 2019).

Emerging markets are economies in transition towards higher income levels and deeper integration into the global economy. While highly diverse, they share several features relevant to sustainable procurement. These include rapid industrialisation and urbanisation; a large share of SMEs and

informal enterprises in the supply base; variable and often weak enforcement of environmental and labour regulations; limited availability of independent verification bodies, credit and market information; and significant exposure to cost-driven sourcing by global buyers (Khanna & Palepu, 2010; Silvestre, 2015). Many emerging markets are also home to domestic public procurement systems that are undergoing reform, frequently with support from multilateral development banks, but which continue to face problems of capacity, transparency and corruption (UNEP, 2017; Akenroye, Oyegoke, & Eyo, 2013).

Regional evidence from Sub-Saharan Africa illustrates these features. Reviews of budget compliance and statutory reporting identify persistent gaps in public financial frameworks, while studies of reconciliation controls and data-driven risk evaluation highlight weak control environments in many emerging-market organisations (Akomolafe & Agu, 2019b; Dogbatsey & Ebhojie, 2018; Dogbatsey et al., 2019). Work on tax governance, cross-border compliance analytics and transfer pricing risk shows that multinational supply chains in these markets face complex and uneven compliance obligations (Lawal & Oduleye, 2018b; Lawal & Oduleye, 2019a).

Silvestre (2015) argues that emerging economies are characterised by environmental turbulence and institutional voids that make the pursuit of sustainability more uncertain and costly than in developed economies. Supply chains in such contexts may follow non-linear sustainability trajectories, advancing in some periods and regressing in others as institutional conditions change. This insight underlines that strategies developed for stable, well-regulated environments cannot simply be transplanted into emerging markets.

Several theoretical perspectives have been applied to explain sustainable procurement and supplier compliance in emerging markets. The principal lenses are summarised in Table 1.

Table 1. Principal theoretical lenses in the reviewed literature

Theory	Core proposition	Application to supplier compliance in emerging markets
Institutional theory (DiMaggio & Powell, 1983)	Organisations adopt practices in response to coercive, normative and mimetic pressures to gain legitimacy.	Explains adoption of codes and certifications by buyers and suppliers; highlights decoupling between formal adoption and actual practice where enforcement is weak (Zhu, Sarkis, & Lai, 2013; Kauppi & Hannibal, 2017).
Stakeholder theory (Freeman, 1984)	Firms must address the interests of all groups that affect or are affected by them.	Accounts for pressure from NGOs, consumers, investors and media on global buyers, which is then passed to emerging-market suppliers (Busse et al., 2017).

Theory	Core proposition	Application to supplier compliance in emerging markets
Resource-based view (Barney, 1991)	Competitive advantage derives from valuable, rare and inimitable resources.	Frames supplier sustainability capabilities as resources that can be developed; explains why capability-poor suppliers struggle to comply (Gold, Seuring, & Beske, 2010).
Transaction cost and agency theories	Governance choices reflect costs of monitoring, information asymmetry and opportunism.	Explains reliance on audits and contracts, and the problem of suppliers concealing non-compliance (Jiang, 2009).

Source: Author's synthesis of the reviewed literature.

Institutional theory has been especially influential. It helps explain why organisations in emerging markets adopt sustainability codes and certifications in response to pressure from foreign customers, governments and industry bodies, and also why such adoption may be ceremonial, with formal policies decoupled from day-to-day practice when enforcement is weak (Zhu, Sarkis, & Lai, 2013). The resource-based view, in turn, shifts attention from external pressure to the internal capabilities that suppliers need in order to comply, providing a theoretical basis for supplier development initiatives.

Governance perspectives complement these lenses. Work on integrated governance and compliance strategies, risk-based internal control models, strategic accounting systems for financial transparency and data-driven executive decision systems emphasises that compliance outcomes depend on how accountability is designed into organisational systems rather than on any single control (Akomolafe & Agu, 2019a; Akomolafe & Agu, 2019c; Bola-Sadipe et al., 2019; Lawal & Oduleye, 2019b).

The reviewed literature identifies a wide range of barriers to effective sustainable procurement and supplier compliance in emerging markets. For analytical clarity these are grouped into seven categories: institutional and regulatory challenges; economic and commercial pressures; supplier capability constraints; supply chain complexity and visibility; limitations of monitoring and auditing; buyer-side organisational barriers; and occupational health, safety and labour conditions.

Weak enforcement of national environmental and labour laws is the most frequently cited barrier. Even where legislation is comprehensive on paper, under-resourced inspectorates, corruption and political priorities that favour industrial growth can render it ineffective (Silvestre, 2015). In such conditions, private standards imposed by buyers effectively substitute for public regulation, a role for which they were not designed and which they perform imperfectly (Locke, 2013).

Institutional voids also affect sustainable public procurement within emerging markets. Studies of public procurement systems in Africa and Asia report that sustainability criteria are frequently

absent from procurement legislation, or present only as general aspirations without operational guidance (UNEP, 2017). In Nigeria, for example, Akenroye, Oyegoke and Eyo (2013) found that the implementation of green public procurement was constrained by limited awareness among procurement officers, the absence of clear policy direction and the dominance of lowest-price evaluation criteria. Corruption and patronage in public tendering further undermine the credibility of sustainability requirements.

Finally, institutional pressures in emerging markets often operate unevenly. Export-oriented suppliers face intense pressure from foreign buyers, while those serving domestic markets may face little or none. Zhu and Sarkis (2004) and Zhu, Sarkis and Lai (2013) show that Chinese manufacturers' adoption of green supply chain practices was driven strongly by export orientation and foreign customer pressure, implying a two-tier landscape in which sustainability practices diffuse slowly into domestic supply chains.

Regulatory fragmentation adds a further layer of difficulty. Comparative reviews of data protection regulation across jurisdictions, legal and ethical risk in data governance, cross-border tax governance, transfer pricing and global marketing and consumer protection law show that firms operating across emerging markets must reconcile divergent and changing rules (Anichukwueze et al., 2019; Lawal & Oduleye, 2018b; Lawal & Oduleye, 2019a; Mbonu et al., 2018; Mbonu, Aliliele, et al., 2019). Statutory bidding processes in emerging energy markets are often slow and opaque, which raises the cost of compliance and creates openings for rent-seeking (Uchechi et al., 2019). Capital adequacy and risk-weighted asset rules in banking also shape the cost and availability of finance for suppliers seeking to upgrade (Mensah et al., 2019).

A persistent contradiction lies at the heart of global sourcing from emerging markets: buyers simultaneously demand higher sustainability standards and lower prices, shorter lead times and greater flexibility. Suppliers operating on thin margins may perceive compliance as an unfunded mandate. Purchasing practices such as aggressive price negotiation, last-minute order changes and short-term contracts have been shown to increase the likelihood of excessive overtime, subcontracting to unauthorised facilities and other violations (Locke, 2013; Huq, Stevenson, & Zorzini, 2014).

Esfahbodi, Zhang and Watson (2016) document trade-offs between environmental and cost performance among manufacturers in emerging economies, finding that sustainable procurement practices do not automatically translate into cost advantages in the short term. Where buyers are unwilling to share the costs of compliance, through price premiums, longer contracts or co-investment, suppliers have limited incentive to go beyond minimal or symbolic conformance.

Studies of contract negotiation, vendor governance and procurement optimisation in oil and gas confirm that cost reduction remains the dominant procurement objective in many emerging-market organisations (Okonkwo et al., 2018a; Okonkwo et al., 2019). Contractual arrangements in high-value energy service contracts tend to allocate liability and risk to suppliers rather than sharing it

(Uchechi & Ominyi, 2019), and standardised policies and dispute resolution procedures are often needed to contain the financial exposure that follows (Uchechi et al., 2018; Uchechi, 2018).

Many suppliers in emerging markets, particularly SMEs, lack the managerial, technical and financial resources required to implement sustainability management systems. Common gaps include limited knowledge of environmental and social standards, absence of dedicated compliance staff, poor record-keeping, outdated equipment and restricted access to finance for upgrades such as wastewater treatment or building safety improvements (Jorgensen & Knudsen, 2006; Gold, Seuring, & Beske, 2010).

Capability constraints are compounded by the proliferation of overlapping and sometimes contradictory codes of conduct. A supplier serving several international buyers may face multiple codes, audit protocols and reporting formats, leading to so-called audit fatigue and diverting scarce resources from substantive improvement to documentation (Jiang, 2009; Locke, 2013). Mani, Gunasekaran and Delgado (2018) emphasise that, in emerging economies, supplier social sustainability is closely tied to broader issues of workforce development, health and community welfare, which require investment that many suppliers cannot fund alone.

Work on small enterprises and operations in emerging economies points to the same capability gaps. Resource-constrained organisations often lack standard operating procedures, process discipline and the capacity to absorb digital transformation, which makes it difficult to translate customer requirements into daily workflows (Agboada et al., 2019; Agboada, Ezeako, Okoli, & Uzondu, 2018). Limited access to finance and weak entrepreneurial competencies further constrain rural enterprises and smallholder producers (Michael & Ogunsola, 2019a; Michael & Ogunsola, 2019b). Evidence on the adoption of web-based payment portals, marketing communications and telecommunications deployment in Sub-Saharan Africa shows that digital infrastructure and adoption barriers also limit suppliers' ability to participate in electronic procurement and reporting (Agyei et al., 2018; Agyei et al., 2019; Amayo & Popoola, 2017b).

Workforce capability is a related constraint. Studies of competency frameworks and onboarding, talent and performance management, global technology talent development in emerging markets, industry-academia collaboration for technical learning centres and digital learning in low-connectivity environments show that shortages of skilled staff limit the ability of suppliers to operate compliance systems (Nwangwu et al., 2019; Ukadike, 2018; Ukadike, 2019; Unamma et al., 2018; Wikiri, 2019).

Most sustainable procurement programmes focus on first-tier suppliers, with whom buyers have direct contractual relationships. However, many of the most severe environmental and social risks occur further upstream, among raw material producers, component makers, home-based workers and informal subcontractors (Tachizawa & Wong, 2014). Multi-tier supply chains in emerging markets are often long, fragmented and opaque, involving intermediaries and traders who have little incentive to disclose their sources.

Grimm, Hofstetter and Sarkis (2014) identify the management of sub-suppliers as a critical and under-researched challenge, noting that buyers' ability to influence lower tiers depends on factors such as power, proximity and the willingness of first-tier suppliers to cascade requirements. Busse et al. (2017) argue that limited supply chain visibility is a key source of sustainability risk and propose that buyers draw on external stakeholders, such as NGOs and local communities, to extend the boundary of what they can observe. Unauthorised subcontracting, which was implicated in the Rana Plaza disaster and other incidents, illustrates how compliance at audited first-tier facilities can coexist with serious violations elsewhere in the chain.

The pharmaceutical sector offers a particularly clear illustration of the consequences of limited visibility. Weak traceability and chain-of-custody controls allow substandard and falsified medicines to enter distribution, with implications for patient safety (Aneke & Adesemoye, 2019). In infrastructure sectors, remote inspection technologies such as unmanned aerial vehicles have been proposed to improve visibility over dispersed assets that are otherwise difficult to monitor (Dagodzo, 2018a; Dagodzo, 2018b).

Social and environmental auditing has been the dominant instrument for verifying supplier compliance, yet its effectiveness is widely questioned. Locke, Qin and Brause (2007), in a study of Nike's supplier monitoring programme, found that monitoring alone produced limited improvements in working conditions over time. Audits are often brief, announced in advance and focused on documentation rather than actual practice. Suppliers have been reported to maintain duplicate records, coach workers on how to answer auditors' questions and temporarily alter conditions during audit visits (Jiang, 2009; Locke, 2013).

The commercial auditing industry itself faces conflicts of interest, as audits are frequently paid for by suppliers or buyers with an interest in favourable outcomes. Moreover, audits provide a snapshot of conditions at a single point in time and offer little insight into the root causes of non-compliance. The Rana Plaza collapse, in which several factories in the building had reportedly been audited, became emblematic of the limits of audit-based governance (Huq, Stevenson, & Zorzini, 2014).

Research on internal audit and assurance in emerging markets points to similar weaknesses. Audit quality depends on risk-based planning, technology-enabled risk assessment and effective internal control, all of which are unevenly developed (Akomolafe & Agu, 2018; Akomolafe & Agu, 2019a; Akomolafe & Agu, 2019b). Security audit, insider threat modelling and risk-based cybersecurity assurance show that the reliability of compliance evidence held in information systems cannot be assumed (Akeju et al., 2018; Dosunmu & Ogundele, 2019; Fadayomi et al., 2019). Alternatives to periodic audits are emerging: predictive compliance monitoring using complaint data and automated log analytics with incident response illustrate how continuous signals can detect problems between audit visits (Adeyelu, 2018; Mbonu, Iwuanyanwu, et al., 2019).

Barriers also exist within buying organisations. Walker, Di Sisto and McBain (2008) and Meehan and Bryde (2011) identify the lack of top management commitment, inadequate budgets, limited sustainability expertise among procurement staff and performance metrics that reward cost savings rather than sustainability outcomes. Internal misalignment is common: corporate social responsibility departments may set ambitious supplier standards while sourcing teams continue to be evaluated solely on price and delivery, sending contradictory signals to suppliers (Hoejmose, Brammer, & Millington, 2013).

In the public sector, procurement officers in emerging markets often operate under legal frameworks that prioritise lowest-cost bids and fear audit scrutiny if they award contracts on other grounds. Brammer and Walker (2011), in an international comparative study, found that sustainable public procurement practice varied considerably across regions and was weakest where policy support and training were limited.

Studies of enterprise decision-making identify further organisational barriers. Financial analytics and executive decision systems are rarely designed to surface sustainability outcomes (Lawal & Oduleye, 2018a; Lawal & Oduleye, 2019b), and weak governance of enterprise platforms, IT support across distributed offices and identity and access management limits the reliability of supplier data that procurement teams depend on (Anyanwu, 2019; Badmus et al., 2019b; Oshoba et al., 2019).

Labour standards and occupational health and safety are central to supplier codes of conduct, yet they remain among the most difficult areas in which to secure compliance in emerging markets. Studies of industrial and construction operations document persistent hazards, from heat stress in extreme environments to high-risk drilling operations (Arumosoye & Obriki, 2018; Nwangwu et al., 2018). Reviews of hazard identification in urban construction and of near-miss data utilisation show that safety systems frequently exist on paper but are inconsistently applied (Arumosoye & Obriki, 2019; Obogo et al., 2019).

The literature emphasises that leadership and culture, rather than documentation alone, determine safety performance. Leadership-driven safety culture transformation and management safety walkthroughs are consistently associated with better outcomes (Obogo et al., 2019a; Obriki & Arumosoye, 2019). Governance models for multi-contractor projects and data-driven risk control show how responsibility for worker safety must be shared across buyers, principal contractors and subcontractors (Obogo et al., 2019b; Obriki & Arumosoye, 2018), and adaptive safety management models for developing-economy contexts offer transferable lessons (Adeyelu, 2019). Asset integrity and reliability management in oil and gas, including risk-based inspection, condition-based maintenance and integrity assurance of offshore systems, is a further area in which supplier and contractor performance directly affects worker and environmental safety (Adaramola et al., 2018; Gideon et al., 2019; Obetta & Ninduwezuor-Ehiobu, 2018; Obetta & Ninduwezuor-Ehiobu, 2019; Obetta, 2018; Obetta, 2019). For buyers, these findings imply that supplier

compliance on labour and safety requires investment in supplier leadership and systems, not only inspection.

Table 2. Summary of key challenges to supplier compliance in emerging markets

Category	Main manifestations	Representative sources
Institutional and regulatory	Weak enforcement; institutional voids; corruption; uneven pressure between export and domestic sectors	Khanna & Palepu (2010); Silvestre (2015); Zhu, Sarkis, & Lai (2013)
Economic and commercial	Price pressure; short-term contracts; unshared compliance costs; cost-environment trade-offs	Locke (2013); Esfahbodi, Zhang, & Watson (2016)
Supplier capability	Limited skills, systems and finance, especially in SMEs; audit fatigue from multiple codes	Jorgensen & Knudsen (2006); Jiang (2009); Mani et al. (2018)
Supply chain complexity	Multi-tier opacity; informal subcontracting; weak sub-supplier influence	Tachizawa & Wong (2014); Grimm et al. (2014); Busse et al. (2017)
Monitoring and auditing	Superficial, announced audits; falsified records; conflicts of interest; snapshot nature	Locke, Qin, & Brause (2007); Huq et al. (2014)
Buyer-side organisation	Weak leadership commitment; misaligned incentives; low staff expertise; lowest-price rules in public tenders	Walker et al. (2008); Meehan & Bryde (2011); Brammer & Walker (2011)
Health, safety and labour	Hazardous conditions; paper-based safety systems; weak contractor and subcontractor governance	Huq et al. (2014); Obogo et al. (2019a); Obriki & Arumosoye (2019)

Source: Author's synthesis of the reviewed literature.

Alongside these challenges, the literature points to several developments and practices that offer opportunities to improve sustainable procurement and supplier compliance in emerging markets. These are grouped into eight areas.

The most consistent finding in the reviewed literature is that collaborative approaches, which combine clear standards with investment in supplier capabilities, outperform purely compliance-based approaches. Locke (2013) shows that factories in which buyers worked jointly with management on root-cause analysis, production planning and human resource practices achieved more durable improvements in labour conditions than those subject only to auditing. Gimenez and Sierra (2013) and Sancha, Gimenez and Sierra (2016) similarly find that collaboration has a

stronger association with supplier sustainability performance than assessment alone, while assessment remains useful as a foundation.

Supplier development activities identified in the literature include training on standards and management systems, technical assistance for cleaner production, shared improvement plans with milestones, supplier recognition schemes and preferential treatment for high performers, such as longer contracts or increased order volumes (Ageron, Gunasekaran, & Spalanzani, 2012; Gimenez & Tachizawa, 2012). For SMEs in emerging markets, such support can address the capability gaps identified above and convert sustainability requirements from a burden into an opportunity for upgrading.

Standard operating procedures and digital transformation frameworks provide practical vehicles for supplier development in emerging markets (Agboada et al., 2019; Agboada, Ezeako, Okoli, & Uzondu, 2018), while industry-academia collaboration and competency-based training offer models for building the skills that compliance requires (Nwangwu et al., 2019; Ukadike, 2018).

Recognition that buyers' own purchasing practices can drive non-compliance has prompted calls for responsible purchasing. This involves aligning commercial terms with sustainability expectations, for example by improving forecasting accuracy, avoiding last-minute changes, allowing realistic lead times, offering longer-term contracts and incorporating the cost of compliance into price negotiations (Locke, 2013). Integrating sustainability metrics into the performance evaluation of procurement staff, and linking supplier scorecards to sourcing decisions, helps to resolve the internal misalignment discussed above (Pagell & Wu, 2009). Exemplar firms studied by Pagell and Wu (2009) treated suppliers as long-term partners whose continuity was essential, which encouraged mutual investment in sustainability.

Frameworks for strategic procurement optimisation, contract negotiation and vendor governance in emerging energy markets show how commercial terms can be redesigned to reward performance rather than only penalise failure (Okonkwo et al., 2018a; Okonkwo et al., 2019). Liability mitigation in energy service contracts and streamlined statutory bidding point in the same direction, reducing the transaction costs that discourage suppliers from investing in compliance (Uchechi & Ominyi, 2019; Uchechi et al., 2019).

Collective approaches can reduce duplication, pool resources and increase leverage over suppliers. Industry-wide platforms that harmonise codes and share audit results, such as initiatives in the electronics, apparel and food sectors, help to address audit fatigue and lower compliance costs for suppliers. Following Rana Plaza, the Accord on Fire and Building Safety in Bangladesh introduced legally binding commitments by brands, independent inspections, public disclosure of findings and worker participation in safety committees, representing a significant departure from voluntary, firm-level auditing (Huq, Stevenson, & Zorzini, 2014). Multi-stakeholder initiatives involving NGOs, trade unions and governments can also contribute local knowledge and legitimacy that individual buyers lack (Lund-Thomsen & Lindgreen, 2014).

Governments in emerging markets have significant scope to use their purchasing power to drive sustainable practices among domestic suppliers. UNEP's (2017) global review reports that a growing number of countries in Asia, Latin America and Africa had adopted sustainable public procurement policies, action plans or criteria for priority product categories by the late 2010s. Brazil, China, India, Mexico and South Africa, among others, had introduced elements such as eco-labelling schemes, green procurement lists and preferential procurement policies supporting social objectives. South Africa's Preferential Procurement Policy Framework, for instance, illustrates how public procurement can be used to pursue social goals such as economic inclusion.

Such policies create predictable demand for sustainable products and services, help to build domestic markets for certified suppliers and send coherent signals to industry. The ISO 20400 standard provides a widely recognised reference framework that public and private organisations in emerging markets can adapt to their own contexts (ISO, 2017). Training procurement officers and revising legal frameworks to permit life-cycle costing and best-value evaluation are important enabling steps (Akenroye, Oyegoke, & Eyo, 2013).

Research on public infrastructure delivery in Africa offers practical guidance. Analytical frameworks for efficient public infrastructure delivery and studies of the affordability and sustainability of urban housing show how sustainability and accountability can be built into public contracts (Gil-Ozoudeh et al., 2018; Nwafor et al., 2019b), and architectural interventions for urban resilience highlight the climate dimension of public procurement (Nwafor et al., 2019a). Studies of healthcare infrastructure highlight sustainable diagnostic laboratory models, capital project delivery for high-risk facilities, laboratory planning, regulatory-compliant design and diagnostic quality systems (Aminu-Ibrahim et al., 2018; Aminu-Ibrahim et al., 2019; Ogbete et al., 2018; Ogbete et al., 2019; Yusuf & Abdulrazaq, 2018). Work on health financing, provider payment reform, disease surveillance data quality and laboratory information systems shows that public health procurement depends on financing and information systems as well as purchasing rules (Abdulrazaq et al., 2019; Ekemezie et al., 2018; Ilodigwe & Adesemoye, 2019a; Ilodigwe & Adesemoye, 2019b).

Advances in digital technology create new possibilities for monitoring and verifying supplier performance. Mobile-based worker voice tools allow workers to report grievances anonymously and in real time, providing information that complements periodic audits. Satellite imagery and remote sensing can detect deforestation and land-use change linked to commodity supply chains. Supplier data platforms enable the collection, aggregation and sharing of sustainability information across multiple buyers.

Blockchain technology has attracted particular attention for its potential to create tamper-resistant records of product provenance across multiple tiers. Saberi, Kouhizadeh, Sarkis and Shen (2019) and Kshetri (2018) suggest that blockchain could improve traceability, reduce information asymmetry and support the verification of sustainability claims. Both studies caution, however, that significant barriers remain, including the cost of implementation, the need for reliable data

entry at the point of origin, interoperability issues and the limited digital readiness of many emerging-market suppliers. Technology is therefore best viewed as an enabler of, rather than a substitute for, robust governance and supplier engagement.

In emerging-market settings, the security and governance of the underlying data systems are prerequisites for such tools. Secure identity and access management for federated systems, comparative data protection regimes, risk-based cybersecurity assurance and energy-efficient data centre resource allocation all bear on whether shared supplier data platforms can be trusted and operated sustainably (Ahmed & Odejobi, 2018b; Fadayomi et al., 2019; Mbonu, Aliliele, et al., 2019; Oshoba et al., 2019).

Analytics play a similar enabling role. Predictive maintenance and condition monitoring, inventory availability models and risk-based process engineering in energy infrastructure show how data can improve both reliability and compliance in supplier operations (Adaramola et al., 2018; Asibor & Isong, 2019; Okonkwo et al., 2018b).

Sustainable procurement also presents commercial opportunities for emerging-market suppliers. Firms that demonstrate strong environmental and social performance may gain preferred-supplier status, access to premium markets and protection from reputational risk. Evidence from emerging economies indicates that supplier social sustainability can enhance supply chain performance through improved productivity, quality and worker retention (Mani, Gunasekaran, & Delgado, 2018). Cleaner production and resource efficiency measures can reduce energy, water and material costs over time, although initial investment requirements may be substantial (Esfahbodi, Zhang, & Watson, 2016). Dubey et al. (2017) argue that sustainable supply chain practices, when embedded in organisational culture and supported by top management, can contribute to both sustainability and competitive outcomes.

Studies of solar power integration in small-scale manufacturing in Nigeria and hybrid solar installations in developing economies show how suppliers can reduce energy costs and emissions together (Sunday & Omoegun, 2018; Sunday & Omoegun, 2019), supported by solar radiation estimation for renewable energy planning (Odejobi & Ahmed, 2018a).

Environmental compliance in supply chains also depends on the ability to assess and manage environmental risk. Data-driven frameworks for predicting subsurface contamination pathways, spatially explicit risk modelling at data-limited remediation sites and hydrological modelling of climate-induced watershed vulnerability provide tools that buyers and regulators can apply to suppliers operating in environmentally sensitive areas (Azeez & Badmus, 2018; Badmus & Olamide, 2019; Lamidi & Olamide, 2018). Architectural interventions for flood resilience in African cities show how climate risk can be factored into infrastructure procurement (Nwafor et al., 2019a).

Sector-specific evidence shows how the general opportunities identified above take shape in practice. In the energy sector, hydrogen integration in national grids, voltage control with distributed generation and solar integration in manufacturing illustrate the procurement questions raised by cleaner energy systems (Oshevire et al., 2017; Shittu et al., 2019; Sunday & Omoegun, 2018), while reliability management of fired heaters, boilers and offshore mooring systems shows the importance of contractor competence in upstream operations (Obetta & Ninduwezuor-Ehiobu, 2019; Obetta, 2019).

In pharmaceuticals and health, traceability frameworks for distribution and regulatory-compliant laboratory design provide models for supplier quality management that are directly relevant to sustainable procurement (Aneke & Adesemoye, 2019; Ogbete et al., 2019).

In agriculture, improving access to agribusiness finance and strengthening entrepreneurial competencies offer routes to make sourcing from smallholders and rural enterprises more sustainable and inclusive (Michael & Ogunsola, 2019a; Michael & Ogunsola, 2019b).

In finance and governance, internal audit quality, risk-based internal controls, integrated governance, capital adequacy, financial transparency, tax governance and transfer pricing models support the integrity of procurement and supplier payments (Akomolafe & Agu, 2018; Akomolafe & Agu, 2019a; Akomolafe & Agu, 2019c; Bola-Sadipe et al., 2019; Lawal & Oduleye, 2018b; Lawal & Oduleye, 2019a; Mensah et al., 2019). Trade finance and relationship banking frameworks for emerging markets may also improve suppliers' access to finance for sustainability upgrades (Agboada, Ezeako, Okoli, & Ibeh, 2018; Ezeako et al., 2019).

Table 3. Summary of key opportunities

Opportunity area	Key mechanisms	Representative sources
Collaboration and supplier development	Training, technical assistance, joint improvement plans, rewards for performance	Locke (2013); Gimenez & Sierra (2013); Sancha et al. (2016)
Responsible purchasing	Fair pricing, stable orders, longer contracts, aligned internal incentives	Pagell & Wu (2009); Locke (2013)
Multi-stakeholder and industry initiatives	Harmonised codes, shared audits, binding agreements, worker participation	Lund-Thomsen & Lindgreen (2014); Huq et al. (2014)
Public policy and SPP	SPP policies, eco-labels, life-cycle costing, ISO 20400 guidance	UNEP (2017); ISO (2017); Akenroye et al. (2013)
Digital technologies	Worker voice tools, remote sensing, supplier data platforms, blockchain	Kshetri (2018); Saberi et al. (2019)

Opportunity area	Key mechanisms	Representative sources
Supplier business case	Market access, efficiency gains, productivity, risk reduction	Mani et al. (2018); Dubey et al. (2017)
Environmental risk and compliance	Contamination and watershed risk modelling; climate-resilient infrastructure	Azeez & Badmus (2018); Badmus & Olamide (2019); Nwafor et al. (2019a)
Sector perspectives	Cleaner energy systems; pharmaceutical traceability; agribusiness finance; financial integrity	Shittu et al. (2019); Aneke & Adesemoye (2019); Michael & Ogunsola (2019a)

Source: Author's synthesis of the reviewed literature.

The synthesis suggests that supplier compliance in emerging markets is best understood not as a binary outcome determined by buyer monitoring, but as the product of interactions among four sets of factors: institutional pressures, buyer practices, supplier capabilities and enabling mechanisms. Figure 1 presents an integrative conceptual model that links these factors to compliance outcomes, and Table 4 describes each element.

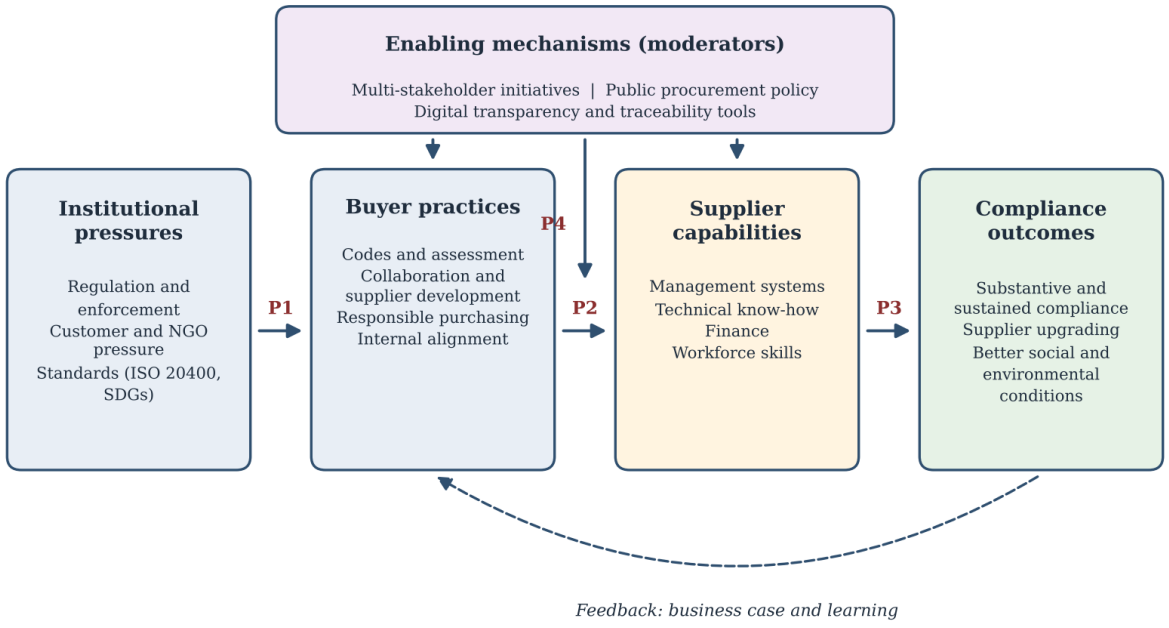


Figure 1. Integrative conceptual model of supplier compliance in emerging markets

Table 4. Elements of the conceptual model

Model element	Components	Expected influence on compliance
Institutional pressures (antecedents)	Regulation and enforcement; customer and NGO pressure; industry norms; international standards (ISO 20400, SDGs)	Create the initial motivation to adopt sustainability requirements; effect is weakened by institutional voids and decoupling
Buyer practices	Codes and assessment; collaboration and supplier development; responsible purchasing; internal alignment	Assessment sets the baseline; collaboration and responsible purchasing convert formal adoption into substantive improvement
Supplier capabilities (mediating)	Management systems; technical know-how; finance; workforce skills	Determine whether suppliers are able, not merely willing, to comply
Enabling mechanisms (moderating)	Multi-stakeholder initiatives; public procurement policy; digital transparency tools	Strengthen visibility, reduce duplication and extend influence to lower tiers
Compliance outcomes	Substantive and sustained compliance; supplier upgrading; improved environmental and social conditions	Reinforce the business case and feed back into buyer and policy decisions

Source: Developed by the author from the reviewed literature.

The model gives rise to four propositions that can guide empirical testing:

- **Proposition 1 (P1).** Institutional pressures increase the adoption of sustainable procurement practices by buyers, but their effect on substantive supplier compliance is weaker where enforcement is limited and institutional voids are pronounced.
- **Proposition 2 (P2).** Collaborative buyer practices, including supplier development and responsible purchasing, have a stronger positive effect on supplier capabilities than assessment-based practices alone.
- **Proposition 3 (P3).** Supplier capabilities mediate the relationship between buyer practices and compliance outcomes, so that buyer practices that do not build capabilities produce largely symbolic compliance.
- **Proposition 4 (P4).** Enabling mechanisms, such as multi-stakeholder initiatives, supportive public procurement policy and transparency technologies, strengthen the effect of buyer practices on supplier capabilities and extend that effect to lower tiers of the supply chain.

A feedback loop completes the model. Where compliance generates tangible benefits, such as preferred-supplier status, efficiency gains or reduced risk, buyers and suppliers are more willing to continue investing, and policymakers gain evidence to support further reform.

Three insights emerge from the synthesis and the conceptual model. First, institutional pressures are a necessary but insufficient condition for compliance. In emerging markets, the gap between formal adoption of codes and actual practice is wide, and institutional theory's concept of decoupling is particularly relevant (Zhu, Sarkis, & Lai, 2013; Kauppi & Hannibal, 2017). Pressure alone tends to produce symbolic responses unless it is accompanied by support that enables suppliers to change.

Second, supplier capabilities play a mediating role. Consistent with the resource-based view, compliance depends on suppliers possessing the managerial, technical and financial resources to meet requirements. Buyer practices that build these capabilities, through collaboration, training and fair commercial terms, are therefore more likely to produce sustained outcomes than practices that merely detect and punish non-compliance (Gold, Seuring, & Beske, 2010; Sancha, Gimenez, & Sierra, 2016).

Third, the effectiveness of buyer practices is shaped by enabling mechanisms that operate beyond the individual buyer-supplier dyad. Multi-stakeholder initiatives, supportive public policy and transparency technologies can address problems, such as audit duplication and multi-tier opacity, that no single buyer can solve alone. This points to the importance of collective and systemic approaches in contexts characterised by institutional voids (Silvestre, 2015; Lund-Thomsen & Lindgreen, 2014).

The emerging-market studies reviewed here add texture to these insights. Work from Sub-Saharan Africa on budget compliance, internal control, audit quality and integrated governance shows that weak control environments within organisations mirror the weak enforcement environments around them (Akomolafe & Agu, 2018; Akomolafe & Agu, 2019c; Dogbatsey & Ebhojie, 2018; Dogbatsey et al., 2019). Studies of safety culture, contractor governance and asset integrity in construction and energy demonstrate that compliance improves when leadership, systems and shared responsibility are in place, which is consistent with the mediating role of capabilities in the model (Obetta, 2019; Obogo et al., 2019a; Obogo et al., 2019b; Obriki & Arumosoye, 2019). Research on procurement, vendor governance and contract risk in energy markets shows that commercial terms can either reinforce or undermine sustainability requirements (Okonkwo et al., 2018a; Okonkwo et al., 2019; Uchechi & Ominyi, 2019).

The discussion also highlights tensions that the literature has not fully resolved. Collaborative approaches require time, trust and investment, yet many buyer-supplier relationships in emerging markets are short-term and price-driven. Collective initiatives reduce duplication but can dilute accountability among participants. Digital transparency tools promise better visibility but depend on reliable data entry, interoperable systems and supplier digital readiness that are often lacking (Kshetri, 2018; Saberi et al., 2019). These tensions suggest that no single mechanism is sufficient and that combinations of approaches, adapted to sector and country context, are required.

For buying organisations, including multinational firms and public agencies, the review suggests the following priorities:

- **Combine assessment with collaboration.** Use codes and audits to establish baselines and identify risks, but invest in supplier development to address root causes.
- **Reform purchasing practices.** Align price, lead-time and contract terms with sustainability expectations, and integrate sustainability into procurement performance metrics.
- **Map and engage lower tiers.** Extend visibility beyond first-tier suppliers through supplier disclosure requirements, traceability systems and partnerships with local stakeholders.
- **Participate in collective initiatives.** Harmonise standards and share audit data with peers to reduce supplier burden and increase leverage.
- **Adapt to context.** Recognise the diversity of emerging markets and tailor requirements and support to local institutional conditions and supplier size.

For suppliers, the review underlines the potential of sustainability performance to open new markets and improve operational efficiency, particularly when pursued through recognised management systems, standard operating procedures and industry networks.

For policymakers in emerging markets, the review highlights the value of embedding sustainability criteria in public procurement law, providing guidance and training for procurement officers, supporting SME access to finance and technical assistance, and strengthening the enforcement of existing environmental and labour regulations. Streamlining statutory bidding processes and harmonising regulatory requirements across jurisdictions would lower compliance costs for suppliers and reduce opportunities for rent-seeking. Public procurement can also be used to create stable demand for suppliers that meet sustainability standards, signalling to the wider market that compliance is rewarded.

The review contributes to theory in three ways. First, it integrates institutional theory and the resource-based view by positioning supplier capabilities as the mechanism through which institutional pressures and buyer practices are translated into substantive compliance. Second, it extends governance perspectives on supply chains by treating enabling mechanisms at the level of industries, governments and technologies as moderators of dyadic buyer-supplier relationships. Third, it highlights the need for theories of sustainable procurement to account for the non-linear and context-dependent trajectories that characterise emerging markets, rather than assuming the relatively stable institutional conditions of developed economies (Silvestre, 2015).

4. Conclusion

This paper has reviewed the literature up to 2019 on sustainable procurement practices and supplier compliance in emerging markets, including 89 related and semi-related peer studies from emerging

economies. It has shown that, although sustainable procurement has become firmly established on corporate and policy agendas, achieving genuine supplier compliance in emerging markets remains difficult. The principal challenges arise from institutional voids and weak enforcement, commercial pressures that conflict with sustainability expectations, limited supplier capabilities, opaque multi-tier supply chains, the inherent weaknesses of audit-based monitoring, misaligned incentives within buying organisations and persistent health and safety risks in supplier operations.

At the same time, the review identifies substantial opportunities. Collaborative and capability-building approaches, responsible purchasing practices, multi-stakeholder initiatives, strengthened public procurement policy and emerging digital technologies all offer pathways to more effective outcomes. The conceptual model proposed in this paper highlights that compliance is best pursued not through pressure and policing alone, but through a combination of clear standards, investment in supplier capabilities and collective mechanisms that address systemic problems. Moving from compliance as a box-ticking exercise towards shared responsibility and mutual capability building represents the most promising direction for both research and practice.

The review identifies several gaps that merit further investigation:

- **Testing the conceptual model.** Survey-based and structural equation modelling studies could test Propositions 1 to 4, in particular the mediating role of supplier capabilities and the moderating role of enabling mechanisms.
- **Geographical balance.** Research has concentrated on China, India and Bangladesh, with comparatively few studies on Sub-Saharan Africa, Central Asia and parts of Latin America. Comparative studies across emerging markets would help to distinguish context-specific from general findings.
- **Supplier perspectives.** Much of the literature adopts the viewpoint of the buying firm. More research is needed on how suppliers, particularly SMEs, interpret, prioritise and respond to sustainability requirements from multiple customers.
- **Multi-tier dynamics.** Empirical studies of how sustainability requirements are cascaded, or fail to be cascaded, to sub-suppliers and informal workers remain limited.
- **Longitudinal evidence.** Most studies are cross-sectional. Longitudinal designs are needed to assess whether compliance improvements are sustained over time and to trace the non-linear trajectories identified in earlier studies.
- **Domestic and public procurement.** Sustainable procurement by emerging-market governments and domestic firms has received less attention than export-oriented supply chains, despite its growing economic significance.
- **Technology adoption.** Rigorous empirical evaluation of digital tools, including blockchain and worker voice technologies, in emerging-market supply chains is still at an early stage.

- **Outcome measurement.** Future work should measure impacts on workers, communities and the environment directly, rather than relying on proxies such as audit scores or certification status.

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