

Rethinking Operations and Supply Chain Management Research in Emerging Economies: Fostering New Methods, Topics, and Approaches

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ABSTRACT

Research in operations and supply chain management (OSCM) in emerging economies has gained rigor and international visibility in recent years. This progress reflects increasing integration into global debates and methodological standards. However, much of the literature remains strongly performance-oriented and firm-centric, often overlooking institutional fragility, informality, and power asymmetries that shape OSCM in these contexts. By thinking outside the box, this paper proposes that advancing OSCM research in emerging economies requires a shift in topics, methods, and theoretical lenses. We encourage scholars in developing countries to explore new topics, such as artificial intelligence and Scope 3 emissions, and to utilize innovative methods, including experiments, archival and big secondary data, grounded theory, and ethnography, to capture embedded practices in complex environments. By embracing conceptual ambition and methodological pluralism, OSCM research in emerging economies can move from context-applicative to context-generative contributions, strengthening its relevance to the broader field.

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WHERE ARE WE? OSCM RESEARCH IN EMERGING ECONOMIES

Over the past decade, the research community in operations and supply chain management (OSCM) across emerging economies has shown clear signs of progress and diversification (Dhillon et al., 2023). In the case of Brazil, longitudinal analyses have indicated an expansion in both the range of topics addressed and the research approaches employed, particularly when more recent periods are compared with earlier stages of field development (Freitas & Partyka, 2022; Paiva & Brito, 2013). While this evolution reflects a growing ambition among scholars in emerging economies to participate more actively in international academic debates, the increasing pursuit of international accreditations by business schools in developing countries has reinforced this orientation (Jamali et al., 2024). In summary, it encourages closer engagement with dominant global research standards and publications.

Sustainability has become a particularly prominent research theme within OSCM in emerging economies (Silva et al., 2023; Silvestre, 2015), linked to structural features common to these contexts, such as the centrality of agri-food supply chains, extractive industries, and other natural resource-based activities to economic development. Nevertheless, when the body of research from emerging economies is contrasted with that published in leading international journals, important gaps remain (Freitas & Partyka, 2022). Research streams such as behavioral operations and the operational implications of advanced digital technologies, including artificial intelligence (AI), are still relatively underexplored. Methodologically, OSCM research in emerging economies continues to rely on a limited set of approaches. In Brazil, for example, surveys and case studies are still predominant (Freitas & Partyka, 2022). Studies drawing on secondary or archival data, experiments, or multi-method designs remain scarce, constraining the field's capacity to capture complex and rapidly evolving operational phenomena often associated with volatile, uncertain, and institutionally fragmented environments.

Recent studies also suggest that OSCM research in emerging economies remains largely shaped by a positivist orientation, with a strong emphasis on performance-related outcomes (Paiva et al., 2024). While this focus has generated valuable insights, it has also tended to marginalize questions that are central to understanding operations in these contexts but are less easily captured by conventional performance metrics. These include how power asymmetries structure supply chain relationships (Brito & Miguel, 2017), how informal institutions and deeply embedded social norms influence the design and effectiveness of diversity,

equity, and inclusion initiatives in OSCM (Freitas et al., 2026), how smallholder producers mobilize sustainable circular strategies through locally governed short supply chains (Vásquez Neyra et al., 2025), and how illicit or semi-legal practices, such as supply chain piracy (Freitas et al., 2024) and counterfeiting (Machado et al., 2018), unfold in weak institutional environments, where worker safety and informality become critical dimensions of operational resilience. Taken together, these patterns point to a broader challenge for OSCM scholarship in emerging economies: advancing the field requires not only broadening the range of topics and methods employed, but also critically re-examining the dominant research perspectives through which operational phenomena in these contexts are understood.

CONTEMPORARY TOPICS

Artificial Intelligence

Ongoing technological change is reshaping the competitive landscape, and OSCM is becoming increasingly integrated through the real-time sharing of information across multiple actors and tiers. Technologies such as the internet of things, AI, and additive manufacturing are transforming production systems in diverse industries, with empirical evidence pointing to gains in efficiency and effectiveness, including in professional services (Spring et al., 2022). In OSCM, generative AI has been shown to influence process redesign, managerial practices, coordination mechanisms, and decision-making routines (Richey et al., 2023). But these developments are often interpreted as isolated technological upgrades or productivity tools, overlooking their broader organizational implications. Therefore, it is necessary to conceptualize digital transformation as a systemic phenomenon that redefines how firms and their supply chains operate and compete.

AI expands real-time connectivity through predictive and prescriptive analytics, supports autonomous and semi-autonomous decision-making, and embeds learning into operational processes, enhancing end-to-end visibility and reconfiguring coordination among supply chain members (Richey et al., 2023). Beyond efficiency gains, AI reshapes authority, interorganizational dependencies, and capability distribution, acting as a structural force within supply chains. Human capital management remains central to resilience and innovation, encompassing adaptation, learning, and leadership (Griffin, 2025; Modgil et al., 2025; Ralston & Blackhurst, 2020). As supply chains become more autonomous, firms must cultivate digital and collaborative competencies, integrating AI within a knowledge-based framework that sustains informed decision-making (Adobor et al., 2023; Çolak et al., 2025).

Scope 3 Emissions

The global expansion of manufacturing has heightened the demand for sustainability assessment frameworks capable of capturing heterogeneous environmental and socioeconomic conditions across regions, and existing approaches commonly evaluate eligibility efficiency, agricultural and industrial emissions, and life-cycle carbon intensity (Moutinho & Silva, 2024). Latin America, for example, is a fast-growing market with a rising middle class demanding more sophisticated products and services. Global firms are investing in local production (e.g., Mexico) to reduce logistics costs from regions like Asia (Blanco & Paiva, 2014). These metrics provide important benchmarks for environmental performance. But most frameworks remain anchored at the level of the focal firm and emphasize direct operational impacts (Scope 1), offering a relatively bounded view of sustainability. Therefore, there is a need to reconceptualize sustainability assessment beyond firm-level indicators to account for systemic and cross-tier effects.

Carbon footprints are increasingly embedded in complex, multi-tier supply networks, and emerging research on Scope 3 emissions shows that effective decarbonization depends on interorganizational coordination, information transparency, and supply chain design rather than isolated firm-level efforts (Mahapatra et al., 2021; Wieland & Creutzig, 2025). This perspective highlights emissions as relational and governance-dependent phenomena. But prevailing analytical models in operations and supply chain management continue to privilege internal efficiency and dyadic relationships. Therefore, advancing decarbonization research requires shifting toward network-level governance frameworks that explicitly incorporate cross-tier interdependencies and collective action.

FOSTERING NEW RESEARCH METHODS

Experiment Design

Experimental methods, particularly field experiments, enable causal identification in supply chain management by manipulating variables like contracts, incentives, AI pricing, and information flows while measuring behavioral and performance outcomes. This is well discussed by Gao et al. (2023), who provide a comprehensive review of field experiments in operations management, including supply chain applications, with practical guidance on randomization, validity, and scaling experiments in organizational contexts. Other examples include Carter et al. (2024), who document the increasing use of both lab and field experiments in top SCM journals; Cui et al. (2022), who test supplier price discrimination against AI buyers; and Hou et al. (2026), who conducted a 2x2 experiment varying con-

tract type and information transparency to study how managers' ordering decisions deviate from the rational benchmark in a supply chain game. Therefore, there is a vast field for experimental design, in which the focus is on causal inference and testing 'what works' by manipulating one or more factors and observing the effect on outcomes. The core elements are clear treatment(s) and control, randomization (or at least quasi-experimental logic), prespecified outcomes, power considerations, and validity checks.

Grounded Theory

Grounded theory has recently been widely applied to under-theorized topics in supply chain resilience, collaboration, and sustainability. For example, Zeiser et al. (2025) employ grounded theory, incorporating in-depth interviews with supply chain executives, to develop a framework of agility, adaptability, and alignment (AAA) capabilities. Meanwhile, Zhang et al. (2023) utilize grounded theory to explain the factors that drive horizontal logistics collaboration. Similarly, Faghat et al. (2020) leverage grounded theory to explain how firms manage sustainability and shared value innovation initiatives in global supply chains. In general, the focus has been on inductive theory building from qualitative data when existing theory is weak or fragmented, using theoretical sampling, in-depth interviews, iterative open, axial, and selective coding, constant comparison, memoing, and stopping at theoretical saturation.

Ethnography

Ethnography provides immersive, context-rich insights into the everyday practices, power dynamics, and cultural meanings shaping supply chains, often revealing phenomena invisible to surveys or archival data. De Tarragon et al. (2024) exemplify this through an ethnographic study of urban logistics service providers, using participant observation and thick description to unpack how actors balance efficiency, regulation, and sustainability in real-time operations. El Baz et al. (2022) further highlight ethnography's potential by calling for more anthropological approaches to cultural dimensions in SCM, noting its underuse despite its suitability for multilevel, people-centric studies like ethical sourcing or urban logistics ecosystems. For researchers studying social sustainability, labor practices, or platform-based supply networks, ethnography generates deeply contextualized data that can inform grounded theory or experimental follow-ups. In general, the focus has been on an immersive understanding of practices, meanings, and power relations through long-term engagement in the field. Participant observation, shadowing, field notes, informal and formal interviews, artifact

analysis, reflexivity, and thick description tied to theory are the main methodological elements used.

NON-POSITIVISTIC VIEW OF RESEARCH – THE CRITICAL APPROACH IN OSCM STUDIES

Recent studies indicate that OSCM research in emerging economies remains predominantly informed by a positivist orientation and a strong emphasis on performance outcomes (Paiva et al., 2024), and this trajectory has generated important insights into efficiency, integration, and competitiveness in rapidly developing countries. But this dominant focus has also limited engagement with questions that are less amenable to conventional performance metrics. For instance, how power asymmetries shape relationships within supply chains (Brito & Miguel, 2017), how deeply embedded informal institutions and gender norms influence the design and effectiveness of diversity, equity, and inclusion initiatives (Freitas et al., 2026), how research can reinforce the potential of diversity as an agent of change (Ruel et al., 2024), and how phenomena such as supply chain piracy (Freitas et al., 2024) and counterfeiting (Machado et al., 2018) unfold in weak institutional environments, where worker safety becomes central to operational resilience, remain comparatively underexamined. Therefore, expanding the scope of OSCM research in emerging countries requires greater attention to socio-institutional dynamics that extend beyond efficiency-based explanations.

OSCM in emerging economies is embedded in contexts marked by institutional fragility, regulatory gaps, and pronounced social inequalities, and these characteristics shape operational practices, governance arrangements, and risk exposure. Such environments often blur the boundaries between formal and informal systems, making relational and political dimensions central to supply chain functioning. But prevailing research designs and epistemological commitments continue to privilege quantifiable performance indicators over institutional, normative, and power-laden processes. Therefore, advancing OSCM scholarship in emerging countries calls for broader epistemological lenses and methodological pluralism capable of capturing inequality, informality, institutional weakness, and the socio-political embeddedness of supply chains.

ADVANCING OSCM RESEARCH – ILLUSTRATIVE APPLICATIONS

The two contemporary topics presented, AI and Scope 3 emissions, offer particularly fertile ground for advancing OSCM research in emerging economies. In both topics, the dominant focus in OSCM literature has generated important insights, yet remains conceptually and methodologically constrained when confronted with the institutional complexity of emerging economies. Future research should therefore move beyond incremental extensions and instead pursue more structural and theoretically grounded shifts (Table 1).

Table 1. Illustrative applications.

Contemporary Topic	Current Focus	Proposed Shift	Theoretical Lenses	New Methods	Critical Approach	Potential Research Questions
Artificial intelligence	<ul style="list-style-type: none"> - Automation - Efficiency gains - Technology adoption 	AI as governance force	<ul style="list-style-type: none"> - Institutional theory - Resource orchestration 	<ul style="list-style-type: none"> - Archival and big secondary data - Experiments - Interpretative case studies 	<ul style="list-style-type: none"> - Human–AI collaboration - Workplace conditions under AI adoption - Social and institutional dynamics under AI 	<ul style="list-style-type: none"> - How does AI redistribute decision rights and bargaining power across supply tiers? - Under what conditions does AI mitigate risks in emerging markets?
Scope 3 emissions	<ul style="list-style-type: none"> - Firm-level sustainability metrics - Scope 1 emissions 	Supply chain-level decarbonization and collaborative governance	<ul style="list-style-type: none"> - Network theory - Stakeholder theory 	<ul style="list-style-type: none"> - Ethnography - Grounded theory - Archival and big secondary data 	<ul style="list-style-type: none"> - Tensions on social dynamics in projects related to Scope 3 emissions - The role of institutions and politics in such projects 	<ul style="list-style-type: none"> - How do lead firms orchestrate decarbonization across fragmented and informal supply networks? - What governance mechanisms enable Scope 3 transparency in weak institutional contexts?

Note. Developed by the authors.

Research on AI in OSCM has largely emphasized automation, efficiency gains, and technology adoption. This stream has clarified how AI enhances forecasting

accuracy, optimizes inventory decisions, and improves operational responsiveness. However, in emerging economies, where supply chains often operate under

weak institutions, infrastructural gaps, and asymmetric relationships, AI is unlikely to function merely as a productivity tool. Instead, it may operate as a governance force that redistributes authority, restructures interorganizational dependencies, and reshapes bargaining power across supply tiers.

Future studies should therefore examine AI as an organizing architecture embedded in institutional contexts. Institutional theory can illuminate how regulatory voids, normative expectations, and legitimacy pressures shape AI implementation and diffusion (Scott, 2014). Resource orchestration perspectives can further explain how focal firms deploy data infrastructures and algorithmic capabilities to coordinate, or dominate, fragmented supply networks (Badrinarayanan et al., 2019). Experiments can test how managers respond to AI-driven recommendations, pricing systems, or contract structures, particularly in low-trust environments. Archival and large secondary datasets, such as procurement records, transaction logs, or digital platform data, can enable longitudinal analyses of how AI adoption alters performance dispersion, supplier participation, or value capture.

Sustainability research in emerging economies overlooks the systemic nature of carbon embeddedness in multi-tier and geographically dispersed supply chains. Future research should therefore shift toward supply chain-level decarbonization and collaborative governance. Network theory offers tools to analyze interdependencies, centrality, and structural holes that influence emission diffusion and transparency (Choi & Hong, 2002). Stakeholder theory can illuminate how buyers, regulators, financiers, and civil society actors shape incentives for collective action (Friedman & Miles, 2002). Ethnographic approaches can uncover how sustainability practices are negotiated in everyday operations, especially in informal or weakly regulated environments. Grounded theory can support inductive model building in under-theorized domains, such as how smallholders or micro-suppliers engage with carbon reporting demands.

FUTURE DIRECTIONS

The preceding discussion suggests that OSCM research in emerging economies has matured in scope and ambition, and it is increasingly aligned with global research standards in terms of topics, rigor, and publication. Yet this convergence also raises a strategic question for the community: *How can researchers contribute to international debates while remaining attentive to the distinctive characteristics of emerging contexts?* Below, we outline interrelated directions that can guide future research.

Research on digitalization in OSCM has largely focused on adoption, performance gains, and technological capabilities, and this focus has generated valuable insights into efficiency, automation, and integration. However, in emerging economies, where institutional fragility is common, AI is likely to operate not only as a productivity enhancer but also as a governance mechanism. Promising avenues include:

- Who controls data infrastructures in fragmented markets?
- How do algorithmic systems reallocate bargaining power between focal firms and small suppliers?
- Under what conditions does AI reinforce exclusion or mitigate asymmetries?
- How do gender norms and diversity configurations shape access to resources, decision rights, and technological inclusion across supply tiers in emerging economies?
- Under what conditions can supply chains reproduce exclusion or become arenas for empowerment and structural change?

Sustainability research in emerging economies has grown substantially, particularly in sectors such as agri-food, mining, and energy, and this growth reflects the economic centrality of natural resource-based industries. Yet most studies remain anchored in focal-firm assessments, privileging direct (Scope 1) emissions and internal environmental practices. Future research should prioritize Scope 3 emissions and systemic decarbonization, recognizing that carbon footprints in emerging economies are often embedded in complex, informal, and geographically dispersed supply networks. This shift requires reconceptualizing sustainability as a collective governance challenge rather than a firm-level compliance exercise. Promising avenues include:

- How are smaller and informal suppliers integrated into sustainable and low-carbon transitions?
- What is the role of lead firms in orchestrating transparency and capability building across tiers?
- How does public policy shape decarbonization pathways?

Taken together, these directions suggest that the future of OSCM research in emerging economies lies not merely in catching up with dominant global agendas, but in leveraging contextual specificities to generate novel theoretical insights. To fully realize this potential, scholars must combine conceptual ambition with methodological innovation and epistemological openness. By doing so, OSCM research in emerging economies can move from being primarily context-applicative to becoming context-generative, offering theoretical contributions that reshape the broader field.

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