

Theoretical Foundations of Sustainable Supply Chain Accounting: An Integrative Literature Review

¹Paul Njoku, ²Patrick U. Uzoka, **PhD**

¹Grooming People for Better Livelihood Centre Nigeria

Email: Pnjoku@groomingcentre.org

²Department of Accountancy, Delta Polytechnic Ogwashi-uku Nigeria

Email: patrickuzoka@gmail.com

Abstract

Sustainable Supply Chain Accounting (SSCA) has become an important yet fragmented interdisciplinary domain at the intersection of accounting, supply chain management, and sustainability science. This paper employs an integrative literature review approach to explore SSCA. Stakeholder theory, institutional theory, legitimacy theory, resource-based view (RBV), and dynamic capability theory were jointly explored. A systematic literature search, guided by PRISMA guidelines, is performed using Scopus and Web of Science search engines. The review shows that SSCA adoption is driven by external institutional forces, stakeholder expectations and legitimacy concerns. Yet, its utility and strategic value are influenced by internal organisational resources and capabilities and its ability to adapt, integrate, and continuously reconfigure these assets in response to dynamic environments. The paper sheds light on the contested view of SSCA as a compliance and strategic capability for achieving sustainable competitive advantage. Our paper proposes a research agenda that directs attention towards empirical research, the digital revolution and multilevel supply chain considerations.

Keywords: Sustainable supply chain accounting; sustainability accounting; stakeholder theory; institutional theory; dynamic capability theory

Introduction

The expectations of organizations regarding environmental, social and economic responsibilities have fundamentally changed in light of the evolving business environment. Rising concerns over climate change and other unprecedented challenges have increased pressure on organizations to adopt sustainable practices and remain economically competitive (Ivanov & Dolgui, 2021). The concept of sustainability has emerged from a relatively isolated corporate social responsibility (CSR) agenda to organizational phenomenon that influences decision-making, stakeholder relationships, corporate governance and organizational performance (Bansal & Song, 2017). In this context, supply chains have become central to value creation, service delivery and value preservation (Christopher, 2016). Traditional financial accounting has been supplemented with the introduction of voluntary and now mandatory sustainability accounting systems to promote transparency, accountability and sustainable value creation (Schaltegger & Burritt, 2018). Currently, sustainability accounting and supply chain management are converging, creating a rapidly expanding multi-disciplinary domain commonly termed sustainable supply chain accounting (SSCA). SSCA describes the measurement, monitoring, reporting and control systems implemented to track sustainability performance across a network of supply chains (Schaltegger & Burritt, 2018; Linton et al., 2007). Unlike accounting systems that are designed to report on financial transactions

and profitability, SSCA incorporates sustainability-valued information into complex global supply chain decision-processes.

Furthermore, organizations are mandated to report their sustainability performance and to responsibly manage suppliers, logistics providers, distributors and other supply chain actors. This broadened scope of accountability has brought to the fore the strategic relevance of accounting systems that can recognize sustainability-related information along the supply chain life cycle (Busco et al., 2020). Demand for information and knowledge in sustainable supply chain has led to growing literature on sustainability practices, environmental management, social accounting, green logistics, circular economy practices, and sustainable procurement (Govindan et al., 2015). However, the literature is still fragmented across multiple research disciplines in accounting, supply chain management, sustainability, and organizational theory. This context has created significant challenges for scholars seeking to develop a robust theoretical foundation to explain how sustainability accounting practices contribute to sustainable supply chains. Existing research has employed a wide range of theoretical lenses to understand sustainability accounting adoption, implementation, disclosure, governance, and performance implications (Koberg & Longoni, 2019). These lenses include stakeholder theory, institutional theory, resource-based view (RBV), legitimacy theory, and dynamic capability theory. These theories have provided important understanding in their respective areas of application (Touboullic & Walker, 2015; Yawar & Seuring, 2017), while having some limitations. Stakeholder theory suggests that organizations should consider multiple stakeholder interests and expectations rather than limit themselves to the maximisation of shareholders' welfare (Freeman, 1984; Freeman et al., 2020). Institutional Theory (DiMaggio & Powell, 1983; Scott, 2014) is a second, more generally applicable explanation for why organizations implement sustainability accounting and reporting. Pressures from outside organizations has widely been documented as a motivation for organizations adoption of sustainability accounting and reporting. (Herold et al., 2020). The RBV suggests that competitive advantage will be sustained by firms that develop and utilize valuable, rare, non-substitutable and inimitable resources (Barney, 1991). Dynamic capability theory (DCT) highlights the importance of organizational capability in a fast-changing business environment. Dynamic capabilities allow an organization to scan for emerging opportunities and threats, seize these opportunities, and reconfigure existing resources to exploit opportunities in dynamic environments (Teece, 2007; Teece et al., 1997). Legitimacy theory is one of the most robust theoretical perspectives used to understand sustainability accounting and reporting. According to this view, sustainability accounting and disclosure practices enable organizations to gain and maintain society's approval and legitimacy (Suchman, 1995; Deegan, 2002).

Although these theories have collectively contributed to the theoretical evolution of sustainable supply chain accounting, the inadequate theorization continues to pose disagreement. The majority of existing research is focused on single-theory paradigms describing specific aspects of sustainability, without considering the complex interplay among stakeholders and firms, institutional forces, resource and competence-based organization, legitimacy concerns and dynamic capabilities. In addition, recent theoretical reviews in sustainable supply chain management call for more comprehensive theories to better conceptualize the multidimensional nature of SSCA (Carter et al., 2020; Koberg & Longoni, 2019).

This paper fills this gap by conducting an integrative review of the main theoretical foundations which underpin SSCA. It reviews the application of stakeholder theory, institutional theory, resource-based view, legitimacy theory and dynamic capability theory within SSCA research. Based on the synthesis of these perspectives, this paper aims to identify the explanatory theoretical mechanisms through which SSCA is adopted, implemented, governed and delivers performance. The review is guided by three primary objectives. 1) Identify and compare the most commonly used theories of SSCA research. 2) Evaluate the extent to which these theories address our understanding of SSCA. 3) Suggest a synthesising theoretical framework that facilitates theory development of sustainability accounting and its role in sustainable supply chain governance, resilience, legitimacy and competitiveness. This review makes two contributions. Theoretically, this review helps to advance the theoretical development of SSCA by integrating the fragmented literature across disciplines. Practitioners and policymakers can benefit from a deeper understanding of the underlying mechanism of SSCA enabling sustainable supply chain transformation.

Methodology

Authors use an Integrative Literature Review (ILR) methodology to analyze and synthesize the current theoretical perspectives of SSCA. Integrative review methodology is appropriate for exploring a new and emerging interdisciplinary domain such as SSCA. An integrative review depends on critical review, contrasting, and comparing the literature to develop new theories and frameworks (Torraco, 2016). The integrative review methodology helps to synthesize, critically analyze, and generate new theories of SSCA given the fragmented existing literature. The PRISMA 2020 provides a standard and flexible flow diagram that improves the rigor of literature reviews in terms of transparency, reproducibility, and methodology (Page et al., 2021). The review focuses on literature published between 2015 and 2026. This period reflects the convergence of major developments in sustainability reporting standards, digital transformation across supply chains, and advances in sustainability accounting practices, including carbon accounting, life cycle assessment, and enhanced supply chain governance. (Govindan et al., 2024).

Data Sources and Search Strategy

Selection of a search strategy was a critical component of the literature review. The search strategy was designed to allow a wide range of articles across all relevant literature. The Scopus and Web of Science search engines were searched to identify relevant literature. The search strategy employed a search string of words and phrases from the main constructs of the study: "sustainable supply chain accounting", "sustainability accounting AND supply chain management" The Boolean operators (AND) were used to critically narrow the search results to ensure only relevant literature was identified. The search was designed to be iterative, as the keywords were refined using emergent themes in the early screening phase to capture the literature (Torraco, 2016).

Inclusion and Exclusion Criteria

Relevant inclusion and exclusion criteria were set to ensure suitability and applicability of sources. The studies had to be peer-reviewed journal articles published between 2015 and 2026. Peer-reviewed journals must be explicitly related to sustainability accounting in supply chain, or use concepts such as ESG reporting, environmental accounting or carbon disclosure in supply chains. Samples were excluded if they were conference papers, editorial papers, book chapters. All other

non-English publications were also excluded to ensure ease of understanding. A recent study argues that limiting literature to peer-reviewed articles enhances the validity and reliability of systematic and integrative reviews in domains of sustainability research (Zaczyk & Semrau, 2026).

Study Selection Process

The study selection process followed the PRISMA protocol to ensure a transparent, rigorous, and reproducible review process (Page et al., 2021). As shown in Figure 1, the selection procedure consists of four sequential stages: identification, screening, eligibility, and inclusion. In the identification stage, a comprehensive literature search was conducted using two major databases, Scopus and Web of Science. The search yielded 1,677 documents, comprising 542 from Scopus and 1,135 from Web of Science. After removing 412 duplicate documents, 723 unique studies remained for further assessment. In the screening stage, the titles and abstracts of the remaining 723 documents were independently examined against the predefined inclusion and exclusion criteria. Studies that were not directly related to sustainability supply chain accounting (SSCA), conference summaries, editorials, book reviews, and other non-relevant publications were removed. Consequently, 281 documents were excluded, leaving 442 articles for full-text assessment. The eligibility stage involved a detailed review of the full texts of the remaining 442 articles. Each article was assessed based on theoretical relevance, methodological rigor, and direct contribution to sustainability accounting in supply chain contexts. A total of 414 articles were removed because they either did not clearly address both sustainability accounting and supply chain integration ($n = 304$), lacked sufficient theoretical relevance ($n = 62$), or did not demonstrate adequate methodological quality ($n = 48$). Finally, we used 28 articles that met all the inclusion criteria for the qualitative synthesis. These studies provide the theoretical, conceptual, and empirical foundation for understanding sustainability supply chain accounting (SSCA) and form the basis for thematic analysis. The application of the PRISMA 2020 protocol enhances the transparency, consistency, and reproducibility of the review process, aligning with best practices for systematic literature reviews in sustainability and supply chain management (Page et al., 2021; Borchardt et al., 2025).

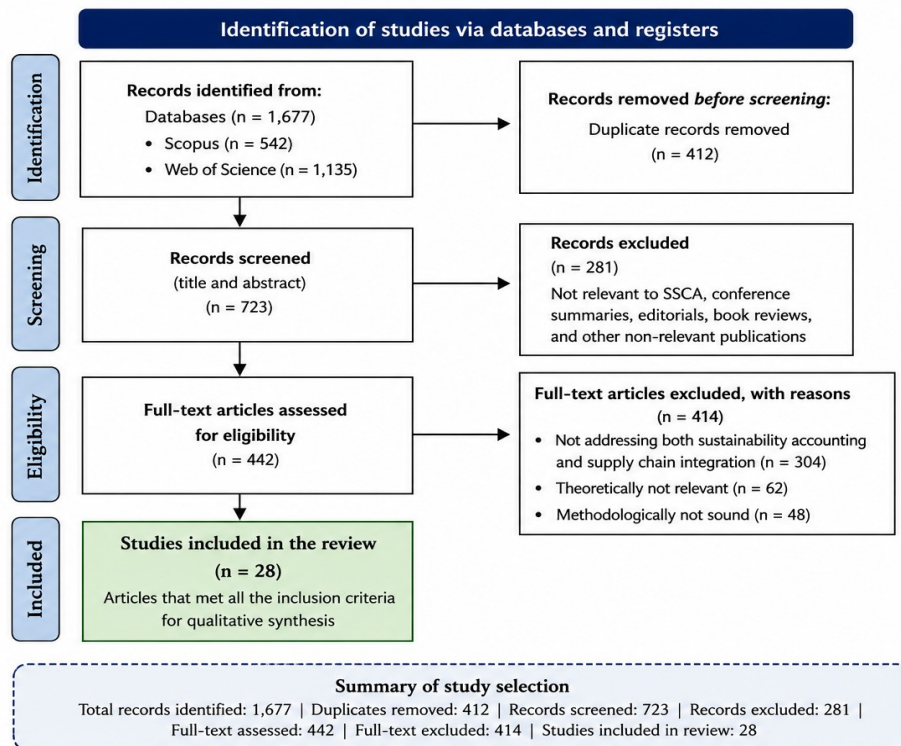


Figure 1. PRISMA 2020 flow diagram of the study selection process

Data Extraction and Coding

For each of the articles selected, a formal data extraction process (or coding frame) was designed to identify a consistent set of relevant information, including the author(s), date, publication source, method, theoretical frames adopted, dimensions of sustainability, supply chain covered, dimensions of accounting considered and main findings. The data extracted is analyzed using thematic synthesis a method that enables recognition of similarities, theoretical linkages and conceptual gaps between studies. This approach is frequently employed in reviews across the sustainability and supply chain literature to facilitate interdisciplinary integration (Shekarian et al., 2021).

Analytical Strategy

The analysis is based on a theory-driven thematic synthesis approach, grouping studies according to five dominant theoretical perspectives: stakeholder theory, institutional theory, resource-based view, legitimacy theory and dynamic capability theory. By classifying the theories into five groups, this allows for an ordered comparison of the justifications given by each of the theories to the adoption, implementation and performance of SSCA in supply chains. For instance, stakeholder theory explains SSCA as a way to conform to stakeholder pressures, where as institutional theory discusses the role of coercive, normative and mimetic forces in the adoption of SSCA (Siems et al., 2023). On the other hand, RBV and dynamic capability theory argue that SSCA is a strategic capability to gain competitive advantage and enhance organizational agility (Govindan et al., 2024). The rise of multi-theoretical synthesis reflects a growing acknowledgement that the environmental, social, and governance (ESG) dynamics underpinning contemporary global supply chains are inherently

complex, interdependent, and multidimensional, necessitating the integration of complementary theoretical perspectives to advance sustainability research (Borchardt et al., 2025).

Methodological Justification

Three reasons justify the choice of an integrative literature review. First, SSCA is a developing and fragmented field of study. A lack of theoretical consolidation is more appropriate for integrative comparison than meta-analysis (Torraco, 2016). Second, the literature requires cross-disciplinary integration of different accounting, supply chain management and sustainability research. Finally, the integrative review approach aligns with recent ESG and sustainability accounting reviews, which are effective in identifying theoretical gaps and developing conceptual frameworks (Zaczyk & Semrau, 2026).

Theoretical Review

Stakeholder Theory and Sustainable Supply Chain Accounting

The concept of stakeholders was originally developed by Freeman (1984) to imply that organizations are not solely concerned with making a profit and satisfying shareholders, but should also meet the expectations of stakeholders. Stakeholders include customers, suppliers, employees, government, local communities and pressure groups. This theory is appropriate for explaining SSCA in terms of motivation for sustainability accounting systems adoption. Modern supply chain networks present growing challenges for accounting systems due to increasing stakeholder expectations for sustainability. Customers increasingly demand ethically sourced green products. Regulators require extensive ESG disclosure, investors demand sustainability metrics within financial disclosures, and NGOs actively monitor environmental and social performance. These pressures have transformed accounting systems across supply chains by requiring firms to incorporate environmental costs, CO₂ emissions and social effects into their accounting systems. From the perspective of stakeholder theory, organizations maintain legitimacy by addressing and balancing the diverse and often conflicting expectations of multiple stakeholder groups, thereby ensuring continued stakeholder support and long-term organizational sustainability (Freeman et al., 2010; Harrison & Wicks, 2013; Murphy, 2013). Prior studies suggest that stakeholder pressure is a key driver of global supply chain sustainability accounting implementations especially in manufacturing and logistics-intensive industries (Huang & Watson, 2015; De Villiers et al., 2017). Unlike other positivist economic theories, stakeholder theory assumes that organizations are embedded within a multi-dimensional social system with conflicting demands for value. This is especially pertinent in supply chain settings, where the results of sustainability initiatives are dispersed across various actors and sites. Sustainability accounting systems act as coordination devices, allowing all members across the supply network to benefit from open information sharing and build trust among stakeholders. Empirically, sustainability reports, ESG disclosures and integrated reporting systems serve as communication mechanisms through which corporations reflect accountability and respond to stakeholder issues (Manes-Rossi et al., 2018; Odriozola & Baraibar-Diez, 2017). Despite its benefits, stakeholder theory faces some limitations in the context of SSCA. First, the theory explains firms' motivations to meet stakeholder pressures, but it pays less attention to competitive advantage or supply chain performance. Second, stakeholder theory focuses on static stakeholder groups, but in reality, stakeholder influence is fluid, evolving through

interactions among different actors and changing external environmental, regulatory, and market pressures. These shortcomings have motivated researchers to integrate stakeholder theory with other theories such as institutional theory or the resource-based view. Despite the criticisms, stakeholder theory remains one of the most influential theories in sustainable supply chain accounting literature. It can be concluded that stakeholder theory provides a useful foundation for explaining SSCA by defining sustainability accounting as a means of responding to internal and external pressures at various levels within a supply chain and stakeholder expectations. The combination of multiple theories has offered a robust understanding of the factors influencing SSCA implementation (De Villiers et al., 2020; Bui et al., 2022)

Institutional Theory and Sustainable Supply Chain Accounting

Institutional theory provides rich theoretical insight into the adoption, diffusion and legitimisation of SSCA practices by organisations. As opposed to stakeholder theory which attributes pressures from stakeholder groups, institutional theorists believe that an organisation respond to the limitations posed by norms, regulation and social forces of the environment (Low, 2004). Coercive, mimetic and normative isomorphism respectively shape organisational behavior over time (DiMaggio & Powell, 1983). Recently, institutional pressures toward sustainability have increased significantly as global climate governance architecture (e.g. Paris Agreement) and regulatory measures (e.g., the EU) emerged, putting normative, mimetic and coercive pressure on organisations to assess, report and address environmental and social impacts across their supply chains. Accordingly, sustainability accounting has shifted from a voluntary corporate social responsibility (CSR) practice into a formal institutional practice embedded in the global supply chain governance architecture (La Torre et al., 2018; Christensen et al., 2021). Coercive pressure is one of the most powerful factors for SSCA adoption. Such pressures are exerted by governments, regulators, and supranational institutions that either mandate sustainability reporting or require environmental disclosures. In fact, carbon disclosure regulations and mandatory ESG disclosures oblige firms to adopt accounting systems that can track emissions data among quite complex supply chain networks. As outlined by institutional theory, organizations comply with institutional pressures to obtain legitimacy and access markets and capital. Recent empirical studies concluded that pressure from regulators is the key factor for adopting sustainability accounting in most carbon-emissions-intensive industries (manufacturing, logistics and power sector) (Kouhizadeh et al., 2021; Garcia-Torres et al., 2019). Normative pressures come from a set of professional norms, including industry body standards, university standards and certification bodies. These norms dictate acceptable sustainability practices. The influx of various sustainability standard-setting bodies has created a set of shared norms for sustainability measurement and reporting. These frameworks help create standardised sustainability accounting standards across supply chains and enable comparison across multiple organizations. As Dumay et al. (2019) explain, normative pressures help institutionalise integrated reporting and sustainability reporting practices across markets. Mimetic forces occur when organizations imitate the practices observed in other successful organisations in response to uncertainty. In situations where supply chains are complex and uncertain, firms need to adopt sustainability accounting systems by imitating their successful and/or legitimate competitors. For example, multinational corporations such as Unilever and IKEA have recently developed sophisticated sustainability reporting systems that have become models for other organisations to adopt in their supply chains. Smaller and less powerful firms are more likely to

adopt sustainability accounting systems to appear legitimate and gain legitimate competitiveness. Also, according to research by Bui & de Villiers (2017), mimetic forces are eminent in developing economies, where legal frameworks and regulations are not fully developed. Institutional theory is particularly appropriate in understanding the rapid diffusion of sustainability accounting innovations throughout supply chains. Once sustainable practices are institutionalised in an industry, they cease to be voluntary initiatives. This explains the rapid global adoption of ESG reporting and carbon disclosure systems in the last ten years. Scott (2014) states that institutionalisation is reached when practices have become incorporated into regulative, normative and cultural-cognitive elements of social life. In SSCA, this is clearly demonstrated by the increasing expectation that firms disclose Scope 1, Scope 2 and Scope 3 emissions. Recent advancements in digital technologies have also intensified the institutional pressures on the SSCA. The adoption of blockchain-based traceability systems, digital applications for sustainability analytics and real-time carbon-tracking platforms embeds institutional requirements of accountability and transparency. Technology standards set by digital applications across industries further institutionalize the digital sustainability accounting practices throughout global supply chains (Sabeti et al., 2019; Queiroz et al., 2020). Although institutional theory can offer strong explanatory power on the adoption and diffusion of SSCA practices, it has some limitations. Institutional theory only emphasises why organisations conform to institutional pressures but ignores their effect on sustainability and financial performance. In some instances, organisations might adopt a sustainability accounting system for mere symbolic reasons. This is called "greenwashing" or decoupling (Murphy and Snowden, 2015; Cho et al., 2015). Decoupling in a supply chain setting occurs where an organisation presents an elaborate sustainability report without using sustainability information effectively in procurement, logistics, and supplier selection. Hence, some researchers combined other theories, such as resource-based view or dynamic capability theory, with institutional theory to examine how institutional pressures shape performance (Glover et al., 2014; Khan et al., 2022). Despite these shortcomings, institutional theory is important in SSCA as it illustrates the external influences that shape organization responses. By explaining the widespread adoption of sustainability accounting across supply chains, institutional theory can identify how ESG and carbon accounting systems have been influenced by regulatory and normative pressures.

Resource-Based View and Sustainable Supply Chain Accounting

RBV offer a firm-centric theoretical framework for a firm-level explanation of how SSCA lead to competitive advantage and superior long-term organisational performance. According to Barney (1991), RBV suggests that firms can gain sustainable competitive advantage by having resources and capabilities that are valuable, rare, difficult to imitate, and non-substitutable (VRIN). In the context of SSCA, sustainability accounting systems are increasingly viewed as an organisation's means of complying with regulatory and stakeholder expectations. It is a strategic organisational capability that supports an organisation in making superior decisions, managing risks and creating value through supply chains. Firms that create sophisticated sustainability accounting systems (e.g., carbon accounting systems, life-cycle costing systems, and advanced ESG data collection, management and analysis infrastructures) will be able to manage complex supply chains. These systems are perceived as 'intangible strategic assets, which improve supply chain transparency, visibility and control (Hart, 1995; Barney et al., 2011). In the context of sustainable supply chains,

RBV has been widely used to explain why some companies achieve better performance in environmental sustainability. Natural resource-based view (NRBV) (Hart, 1995) assumes that environmental capabilities are a potential source of competitive advantage. He identified pollution prevention, product stewardship, and sustainable development as strategic capabilities that can reduce environmental impact and increase operational efficiency. These capabilities are supported by a robust accounting system within the SSCA setting capable of measuring environmental costs, tracking carbon emissions and incorporating other key sustainability indicators into financial decisions.

Golicic and Smith (2013) observed that green SCM practices enhanced firms' financial and operational performance. Dangelico and Pujari (2010) also found that firms with robust environmental innovation capabilities have a competitive advantage. In the context of SSCA, sustainability capabilities are commonly mediated by various accounting systems that process sustainability data into managerial decisions. Emerging studies and recent literature on digitalization in SSCA suggest that the strategic value of sustainability accounting systems could be enhanced through digital enabling technologies such as artificial intelligence, blockchain technology, and big data analytics (Bocken et al., 2020; Bag et al., 2020). From an RBV perspective, supply chain management with sustainability accounting represents a distinctive organizational capability that competitors will find difficult to imitate. Firms do not exist in a vacuum as market pressures, regulatory demands and stakeholder expectations all influence sustainability accounting practices. Yet, RBV does not explain why firms choose to implement SSCA. It is useful for explaining the value creation process when SSCA system is already integrated within the firm (Aragón-Correa & Sharma, 2003; Khan et al., 2022). RBV offers a strong theoretical foundation for explaining the mechanisms through which SCA impacts competitive advantage and organisational performance. By viewing sustainability accounting systems as valuable, rare and costly-to-imitate strategic resources and organisational capabilities, RBV sheds light on the internal processes through which sustainability data add value to the firm. Its explanatory strength is amplified when combined with other theories that focus on external factors and institutions.

Legitimacy Theory and Sustainable Supply Chain Accounting

Legitimacy Theory offers important socio-political insights toward the conceptual understanding of SSCA, particularly in addressing the motivation behind sustainability disclosure. As stated above, legitimacy is defined as the extent to which an organisation's activities are perceived to be congruent with relevant rules and values (Suchman, 1995). When applied to the context of SSCA, legitimacy is associated with carbon disclosure, environmental disclosure, fair sourcing, social responsibility and supply chain management. Hence, SSCA is largely conceptualized as an accounting method for legitimizing activities perceived to be legitimate. The rising importance of global ESG (Environmental, Social, and Governance) reporting subjects businesses, especially those with complex supply chains, to increased legitimacy pressures. Business is not only evaluated on financial performance but also by overall environmental and social impact, making sustainability accounting the most critical business activity to deal with such legitimacy pressures. As Deegan (2002) points out, social and environmental disclosures are likely to be used as strategic devices to influence public opinion and to fill the legitimacy gap between organisational actions and societal

expectations. Previous studies suggest that the more regulatory or visible an industry is, the more a firm is likely to provide comprehensive disclosure in response to legitimacy pressures (Cho et al., 2015; O'Donovan, 2002). Legitimacy theory distinguishes three interrelated dimensions of organizational legitimacy, such as pragmatic, moral, and cognitive legitimacy, which jointly explain how organizations obtain, maintain, and repair legitimacy in the eyes of stakeholders and the wider society. Pragmatic legitimacy is based on the self-interest of allies who assess the performance of the organization based on perceived benefits. Moral legitimacy is formed by normative evaluation of whether the actions of the organisation are perceived as "right". Cognitive legitimacy refers to the acceptance of organizational practices as natural and inevitable within the prevailing social and institutional context, such that they are rarely questioned by society. Arguably, carbon accounting disclosures could contribute to pragmatic legitimacy by showing cost savings. Carbon accounting disclosures could contribute to moral legitimacy through positive images of climate consciousness. Carbon accounting disclosures could contribute to cognitive legitimacy where sustainability report are normally expected organizational practice (Suchman, 1995; Tost, 2011). The empirical evidence in the field of sustainability accounting indicates that firms tend to use environmental and social reporting to cope with legitimacy risks caused by negative environmental incidents, public regulation or angry investors (Bhattacharyya, 2009; Leire & Michaelson, 2000; De Villiers & Van Staden, 2011). For instance, companies associated with environmental scandal tend to increase their sustainability disclosures after experiencing damaging publicity, aiming to rebuilding their social acceptance and confidence (Lynch & Ball, 2001). This reactive type of disclosures, a form of "legitimacy repair" or "legitimacy restoration strategies" (De Villiers & Van Staden, 2011), occurs frequently in sustainability accounting research literature. Legitimacy repair is not confined to the focal organisation but extends throughout the supply chain, where effective restoration efforts often rely on collaboration with suppliers, logistics providers, and other strategic partners. This interdependence further complicates the design and implementation of SSCA systems. Although some organizations integrate sustainability accounting into strategic and operational decision-making to improve sustainability performance, others use sustainability disclosures primarily as symbolic legitimacy mechanisms, emphasizing external perceptions rather than substantive changes in operational behaviour. Cho et al. (2015) note this as a potential weakness of sustainability reporting. The problem of symbolic legitimacy becomes even more pronounced in supply chains due to increased complexity and lack of transparency in global value chains. Firms might report aggregate sustainability measures without the disclosure of upstream effects or supplier-level actions, leading to a disconnect between sustainability performance and actual environmental benefits along the supply chain. Legitimacy is subject to change over time, shaped by evolving societal values and expectations. The more normative sustainability standards become institutionalised, the greater the pressure on organisations to update their accounting policies to these universal norms to maintain legitimacy. For instance, voluntary disclosure of sustainability activities was once viewed as enlightened corporate conduct, but is now the norm in many industries. However, there are also drawbacks of legitimacy theory. First, it predominantly focuses on external perceptions of the organisation, with insufficient attention to internal organisational dynamics. Second, it tends to position organisations as responding primarily to ex post conditions. Third, it falls short of fully explaining the performance implications of SSCA. Due to these limitations, researchers are now combining legitimacy theory with other theoretical lenses including institutional theory, stakeholder theory, and RBV. Legitimacy theory accurately demonstrates the

motivation to disclose sustainability information and how disclosure is used as a strategy to meet societal presumption.

Dynamic Capability Theory and Sustainable Supply Chain Accounting

Dynamic capability theory is a powerful framework for interpreting how organisations evolve, reconfigure and adopt SSCA systems, especially in turbulent environmental, technological and regulatory contexts. Dynamic capability theory is the 'processes that firms use to integrate, build and reconfigure internal and external capabilities to address rapidly changing environments' (Teece et al., 1997). Traditionally, dynamic capability involves three processes: sensing, seizing and reconfiguring (Teece, 2007). In the context of SSCA, firms' sensing capability is regarded as their ability to recognize potential sustainability risks or opportunities. For instance, climate-related financial risks and opportunities, carbon taxation legislature and supply chain emission. Seizing, on the other hand, indicates how to develop a suitable sustainability accounting system and strategies to manage challenges. Reconfiguring focuses on how to transform organisational structures, processes and supply chain relationships and integrate sustainability accounting into firm's operation.

Recently, as sustainability and supply chain literature has increasingly embraced a systems-thinking approach, DCT has been widely employed to explain how firms adapt and evolve in response to environmental uncertainty. Supply chains are now required to operate in an increasingly volatile context characterised by resource fluctuations, climate change impacts, regulatory complexities, and geopolitical disruptions. Such contextual stressors highlight the need for SSCA systems that enable supply chain actors to acquire, disaggregate and translate sustainability data into information that facilitates an adaptive supply chain environment. As DCT suggest, this level of supply chain agility is likely to contribute to supply chain resilience. Empirical research provides evidence that dynamic capabilities are important in achieving sustainable supply chain performance. Wong, Wong and Boon-itt (2018) observed that supply chain agility and adaptability are positively related to environmental and operational performance. Beske, Land, and Seuring (2014) further show that the implementation of sustainable supply chain management (SCM) was coupled with the development of a dynamic capability. They identified collaboration capability, integration capability, and reconfiguration capability at strategic and operational supply chain levels. The importance of DCT in SSCA studies has been further emphasized with the rise of digital transformation. According to Khan, Yu and Lew (2021), digital technologies may also be viewed as a facilitator of dynamic capabilities for boosting the sensing and transformation process in sustainability-oriented organizations. Specifically, blockchain technology has been identified as a key feature that enable transparency and traceability in SSCA systems. Saberi et al. (2019) argue that blockchain-enabled supply chain systems improve sustainability performance by increasing information fidelity and discouraging opportunism. However, there are limitations of DCT in understanding the SSCA. DCT is criticized for being too conceptually broad and not operationalizable (Rottmann et al. 2008). Secondly, while this theory can shed light into how firms adapt themselves to change, it ignores how institutional and legitimacy pressures influence the adoption of sustainability accounting practices (Rottmann et al. 2008). Thirdly, unlike the other theories, more attention is given to capabilities at the firm level, ignoring the multi-tiered supply chain interdependencies involved in SSCA systems. To overcome these limitations, researchers have called for multi-theories integration

(Khan et al., 2022). DCT provides a strong explanatory lens that clarifies organizational evolution of SSCA systems under dynamic environmental conditions. However, the explanatory strength of this theory can be operationalised when examined jointly with other theories that explain institutional constraints, stakeholder influence, resource limitations and legitimacy issues.

Comparative Theoretical Synthesis of Sustainable Supply Chain Accounting

Although both stakeholder and institutional theory acknowledge external forces, they make different assumptions with regard to influence. Stakeholder theory identifies concrete actors (customers, regulators, investors) who pressurize firms to implement sustainability accounting (Freeman, et al., 2010). Institutional theory views influence as residing in the external social, political, and legal context where organisations exist and affects them through coercive, normative, and mimetic isomorphism (DiMaggio & Powell, 1983). Both of these theories are used in SSCA to explain the adoption of a sustainability accounting system, but do not offer guidance for the internal value-creation aspects of SSCA.

Legitimacy theory may also inform the symbolic aspect of SSCA adoption. While stakeholder and institutional theories discuss social pressure, legitimacy theory explains the motives for adopting sustainability reporting (Suchman, 1995). This logic becomes even more significant in supply chains where firms may issue a sustainability report without corresponding changes in their practices, an effect called decoupling. Decoupling indicates the gap between formal truth and real sustainability performance (Cho et al., 2015). Hence, Legitimacy theory provides an additional dimension and a potentially material aspect, which can highlight the performative side of SSCA.

In contrast to the above theories, RBV shifts its focus inward by approaching SSCA as a strategic resource generating competitive advantage. While the former does not directly address the question of 'Why firms adopt sustainability accounting?', RBV only demonstrates its contribution to improved organisational performance, for example, through the above-mentioned systems such as carbon accounting, ESG analytics or supplier sustainability dashboards (Barney, 1991; Hart, 1995). Moreover, RBV is not sufficient on its own for explaining SSCA adoption, as it underestimates legitimacy issues and external pressure. DCT provides the necessary link to fill this gap by incorporating a temporal and evolutionary perspective into SSCA. It accounts for the mechanisms that allow organisational capability to adapt and change continuously in response to the changing environmental landscape (Teece, 2007). SSCA emerges from a hybrid interaction between external institutional pressures and internal organisational mechanisms. External forces namely stakeholder expectations, institutional pressures, and legitimacy concerns, drive its adoption and standardisation. Internal mechanisms, particularly the resource-based view (RBV) and dynamic capability theory (DCT), explain how SSCA generates strategic value and enhances organisational effectiveness. On this basis, SSCA can be understood as both a compliance-oriented system shaped by regulatory and normative demands and a strategic management system oriented towards value creation and competitive advantage. (see table 1)

Table 1: Comparative Theoretical Synthesis of Sustainable Supply Chain Accounting (SSCA)

Theoretical Lens	Core Focus	Level of Analysis	Key Role in SSCA	Strengths in Explaining SSCA	Limitations in SSCA Context
Stakeholder Theory (Freeman, 1984; Freeman et al., 2010)	External stakeholder demands and value expectations	External (actors: customers, investors, regulators, NGOs)	Explains why firms adopt SSCA due to pressure for transparency and accountability	Strong in explaining adoption drivers and multi-actor influence; captures ESG demand dynamics	Weak in explaining internal capability development and long-term performance impact
Institutional Theory (DiMaggio & Powell, 1983; Scott, 2014)	Institutional norms, rules, and legitimacy structures	Macro (regulatory and organisational field level)	Explains diffusion and standardisation of SSCA practices through coercive, normative, mimetic pressures	Strong in explaining convergence of ESG reporting, carbon accounting, and global standard adoption	Limited explanation of firm-level heterogeneity and strategic outcomes
Legitimacy Theory (Suchman, 1995; Deegan, 2002)	Social acceptance and legitimacy maintenance	Socio-political perception level	Explains SSCA as a legitimacy management and impression tool	Captures symbolic reporting, greenwashing, and legitimacy repair mechanisms	Overemphasises symbolism; underplays operational and performance impacts
Resource-Based View (RBV) (Barney, 1991; Hart, 1995)	Internal resources and competitive advantage	Firm-level internal capabilities	Explains SSCA as a strategic resource for efficiency and advantage	Strong in linking SSCA to competitive advantage, data-driven decision-making, and performance gains	Weak in explaining adoption drivers and institutional pressures
Dynamic Capability Theory (Teece et al., 1997; Teece, 2007)	Adaptation, learning, and capability reconfiguration	Temporal/process (dynamic firm evolution)	Explains SSCA as a continuously evolving capability system	Captures innovation, digital transformation, and adaptation to regulatory change	Conceptually broad; difficult to operationalise empirically

Source: (Authors' own work)

Table 2 Cross-Theoretical Integration Summary (SSCA Synthesis Logic)

Dimension	External Pressures	Internal Mechanisms	Outcome Orientation
Primary Theories	Stakeholder Theory, Institutional Theory, Legitimacy Theory	RBV, Dynamic Capability Theory	All five theories integrated
Core Function	Adoption + diffusion of SSCA	Value creation + capability development	Sustainability performance + competitive advantage
Key Dynamic	Compliance & legitimacy seeking	Resource orchestration & adaptation	Environmental, operational, reputational outcomes
Central Tension	Conformity vs autonomy	Stability vs flexibility	Symbolic vs substantive performance

Source: (Authors' own work)

Table 3 presents three key tensions in SSCA literature. The compliance strategy tension assumes firms may respond to sustainability accounting for the fear of institutional pressures or for competitive benefits. The symbolic substantive tension explains whether sustainability reporting is undertaken for operational legitimacy or strategic legitimacy. The stability-adaptability tension reflects the need for organisations to develop standardized reporting systems with evolving sustainability demand. These tensions illustrate SSCA as a structurally contested organisational practice shaped by competing theoretical logics; consequently, a multi-theoretical synthesis drawing on stakeholder theory, institutional theory, resource-based view, legitimacy theory, and dynamic capability theory is required to adequately capture its dynamics.

Table 3. Key Theoretical Tensions in SSCA

Tension	Explanation	Theoretical Interaction
Compliance vs Strategy	Firms adopt SSCA either to comply with external demands or to gain competitive advantage	Institutional/Stakeholder vs RBV
Symbolic vs Substantive Reporting	Sustainability disclosures may reflect either real operational change or symbolic legitimacy management	Legitimacy Theory vs RBV/Dynamic Capabilities
Stability vs Adaptability	Firms must balance standardized reporting systems with evolving sustainability demands	Institutional Theory vs Dynamic Capability Theory

Source: (Authors' own work)

Integrated Conceptual Framework for SSCA

Building on the literature, we propose an integrated conceptual framework showing SSCA as the unifying mediating construct between external pressure, internal capability and sustainability in supply chains (see Figure 2). At the external environment level, stakeholder theory, institutional theory and legitimacy theory collectively drive coercive, normative and mimetic pressures for sustainability accounting system adoption. Several external forces influence demands for transparency from stakeholders, while institutional pressures reinforce compliance expectations, and legitimacy concerns shape the social construction of what is considered legitimate.

At the organisational level, the RBV demonstrate how firms transform SSCA systems into strategic resources. DCT demonstrate how these systems are always upgraded and reconfigured. SSCA becomes embedded in organizational routines, digital infrastructures, and managerial decision-making.

At the outcome level, SSCA impacts three types of performance: environmental performance (e.g., emission reduction), operational performance (e.g., supply chain performance), and reputational performance (e.g., legitimacy). More significantly, these outcomes are not a direct result of SSCA, but are moderated by the strength of internal capabilities and institutional pressure, respectively. The framework positions SSCA as a multi-level integrative construct linking institutional environment, organizational capabilities and sustainability outcomes. This integrative perspective addresses a significant research gap, as the dominant literature has tended to treat sustainability accounting either as a reporting tool focused on disclosure or as a strategic capability associated with proactive management, but rarely as both.

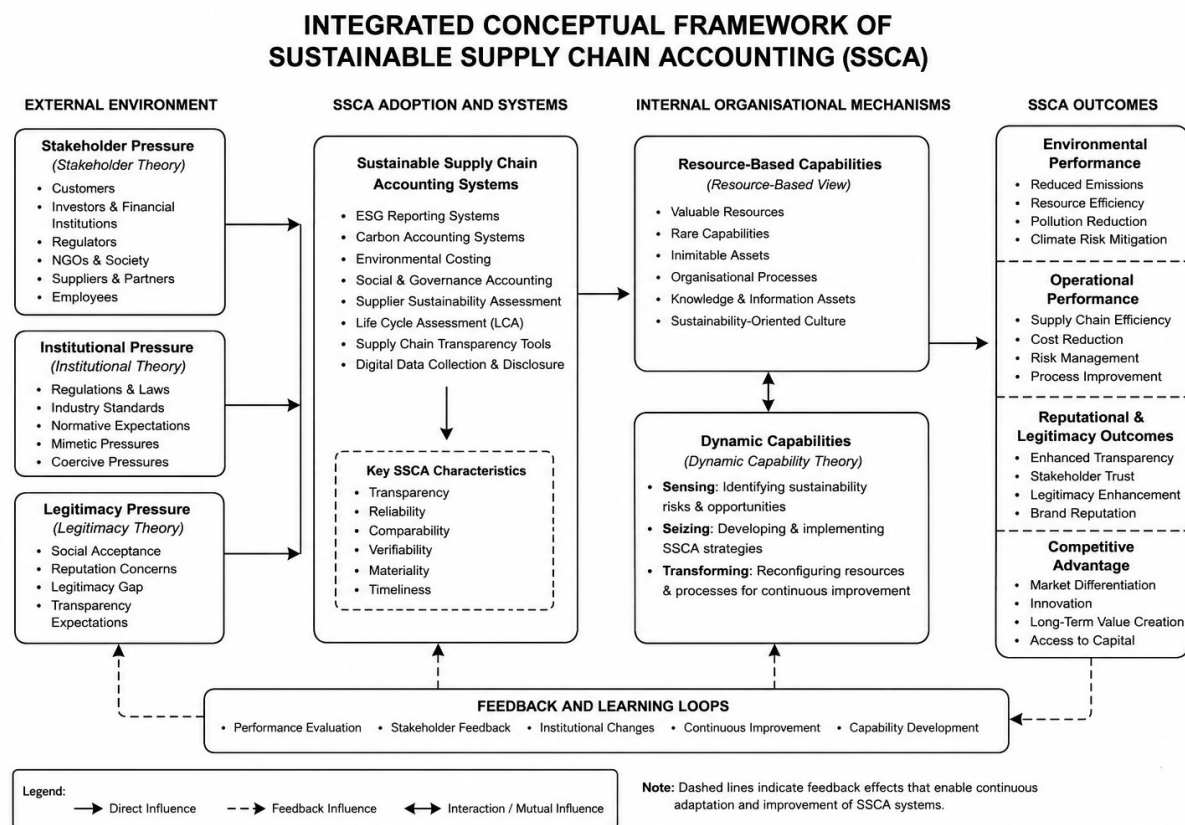


Figure 2. Integrated Conceptual Framework of Sustainable Supply Chain Accounting

Source: (Authors' own work)

Future Research Agenda

While substantial progress has been made in recent years in SSCA research, several unresolved issues still exist. One issue is the lack of empirical research on the effects of SSCA systems on multi-tier supply chains, especially in developing countries with limited data. A second unresolved issue relates to future studies on the role of emerging technologies, such as artificial intelligence, blockchain, and digital twins, in improving SSCA reliability and transparency. A third unresolved issue is the lack of longitudinal studies to track progress in sustainability accounting capabilities. It is also important to explore further the potential of the symbolic/substantive tension, in particular greenwashing associated with sustainability reporting across global supply chains. Further work that provides more in-depth integration of the behavioural accounting perspective is also required. Finally, cross-theoretical empirical modelling is needed to test the integrated framework developed in this research using the structural equation modelling (SEM) approach or the multi-level analysis approach.

Conclusion

This paper performs an integrative review of the theoretical lenses associated with SSCA, synthesising five leading theoretical perspectives. Our results suggest that SSCA is a multi-dimensional concept influenced by external institutional pressures, stakeholder expectations, legitimacy pressures and internal organisational capabilities. This study developed a comprehensive conceptual framework integrating stakeholder theory, institutional theory, legitimacy theory, resource-based view, and dynamic capability theory, explaining the adoption and strategic use of the SSCA system. This study provides theoretical contributions by integrating the fragmented literature streams to produce one holistic perspective. Finally, SSCA is viewed as a capability-driven, dynamic system that allows organizations to continuously adapt to various complex sustainability issues and turn them into a source of competitive advantage.

References

- Aragón-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of Management Review*, 28(1), 71–88.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Bansal, P., & Song, H. C. (2017). Similar but not the same: Differentiating corporate sustainability from corporate social responsibility. *Academy of Management Annals*, 11(1), 105–149.
- Beske, P., Land, A., & Seuring, S. (2014). Sustainable supply chain management practices and dynamic capabilities in the food industry. *International Journal of Production Economics*, 152, 131–143.
- Burritt, R. L., & Schaltegger, S. (2014). Accounting towards sustainability in production and supply chains. *The British Accounting Review*, 46(4), 327–343.
- Busco, C., Frigo, M. L., Quattrone, P., & Riccaboni, A. (2020). *Integrated reporting: Concepts and cases that redefine corporate accountability*. Springer.

- Carter, C. R., Rogers, D. S., & Choi, T. Y. (2020). Toward the theory of the supply chain. *Journal of Supply Chain Management*, 56(1), 1–11.
- Cho, C. H., Laine, M., Roberts, R. W., & Rodrigue, M. (2015). Organized hypocrisy, organizational façades, and sustainability reporting. *Accounting, Organizations and Society*, 40, 78–94.
- Christopher, M. (2016). *Logistics and supply chain management* (5th ed.). Pearson.
- Christensen, H. B., Hail, L., & Leuz, C. (2021). Mandatory CSR and sustainability reporting. *Review of Accounting Studies*, 26, 117–157.
- De Villiers, C., & Maroun, W. (2020). Sustainability accounting and accountability. *Meditari Accountancy Research*, 28(1), 1–18. <https://doi.org/10.1108/MEDAR-03-2019-0469>
- Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures. *Accounting, Auditing & Accountability Journal*, 15(3), 282–311.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited. *American Sociological Review*, 48(2), 147–160.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & de Colle, S. (2010). *Stakeholder theory: The state of the art*. Cambridge University Press.
- Govindan, K., Rajendran, S., Sarkis, J., & Murugesan, P. (2015). Multi-criteria decision-making approaches for green supply chain management. *Journal of Cleaner Production*, 112, 1–15.
- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20(4), 986–1014.
- Harrison, J. S., & Wicks, A. C. (2013). Stakeholder theory, value, and firm performance. *Business Ethics Quarterly*, 23(1), 97–124.
- Ivanov, D., & Dolgui, A. (2021). A digital supply chain twin for managing disruption risks. *International Journal of Production Research*, 59(5), 1521–1537.
- Khan, S. A. R., Yu, Z., & Lew, Y. K. (2021). Blockchain technology and sustainable supply chains. *International Journal of Production Economics*, 243, 108311. 1
- Kouhizadeh, M., Saberi, S., & Sarkis, J. (2021). Blockchain technology and the sustainable supply chain. *International Journal of Production Research*, 59(7), 2017–2035.
- La Torre, M., Dumay, J., Rea, M. A., & Abhayawansa, S. (2018). Corporate reporting and institutional theory. *Accounting, Auditing & Accountability Journal*, 31(2), 562–583.
- Linton, J. D., Klassen, R., & Jayaraman, V. (2007). Sustainable supply chains. *Journal of Operations Management*, 25(6), 1075–1092.
- Manes-Rossi, F., Tiron-Tudor, A., Nicolò, G., & Zanellato, G. (2018). Integrated reporting and stakeholder engagement. *Accounting Forum*, 42(4), 313–324.

- O'Donovan, G. (2002). Environmental disclosures and legitimacy theory. *Accounting, Auditing & Accountability Journal*, 15(3), 344–371.
- Page, M. J., et al. (2021). The PRISMA 2020 statement. *BMJ*, 372, n71.
- Saberi, S., Kouhizadeh, M., Sarkis, J., & Shen, L. (2019). Blockchain technology and sustainability. *International Journal of Production Research*, 57(7), 2117–2135.
- Schaltegger, S., & Burritt, R. (2018). *Contemporary environmental accounting: Issues and concepts*. Routledge.
- Scott, W. R. (2014). *Institutions and organizations: Ideas, interests, and identities* (4th ed.). Sage.
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework. *Journal of Cleaner Production*, 16(15), 1699–1710.
- Suchman, M. C. (1995). Managing legitimacy. *Academy of Management Review*, 20(3), 571–610.
- Teece, D. J. (2007). Explicating dynamic capabilities. *Strategic Management Journal*, 28(13), 1319–1350.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Touboulic, A., & Walker, H. (2015). Theories in sustainable supply chain management. *International Journal of Physical Distribution & Logistics Management*, 45(1/2), 16–42. <https://doi.org/10.1108/IJPDLM-05-2013-0101>
- Wong, C. Y., Wong, C. W. Y., & Boon-itt, S. (2018). Supply chain agility and performance. *International Journal of Production Economics*, 205, 99–110.
- Yawar, S. A., & Seuring, S. (2017). Management of social issues in supply chains. *International Journal of Physical Distribution & Logistics Management*, 47(10), 1–25.