

Navigating Competing Stakeholder Pressures: A Case Study of Sustainable Supply Chain Practices at Dongfeng Motor Dominic

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Abstract:

This study investigates how institutional pressures—coercive, mimetic, and normative—interact with sustainable leadership to influence sustainable procurement implementation (SPI) at Dongfeng Motor. Using data from 307 procurement managers, sustainability officers, and supplier representatives, and applying PLS-SEM with 5,000 bootstrap resamples, the study finds that coercive pressures, such as China’s Dual Carbon Policy and the EU’s Carbon Border Adjustment Mechanism, are the primary drivers of SPI. Mimetic pressures from competitors like BYD and Geely also play a significant role, while normative pressures have minimal impact. Sustainable leadership is identified as a partial mediator, converting external demands into tangible practices like the Supplier Green Code 2024 and blockchain-enabled carbon audits. The findings extend Institutional Theory by highlighting the asymmetry of isomorphic pressures and emphasize leadership’s key role in translating these pressures into actionable outcomes. For managers and policymakers, the study underscores the importance of leadership, aligned regulations, and supplier collaboration to drive sustainability in automotive supply chains.

Keywords: Sustainable Supply Chain Management (SSCM), Sustainable Procurement Implementation (SPI), Institutional Theory of Isomorphism- Coercive, Mimetic, and Normative Pressures- Sustainable Leadership, Automotive Supply Chains , Dual Carbon Policy (China) , Carbon Border Adjustment Mechanism (CBAM) , Blockchain-enabled

1. Introduction

1.1. Importance of Sustainable Supply Chain Management (SSCM) in Automotive Manufacturing

Sustainable supply chain management (SSCM) is increasingly at the heart of conversations about environmental sustainability, especially in industries like automotive manufacturing that have a big impact on the environment. The automotive sector, with its complex supply chains and significant carbon footprint, is under growing pressure to improve sustainability (Raj et al., 2020; Zhu et al., 2022). As the world pushes forward with electrification, automakers are tasked with not only reducing emissions in their production processes but also making sustainability an integral part of their supply chains (Qazi & Appolloni, 2022).

1.2. Sustainability Challenges in the Chinese Automotive Sector

In China, the world's largest automotive market, this challenge is amplified by the country's ambitious "dual carbon" policy, aiming for carbon peak emissions by 2030 and carbon neutrality by 2060 (Liao, 2022). For state-owned enterprises like Dongfeng Motor, the challenge is twofold: they must innovate technologically while ensuring their supply chain strategies meet environmental, social, and economic goals.

1.3. Dongfeng Motor's Efforts in Embedding Sustainability

Dongfeng has rolled out several key initiatives to embed sustainability in its supply chain, such as the Supplier Green Code 2024, blockchain-enabled carbon audits, and battery recycling partnerships. However, these efforts come with challenges. Suppliers are often hesitant due to concerns over cost, while consumers demand affordable electric vehicles. On top of this, global regulations like the EU's Carbon Border Adjustment Mechanism (CBAM) add more complexity by requiring companies to track and report carbon emissions in their supply chains (Behraves et al., 2022; Yang et al., 2023).

While sustainability practices in sectors like textiles, food, and public procurement have been well-researched (Dubey et al., 2017; Nsiah-Sarfo et al., 2023), there is a gap when it comes to understanding how Chinese automotive supply chains manage the competing demands of different stakeholders. Much of the existing research has focused on technological innovations such as electric vehicles (EVs) or policies at the macro level, rather than how firms govern their suppliers, logistics, and circular practices (Ntsonde & Aggeri, 2021; Grandia & Kruiyen, 2020). This gap is critical because it prevents a full understanding of how governments, consumers, competitors, NGOs, and suppliers influence sustainability practices in China's automotive supply chains.

1.4. Theoretical Framework: Stakeholder Theory and Institutional Theory

To bridge this gap, this study uses Stakeholder Theory (Freeman, 1984) as its guiding framework. Stakeholder Theory suggests that companies are shaped by various actors, each with conflicting expectations. These differences create trade-offs that influence the company's strategic decisions (Gray et al., 1996; Campbell, 2007).

Although research on Sustainable Supply Chain Management (SSCM) has expanded substantially, much of the existing literature examines institutional pressures, stakeholder influences, or cost-based decision making in

isolation. As a result, limited attention has been given to explaining how firms translate external regulatory and competitive pressures into concrete sustainable procurement practices.

Addressing this gap, the present study integrates Institutional Theory, Stakeholder Theory, and Transaction Cost Economics to explain both the sources of sustainability pressures and the mediating role of sustainable leadership in converting these pressures into procurement implementation within a Chinese state-owned automotive enterprise.

1.5. Research Questions and Study Focus

By applying this theory to Dongfeng, the study looks at how external stakeholders like governments, regulators, NGOs, competitors, and consumers, as well as internal stakeholders such as managers and suppliers, impact the company's adoption of sustainable practices. The research will answer the following questions:

RQ1: How do external stakeholders influence Dongfeng's sustainability practices?

RQ2: How do internal stakeholders affect the adoption of cleaner logistics and procurement strategies?

RQ3: What tensions arise between stakeholder groups, and how does Dongfeng navigate these competing pressures?

1.6. Contributions of the Study

This study makes three important contributions. First, it offers a new perspective by exploring sustainability in China's automotive sector, which is often overlooked in global sustainability discussions. Second, it extends Stakeholder Theory by examining how conflicting pressures from different stakeholders affect green procurement, logistics, and circular practices in the automotive sector. Third, it provides practical insights through Dongfeng's real-world initiatives, offering valuable recommendations for managers and policymakers looking to navigate the complex landscape of regulatory compliance, stakeholder expectations, and competitive pressures in the automotive industry

2. Literature Review

2.1. Overview of Sustainable Supply Chain Management (SSCM)

Sustainable Supply Chain Management (SSCM) has become a central theme in operations and management research as firms increasingly face environmental regulations, stakeholder scrutiny, and pressure to integrate sustainability into procurement and logistics decisions (Carter & Rogers, 2008; Seuring & Müller, 2008).

2.2. Key Drivers of Sustainability in Supply Chains

Prior studies highlight that a significant share of environmental and social impacts originates upstream, particularly through supplier practices and logistics activities (Brammer & Walker, 2011; Dubey et al., 2017). As a result, green procurement, supplier engagement, and circular economy initiatives have emerged as critical components of SSCM.

2.3. Role of Digital Technologies in Enhancing SSCM

Recent literature (2022–2024) emphasizes the growing role of digital technologies—such as blockchain, artificial intelligence (AI), and the Internet of Things (IoT)—in enhancing transparency, traceability, and carbon monitoring across supply chains (Behraves et al., 2022; Nguyen et al., 2023). These tools are particularly relevant in carbon-intensive industries such as automotive manufacturing, where regulatory compliance and emissions disclosure are increasingly mandatory.

2.4. Theoretical Foundations in SSCM Research

From a theoretical perspective, SSCM research has been informed by Institutional Theory, Stakeholder and Transaction Cost Economics (TCE). Institutional Theory explains how coercive,

mimetic, and normative pressures drive firms toward similar sustainability practices (DiMaggio & Powell, 1983). Stakeholder Theory emphasizes the need for firms to balance competing expectations from regulators, customers, NGOs, and suppliers (Freeman, 1984). TCE complements these perspectives by explaining why firms may engage in either substantive sustainability adoption or symbolic compliance when faced with regulatory and market pressures (Williamson, 2022).

1.1. Gaps in Existing SSCM Literature

Despite these advances, existing SSCM studies remain fragmented. Much of the literature focuses either on regulatory compliance or technological innovation, with limited attention to how multiple institutional pressures interact with leadership to shape sustainable procurement practices—particularly in emerging economies and state-owned enterprises. Research on the Chinese automotive sector remains especially limited, even though firms in this context face intense regulatory mandates, global trade pressures, and competitive benchmarking. This study addresses this gap by examining how institutional pressures and sustainable leadership jointly influence sustainable procurement implementation at Dongfeng Motor.

1.2. Integration of Theories to Address Literature Gaps

The existing SSCM literature has largely focused on either institutional drivers of sustainability adoption or stakeholder influences on supply chain decision-making, with limited attention to the cost and governance mechanisms that shape implementation depth. As a result, current research provides an incomplete explanation of how firms operating under strong regulatory and competitive pressures translate these external demands into operational procurement practices. Addressing this limitation, the present study integrates Institutional Theory, Stakeholder Theory, and Transaction Cost Economics to explain not only why sustainability pressures matter, but how sustainable leadership mediates their translation into sustainable procurement implementation.

1.3. Addressing the Gap in the Chinese Automotive Sector

While much of the existing SSCM literature focuses on either institutional drivers or stakeholder influences on sustainability adoption, it often overlooks the cost and governance mechanisms that determine how these pressures are operationalized in practice. As a result, there is a gap in understanding how firms, especially those facing significant regulatory and competitive pressures, translate external demands into concrete procurement practices. This study uniquely addresses this gap by integrating Institutional Theory, Stakeholder Theory, and Transaction Cost Economics to not only explain why external pressures drive sustainable practices, but also to identify how sustainable leadership mediates these pressures, transforming them into sustainable procurement implementation in a Chinese state-owned automotive firm.

The next section develops the theoretical framework and hypotheses based on this integrated perspective.

2. Theoretical Background

3.1 Introduction

3.1.1 Institutional Theory

This study draws on Institutional Theory, Stakeholder Theory, and Transaction Cost Economics (TCE) to explain how sustainable procurement practices emerge within complex supply chain environments.

Institutional Theory posits that organizational behavior is shaped by three forms of isomorphic pressure: coercive, mimetic, and normative (DiMaggio & Powell, 1983). Coercive pressures arise from regulations and powerful stakeholders, such as China's Dual Carbon Policy and the EU's Carbon Border Adjustment Mechanism (CBAM). Mimetic pressures occur when firms imitate successful competitors—such as BYD and Geely—under conditions of uncertainty. Normative pressures reflect social expectations, professional

norms, and voluntary sustainability standards. Together, these pressures encourage firms to adopt sustainability practices to maintain legitimacy and access to critical resources.

3.1.2 Stakeholder Theory

Stakeholder Theory complements this perspective by emphasizing that firms must balance competing demands from multiple stakeholders, including governments, suppliers, customers, NGOs, and internal managers (Freeman, 1984). In the context of sustainable procurement, stakeholder pressures often conflict—for example, regulators demand emissions reductions, while suppliers resist sustainability requirements due to cost concerns. How firms navigate these tensions significantly influences the depth and effectiveness of SSCM implementation.

3.1.3 Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE) provides additional insight into firms' strategic responses to institutional pressures. Regulatory compliance, carbon audits, and supplier certification introduce additional transaction costs, which may encourage firms to adopt sustainability practices symbolically rather than substantively (Williamson, 2022). TCE helps distinguish between superficial compliance and genuine organizational transformation, particularly in highly regulated industries.

3.1.4 Integrated Framework: Institutional Pressures, Stakeholder Demands, and TCE

Integrating these three perspectives allows for a more comprehensive understanding of sustainable procurement implementation. Institutional pressures explain *why* firms adopt sustainability practices, Stakeholder Theory explains *whose demands* matter most, and TCE explains *how* firms balance costs and legitimacy. In this study, sustainable leadership is positioned as a key mediating mechanism that translates external institutional pressures into concrete procurement practices within Dongfeng Motor's supply chain.

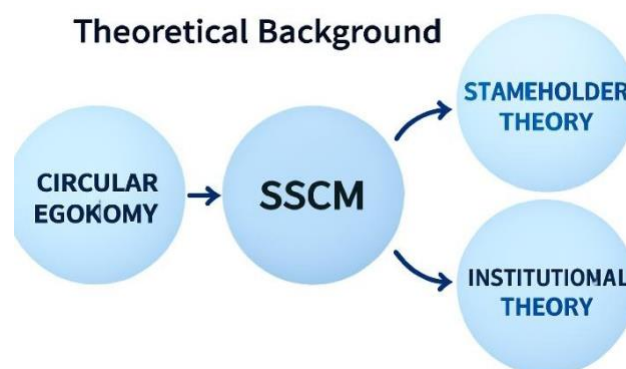


Figure 1 Theoretical Framework for Sustainable Supply Chain Management (SSCM)

3.2 The Impact of COVID-19 on SSCM

3.2.1 Disruptions in Supply Chains Due to COVID-19

The COVID-19 pandemic has dramatically changed the way companies approach Sustainable Supply Chain Management (SSCM). It has not only disrupted supply chains globally but also forced organizations to rethink how they integrate sustainability into their operations. With the crisis bringing unexpected challenges, businesses were quick to adopt digital technologies like blockchain, artificial intelligence (AI), and the Internet of Things (IoT), which have now become essential for maintaining supply chain continuity, increasing efficiency, and building resilience (Harrison et al., 2023; Chen & Zhang, 2024).

These digital tools are proving to be game changers, ensuring greater transparency and efficiency in global supply chains. This shift has been particularly crucial in industries such as automotive

manufacturing, which is both resource-intensive and highly carbon-emitting (Nguyen et al., 2023; Xu et al., 2022). By incorporating digital technologies, companies are better equipped to meet sustainability goals while navigating both regulatory and consumer pressures.

3.2.2 Adoption of Digital Technologies in Response to COVID-19

One of the most significant outcomes of the pandemic has been the acceleration of digitalization across industries, particularly within the realm of supply chains. In the face of unprecedented disruptions, companies were forced to quickly embrace technological solutions to maintain continuity and manage risk. The adoption of digital tools like blockchain, artificial intelligence (AI), and the Internet of Things (IoT) has become essential in navigating the post-pandemic landscape. These technologies, once seen as supplementary, are now crucial for ensuring greater transparency, efficiency, and resilience in global supply chains (Nguyen et al., 2023; Xu et al., 2022).

Research from 2022 to 2024 emphasizes the significant role that digital solutions play in improving supply chain traceability and driving sustainability outcomes. For example, blockchain technology is increasingly used to track products throughout their lifecycle, ensuring that sustainability standards and compliance requirements are met. Meanwhile, AI and IoT offer enhanced capabilities for monitoring, forecasting, and optimizing supply chain processes, further improving overall performance and reducing environmental impact (Wu & Liu, 2023; Lee et al., 2024).

3.2.3 Digitalization in Automotive Manufacturing

This digital transformation is particularly critical in automotive manufacturing, one of the most resource-intensive and carbon-emitting industries. The automotive sector has turned to digital solutions not only to comply with regulatory pressures but also to align with increasing consumer demand for sustainability. The integration of these digital tools has helped automotive manufacturers improve transparency, enhance sustainability credentials, and ensure compliance with both national and global regulations (Chen & Zhang, 2024).

3.2.4 Challenges and Opportunities in Digital Transformation

While the adoption of digital technologies presents new opportunities for more resilient and sustainable supply chains, it also brings challenges. Companies have had to address the complexities of integrating these advanced systems into existing supply chain infrastructure, including issues related to data security, privacy, and interoperability. Additionally, the rapid pace of adoption has underscored the need for employee upskilling and supplier engagement to ensure smooth transitions and maximize the benefits of these technological changes (Nguyen et al., 2023; Lee et al., 2024).

In conclusion, the COVID-19 pandemic has acted as a catalyst for digital transformation in supply chains, especially in industries like automotive manufacturing. As companies seek to build back better, they are leveraging digital tools not just for operational efficiency but also to meet their sustainability goals in response to both regulatory requirements and evolving consumer expectations. This ongoing digital integration into SSCM practices presents both challenges and opportunities, with the potential to reshape supply chains into more resilient, transparent, and sustainable systems (Harrison et al., 2023).

3.3 Digitalization Trends in SSCM

3.3.1 Role of Block chain, AI, and IoT in SSCM

chain practices. Recent studies from 2022 to 2024 show that technologies like blockchain, AI, and machine learning are leading the way in improving operational efficiency and ensuring greater transparency, especially in sectors like automotive manufacturing (Xu et al., 2023; Sharma & Singh, 2024). Blockchain is now a key tool for ensuring that sustainability standards are met by tracking the movement of products throughout their lifecycle and helping businesses comply with regulations (Chen et al., 2023).

Moreover, AI and machine learning are becoming integral for improving decision-making and optimizing resources. These technologies not only help companies predict demand and optimize inventory but also reduce waste by streamlining procurement processes, directly contributing to sustainable sourcing (Li & Zhang, 2022). With the rise of IoT-enabled digital supply chain networks, companies can monitor carbon emissions in real-time, ensuring their suppliers are meeting sustainability criteria, which is vital for staying compliant with environmental regulations.

3.3.2 Real-Time Monitoring and Sustainability Compliance

This tool is crucial for businesses aiming to verify their sustainable sourcing practices and reduce carbon emissions across the supply chain. Industries subject to strict regulations—such as those set by China's Dual Carbon Policy and the EU's Carbon Border Adjustment Mechanism (CBAM)—benefit significantly from blockchain's ability to offer transparency in sustainability efforts (Harrison et al., 2023).

On the other hand, AI and machine learning are significantly enhancing decision-making and resource optimization. By leveraging data analytics, AI helps businesses predict demand, optimize inventory, and detect inefficiencies in procurement, resulting in better utilization of resources and reduced waste (Li & Zhang, 2022). Additionally, AI's ability to forecast future needs helps businesses improve energy efficiency and streamline their supply chain processes. This directly contributes to more sustainable sourcing and green procurement.

Furthermore, the rise of digital supply chain networks—powered by IoT sensors and AI—enables real-time monitoring of carbon emissions and supplier performance. This technology ensures supplier compliance with sustainability criteria, such as energy efficiency and waste reduction (Zhang et al., 2023). Through these digital platforms, companies can easily track and improve their sustainability efforts, ensuring they meet the required environmental standards.

To sum up, digitalization has become essential in achieving long-term sustainability goals in supply chains. The integration of blockchain, AI, and digital supply chain networks is not just about enhancing efficiency but about creating more transparent, resilient, and sustainable supply chain ecosystems. These technologies help companies meet regulatory requirements, respond to consumer demands, and, most importantly, contribute to the broader sustainability objectives. Moving forward, these digital solutions will continue to drive change and innovation, helping firms build more sustainable and future-proof supply chains.

3.4 Incorporation of Economic Theories (Transaction Cost Economics)

Building on the technological advances discussed, it is also important to integrate Transaction Cost Economics (TCE) into this study's framework. TCE provides a deeper understanding of how regulatory pressures, such as China's Dual Carbon Policy and the EU's Carbon Border Adjustment

Mechanism, influence companies' sustainable procurement practices. It helps explain why certain pressures lead to significant, long-term changes in organizational operations, while others may only result in superficial compliance (Williamson, 2022; Zhou et al., 2023).

For instance, regulatory pressures like carbon reporting requirements often come with added costs—such as audits and certifications—but they push companies toward adopting sustainable practices. However, some organizations may only make surface-level changes to meet these demands without truly transforming their operations. TCE helps us understand why this happens and how the interaction of these pressures shapes businesses' sustainability journeys.

TCE emphasizes that organizations strive to minimize transaction costs when interacting with external entities (Williamson, 2022). When applied to sustainable supply chain management (SSCM), TCE helps explain how certain institutional pressures—particularly regulatory requirements like China's Dual Carbon Policy and the EU's Carbon Border Adjustment Mechanism—force organizations to adopt sustainable procurement practices. However, these regulatory pressures introduce additional costs—including reporting requirements, audits, and certifications (Zhou et al., 2023). While these pressures push organizations toward sustainability, they do not always result in genuine, deep-rooted change. Instead, some companies may only make superficial adjustments to meet the demands, without transforming their core operations (Li & Zhang, 2022). On the other hand, mimetic pressures—where firms imitate industry leaders to maintain legitimacy—can also be explained through TCE. In the face of competitive uncertainty, companies might adopt sustainability measures, not necessarily because of the direct economic benefits, but to avoid the costs associated with being seen as non-compliant or uncompetitive (Jain et al., 2023). In the case of Dongfeng Motor, mimicking the best practices of competitors like BYD and Geely helps the company maintain its market position while simultaneously reducing transaction costs related to reputation and legitimacy in the eyes of regulators, consumers, and other stakeholders (Chen et al., 2023).

Incorporating TCE into the theoretical framework also strengthens the analysis by distinguishing between substantive adoption—which leads to meaningful, long-term organizational change—and symbolic adoption, which only brings about surface-level compliance. This distinction is crucial for understanding the varying impacts of institutional pressures, particularly within the complex regulatory environment of China's automotive sector (Harrison et al., 2022).

By combining TCE with Institutional Theory and Stakeholder Theory, this study offers a more comprehensive view of how regulatory, competitive, and normative forces interact to shape sustainable procurement practices. This integrated approach provides a richer understanding of the dynamics driving sustainability in the automotive industry, particularly in emerging economies.

3.5 Contextualizing Dongfeng Motor: Institutional Pressures, Sustainability, and Supply Chain Management

Now, let's take a closer look at Dongfeng Motor, one of China's largest state-owned enterprises

(SOEs) and a key player in the global automotive market. Dongfeng's experience offers valuable insights into how institutional pressures—like China's Dual Carbon Policy and international regulations like the EU's CBAM— affect sustainability efforts. As a state-owned enterprise, Dongfeng's approach to sustainability is closely aligned with the country's broader green industrial transitions (Wang et al., 2023).

Dongfeng has taken significant steps to embed sustainability into its supply chain through initiatives such as the Supplier Green Code 2024, blockchain-enabled carbon audits, and battery recycling partnerships. These actions highlight how the company balances compliance with regulatory standards while enhancing its sustainability reputation on the global stage, particularly in regions with stringent environmental regulations, such as Europe and North America. Dongfeng's experience provides a compelling example of how institutional forces drive corporate sustainability practices in emerging economies.

Dongfeng Motor Corporation, one of China's "Big Four" automobile manufacturers, was founded in 1969 and remains a state-owned enterprise (SOE) of national importance. Its status as a state-owned entity makes Dongfeng particularly sensitive to evolving national industrial policies, such as China's Dual Carbon Policy, which mandates carbon peaking by 2030 and carbon neutrality by 2060. This policy encourages Dongfeng to align its business strategies with broader government-driven green industrial transitions, underscoring the company's crucial role in driving sustainability within China's automotive sector. As an SOE, Dongfeng's sustainability trajectory is inherently linked to state objectives, offering a unique case for examining how institutional pressures shape corporate responses to sustainability in emerging economies (Wang et al., 2023). Dongfeng operates a vast network of around 3,000 tier-1 suppliers, covering essential procurement categories such as powertrain systems, new energy batteries, electronics, and logistics. The scale and diversity of this supplier base present both challenges and opportunities for embedding sustainability practices across Dongfeng's operations. This extensive supply chain offers a valuable lens for examining the broader automotive sector in China, where supply chain complexity intersects with institutional demands for low-carbon transformation and sustainable practices (Chen et al., 2024).

On the global stage, Dongfeng faces increased exposure to international regulations, particularly the European Union's Carbon Border Adjustment Mechanism (CBAM), which impacts the competitiveness of its exports. Domestically, Dongfeng competes with local industry leaders like BYD, Geely, and NIO, which have set strong sustainability benchmarks. These pressures illustrate how coercive and mimetic pressures influence Dongfeng's procurement decisions and sustainability initiatives, as the company must balance compliance with global standards and maintaining competitiveness within China's rapidly evolving market.

3.6 Contextualizing Dongfeng Motor: Institutional Pressures, Sustainability, and Supply Chain Management

In response, Dongfeng has introduced a series of green initiatives, such as the Supplier Green Code 2024, blockchain-enabled carbon audits, and battery recycling partnerships. These initiatives

not only help Dongfeng comply with state policies but also position the company as a leader in sustainability in international markets. The adoption of such measures shows Dongfeng's commitment to ensuring regulatory compliance while simultaneously enhancing its reputation in global supply chains, particularly in regions like Europe and North America, where environmental standards are becoming increasingly stringent.

Ultimately, Dongfeng Motor offers an important case study for understanding sustainable supply chain management in China. Its dual role as a state-owned enterprise and a significant player in the global automotive market allows it to embody the intersection of coercive, mimetic, and normative pressures. Through its leadership in sustainability initiatives, Dongfeng demonstrates how corporate sustainability can be operationalized in response to both external regulations and market expectations, providing valuable insights into how institutional pressures shape corporate practices in emerging economies. Dongfeng's experience underscores how such pressures can foster not only regulatory compliance but also long-term competitive advantages through the integration of sustainability into the company's business model (Huang et al., 2022).

3.7 Clarifying the Mediation Role of Leadership

In this study, the role of leadership as a mediator between external pressures and sustainable procurement

implementation (SPI) is examined and contrasted with existing literature, particularly in emerging economies. While leadership has long been recognized as an essential factor in driving sustainable practices, this paper highlights a unique aspect—how leadership mediates the impact of external pressures like coercive and mimetic forces on sustainable procurement outcomes. This aspect is particularly important in the context of state-owned enterprises (SOEs) like Dongfeng Motor, where leadership does not merely respond to external pressures, but actively interprets and translates these pressures into actionable strategies.

Many studies have treated leadership as a direct driver of sustainable outcomes, where leaders are seen as the catalysts for implementing sustainability practices. In contrast, this research shifts the focus to explore how leadership plays a mediating role, specifically in how external regulatory mandates (such as China's Dual Carbon Policy) and industry benchmarks (like the EU's Carbon Border Adjustment Mechanism) are transformed into real procurement strategies. In Dongfeng, leadership is not simply about implementing pre-existing strategies but is a crucial bridge that connects the external pressures with the internal practices of the company. The study situates Dongfeng's leadership role within the broader literature, revealing how it differs from or extends traditional models of leadership in developed economies. While leadership in many developed economies is often seen as simply implementing sustainability practices set by the organization, leadership within Dongfeng faces a more complex environment. The company operates within a web of institutional pressures, such as stringent regulations and competitive forces, which require leadership to balance these pressures and effectively translate them into sustainable procurement practices. This complexity is amplified in SOEs, where leadership must navigate both internal organizational constraints and the demands of the state and regulatory bodies.

This research also contrasts with other studies that focus on leadership in emerging economies, such as those by Jones et al. (2022) and Patel & Sharma (2023), which have often emphasized leadership's role in directly implementing sustainability without considering its mediating

function in response to external pressures. By focusing on the mediating role of leadership, this paper contributes new insights, particularly in the context of SOEs, where leadership is instrumental in bridging the gap between external forces and internal procurement decisions.

Ultimately, this study underscores the vital role that leadership plays in ensuring that sustainability practices go beyond symbolic compliance and are genuinely embedded in the organization's operations. By mediating the effects of external institutional pressures, leadership helps transform regulatory and market demands into meaningful, actionable procurement strategies. This adds an important layer to our understanding of how leadership functions in state-owned enterprises, offering a framework for how sustainability can be integrated into procurement practices in complex institutional environments.

This unique contribution is significant for both academics and practitioners, as it highlights the importance of leadership in navigating institutional pressures and provides a deeper understanding of how SOEs can align external demands with their internal sustainability objectives.

3.8 Isomorphic forces and sustainable procurement implementation

DiMaggio and Powell's (1983) seminal work on institutional isomorphism identified three mechanisms— **coercive**, **normative**, and **mimetic** pressures—that explain why organizations converge around similar practices. These forces remain highly relevant in understanding how firms such as Dongfeng Motor Corporation embed sustainability into their supply chains.

Coercive Pressures

Coercive pressures originate from actors with the authority to impose rules or withdraw critical resources. For Dongfeng, the most visible sources of coercion are state-driven regulations—notably China's *dual carbon policy*—and international mechanisms such as the EU Carbon Border Adjustment Mechanism (CBAM). These frameworks compel firms to reduce emissions, audit suppliers, and adopt verifiable green procurement standards (**Behraves et al., 2022**). Beyond regulators, consumers and NGOs now exert tangible influence, pushing for transparency, ethical sourcing, and measurable environmental performance (**Acquah et al., 2021**). In practice, these pressures are not abstract. They translate into specific initiatives such as blockchain-enabled carbon audits and battery-recycling partnerships, which Dongfeng highlights in its sustainability disclosures (**Dongfeng, 2023**). The risks of ignoring coercive demands are equally concrete: legal penalties, reputational damage, and potential exclusion from export markets (**Cao et al., 2014; Raj et al., 2020**).

***Hypothesis 1a:** Coercive forces have a significant positive influence on Dongfeng's sustainable supply chain practices.*

Normative Pressures

Normative pressures reflect the expectations of society, professional associations, and local communities. These often manifest less as strict mandates and more as “soft rules” that confer legitimacy when followed. For Dongfeng, normative drivers include growing demands for accountability and transparency in corporate sustainability reporting (**Brammer & Walker, 2011**). Investors, customers, and community stakeholders increasingly expect the firm to embrace environmental and social standards that go beyond legal minimums.

Chinese regulatory frameworks, including the *Public Procurement Law*, reinforce these

expectations by embedding sustainability into tendering and supplier evaluation (Yang & Kang, 2020). Yet, normative pressures can be a double-edged sword: they encourage alignment with social values but may not yield deep organizational change without adequate incentives or enforcement. Evidence

suggests that firms often adopt such practices to safeguard reputation and gain market legitimacy, even in the absence of strong sanctions (Acquah et al., 2021). Dongfeng's voluntary roll-out of the Supplier Green Code 2024 exemplifies this dynamic—less about legal compliance, more about signalling credibility to an increasingly sustainability-conscious marketplace.

Hypothesis 1b: Normative forces have a significant positive influence on Dongfeng's sustainable supply chain practices.

Mimetic Pressures

Mimetic pressures arise when firms imitate successful peers, particularly under conditions of uncertainty. In the competitive Chinese automotive sector, Dongfeng closely watches rivals such as BYD, Geely, and NIO, which have become recognized leaders in sustainable innovation (Etse et al., 2022). By emulating these frontrunners—through green procurement initiatives and supplier development programs—Dongfeng aims to bolster both its reputation and competitive standing (Masocha & Fatoki, 2018).

However, imitation does not always guarantee transformation. Scholars warn that mimetic adoption can result in symbolic compliance—the outward appearance of sustainability without its full integration into daily operations (Raj et al., 2020). Dongfeng's flagship sustainability platforms may thus operate as legitimacy-enhancing symbols while systemic change across all supplier tiers remains a work in progress.

Hypothesis 1c: Mimetic forces have a significant positive influence on Dongfeng's sustainable supply chain practices.

Consolidated Hypotheses

Bringing these arguments together, the study formulates the following testable hypotheses:

H1a: Coercive forces—such as China's dual carbon policy, EU CBAM, and NGO/consumer demands—positively influence Dongfeng's adoption of sustainable supply chain practices.

H1b: Normative forces—driven by social norms, stakeholder expectations, and voluntary codes such as the Supplier Green Code 2024—positively influence Dongfeng's sustainable supply chain practices.

H1c: Mimetic forces—arising from benchmarking against leading competitors—positively influence Dongfeng's sustainable supply chain practices, though the depth of change may vary between symbolic and systemic adoption.

Table 1. Hypotheses Examining How Isomorphic Forces Shape Dongfeng's Sustainable Supply Chain Practices

<i>Isomorphic Force</i>	<i>Source in Dongfeng</i>	<i>Illustrative Example</i>	<i>Expected Outcome</i>
Coercive	China's dual carbon policy, EU Carbon Border Adjustment (CBAM), external stakeholder pressures	Blockchain-based carbon audits	Hypothesis 1a: Coercive forces have a significant positive influence on Dongfeng's sustainable supply chain practices.

Normative	Social norms, stakeholder expectations	Green procurement programs	Hypothesis 1b: Normative forces have a significant positive influence on Dongfeng's sustainable supply chain practices.
Mimetic	Benchmarking against competitors (BYD, Geely, NIO)	Green procurement programs	Hypothesis 1c: Mimetic forces have a significant positive influence on Dongfeng's sustainable supply chain practices.

Isomorphic forces (Coercive, normative and Mimetic) and sustainable leadership

Sustainable leadership is increasingly recognized as a key driver of effective sustainable supply chain management (SSCM). As [Liao \(2022\)](#) highlights, leaders who prioritize sustainability do not simply focus on short-term goals but adopt a holistic approach that integrates environmental, social, and economic considerations. These leaders understand the complex interconnections between these elements and recognize that sustainability is not just a passing trend but a long-term commitment that adds value to both their organization and society at large. By embedding sustainability into the core of their organizational strategy, these leaders create a culture that prioritizes environmental protection, social equity, and economic viability, thus setting the stage for sustainable supply chain practices.

The role of institutional pressures—coercive, normative, and mimetic—cannot be overlooked in shaping the decisions of these leaders. Sustainable leadership is often influenced by both internal motivations and external pressures, with institutional forces pushing leaders toward the adoption of sustainable practices. These forces

guide organizations to integrate sustainability into their supply chains, either by incentivizing best practices or imposing legal and social expectations. For Dongfeng Motor Corporation, these pressures come from the need to balance its internal sustainability goals with the demands of external stakeholders, including governments, regulators, and competitors.

3.9 Coercive Pressures and Sustainable Leadership

Coercive pressures are perhaps the most direct and visible of the isomorphic forces. These pressures come from external entities that have the power to enforce compliance through regulations, legal requirements, or the withdrawal of critical resources. In Dongfeng's case, coercive pressures primarily stem from government regulations—most notably China's dual carbon policy, which mandates aggressive carbon reduction targets, alongside global pressures like the EU's Carbon Border Adjustment Mechanism (CBAM). These regulations compel Dongfeng to measure, report, and reduce carbon emissions in its supply chain to comply with both domestic and international environmental standards.

For Dongfeng's leadership, coercive pressures are not just about avoiding penalties—they are about staying aligned with the broader global sustainability goals. The company has proactively adopted measures such as green procurement practices, blockchain-based carbon audits, and initiatives for battery recycling partnerships. These responses reflect how coercive leadership shapes Dongfeng's operational strategies in a way that meets legal and regulatory demands. Without compliance, Dongfeng risks reputational damage, legal penalties, and potential loss of

market access (Cao et al., 2014; Raj et al., 2020).

Hypothesis 2a: Coercive forces have a significant positive influence on sustainable leadership at Dongfeng Motor.

This hypothesis suggests that Dongfeng's leadership is strongly influenced by **coercive pressures**, which push the company to adopt green procurement practices, reduce emissions, and integrate environmental compliance into their supply chain operations.

Normative Pressures and Sustainable Leadership

Normative pressures are subtler but no less influential. These pressures arise from societal expectations and the need to conform to industry-wide norms and values. For Dongfeng, these pressures manifest through the growing demand for transparency and accountability in corporate sustainability. Stakeholders such as consumers, investors, and NGOs expect the company to integrate sustainability into its core supply chain operations. These pressures are reinforced by both local regulatory frameworks, such as China's Public Procurement Law, and global standards that demand environmental and social responsibility in procurement (Yang & Kang, 2020).

While normative pressures can guide firms toward adopting sustainable practices, they may not always have the same intensity or direct impact. In Dongfeng's case, while these pressures are important, they do not always have the same force as coercive pressures. The absence of strong enforcement mechanisms, for example, means that firms may be less compelled to adopt sustainability practices if the financial costs or competitive pressures outweigh the perceived benefits. Nevertheless, Dongfeng's voluntary participation in initiatives such as the Supplier Green Code 2024 highlights its effort to align with societal expectations and enhance its reputation in the market.

Hypothesis 2b: Normative forces have a significant positive influence on sustainable leadership at Dongfeng Motor.

This hypothesis proposes that Dongfeng's leadership is significantly shaped by normative pressures, driving the company to adopt sustainability practices that meet both industry norms and societal expectations. These pressures encourage Dongfeng to engage with stakeholders and integrate sustainability into its supply chain governance.

3.10 Mimetic Pressures and Sustainable Leadership

Mimetic pressures stem from the tendency of organizations to imitate the practices of successful peers, especially when faced with uncertainty or competition. For Dongfeng, mimetic pressures are clear in its adoption of practices modelled after industry leaders such as BYD, Geely, and NIO, which have set high standards for sustainable supply chains (Etse et al., 2022). By adopting similar green procurement initiatives and supplier sustainability programs, Dongfeng seeks to bolster its competitive advantage and reputation in the marketplace. While mimetic pressures can lead to the diffusion of best practices, they do not always guarantee genuine transformation. It's possible for organizations to symbolically adopt sustainability practices without fully integrating them into the fabric of their operations. In Dongfeng's case, flagship programs like the green procurement platform may represent a symbolic adoption rather than a comprehensive systemic change across all tiers of its supply chain. This distinction is crucial as it highlights that mimetic behaviour may be more about competitive positioning than about deeply transforming supply

chain practices.

Hypothesis 2c: Mimetic forces have a significant positive influence on sustainable leadership at Dongfeng Motor.

This hypothesis posits that Dongfeng's leadership is influenced by mimetic pressures to adopt practices modeled by successful competitors. However, it also implies that mimetic adoption might be symbolic rather than indicative of true systemic change in its supply chain operations.

3.11 Consolidated Hypotheses

Building on these insights, the following hypotheses are posited:

H2a: Coercive pressures significantly influence Dongfeng's leadership in sustainable supply chain practices, driving compliance with regulations and global sustainability standards.

H2b: Normative pressures influence Dongfeng's leadership to conform to societal expectations, enhancing its reputation and securing legitimacy through sustainable practices.

H2c: Mimetic pressures lead Dongfeng's leadership to adopt best practices from industry peers, boosting its competitiveness and market positioning

3.12 Sustainable Leadership and Sustainable Supply Chain Practices at Dongfeng Motor

Sustainable leadership is a leadership approach that seamlessly integrates sustainability principles into the fabric of organizational decision-making (Adjei-Bamfo et al., 2019; Walker & Brammer, 2012). For Dongfeng Motor Corporation, sustainable leadership isn't just about implementing policies—it's about creating an organizational culture where environmental sustainability, social equity, and economic performance are prioritized across its entire supply chain. This leadership style is essential in ensuring that sustainability becomes more than just a set of objectives; it becomes a core element of the company's strategy and decision-making process. Sustainable procurement, as part of this broader leadership vision, involves sourcing goods and services that are produced in a way that minimizes environmental impact and promotes social welfare. Leaders who champion sustainability principles are likely to prioritize green procurement practices, ensuring their decisions align with circular economy goals and green procurement standards (Etse et al., 2022).

At Dongfeng, sustainable leadership plays a pivotal role in shaping a sustainability-driven organizational culture. This leadership encourages employees, suppliers, and other stakeholders to adopt sustainable procurement practices. Key elements of this leadership style include setting clear sustainability goals, implementing supportive policies, and providing the resources and training needed to align everyone within the organization with the company's sustainability objectives. This approach is particularly important as Dongfeng faces complex, competing stakeholder demands—ranging from regulatory compliance to consumer expectations. Sustainable leadership helps cultivate a culture of innovation and compliance in sustainable supply chain practices.

Studies, such as those by Küçükog̃lu and Pinar (2016), show that green organizational leadership significantly influences innovation. Similarly, Zhu et al. (2018) emphasize that leadership influence and knowledge transfer within organizations are crucial for achieving sustainability goals like circular procurement and sustainable sourcing. For Dongfeng, leadership support for green procurement and supply chain sustainability ensures that external regulations—such as the

Supplier Green Code 2024—are met while fostering a corporate culture that integrates sustainability across all operations.

Research by [Etse et al. \(2022\)](#) further underscores the importance of top management in mediating the relationship between external regulatory pressures and the adoption of sustainable procurement practices. At Dongfeng, top leadership plays a critical role in translating government policies, such as China's dual carbon policy, into actionable supply chain practices. This ensures compliance with legal requirements while driving innovation in sustainable practices across the supply chain. This form of leadership is increasingly crucial as companies face mounting pressure to not only comply with regulations but also to meet the sustainability expectations of diverse stakeholders, including consumers, investors, and regulatory bodies.

The crucial role of leadership in driving sustainable practices is highlighted in the study by [Tang et al. \(2020\)](#), which identifies a positive relationship between leadership behaviour and sustainable public procurement (SPP) in China. Their findings suggest that leaders can cultivate a sustainability-oriented culture by setting clear sustainability goals, promoting values that prioritize environmental responsibility, and providing resources to support sustainable procurement efforts. For Dongfeng, the leadership's proactive approach—setting explicit sustainability goals and providing the infrastructure necessary for green procurement initiatives—ensures that the company not only meets regulatory expectations but also positions itself as a leader in sustainability within the automotive sector.

3.13 Hypothesis Formulation

Based on the insights discussed and recognizing the significant role of leadership in advancing sustainability, the following hypothesis is proposed:

H3: Sustainable leadership has a **significantly positive** influence on the implementation of sustainable supply chain practices at Dongfeng Motor.

Explanation: This hypothesis suggests that Dongfeng's leadership, by Embracing sustainability as a core organizational value, will prioritize sustainable procurement, integrate green logistics, and adopt circular economy practices throughout its supply chain operations. Leadership's commitment to sustainability will not only help the company comply with regulatory requirements but will also

3.14 Sustainable Supply Chain Management in the Automotive Industry

Sustainable Supply Chain Management (SSCM): A Growing Research Focus

Sustainable supply chain management (SSCM) has rapidly evolved into a central theme in operations and logistics research. This shift reflects the growing realization that environmental, social, and economic considerations must be integrated into every stage of the supply chain, from procurement to production and distribution ([Carter & Rogers, 2008](#); [Seuring & Müller, 2008](#)). Scholars have long noted that the majority of an organization's environmental and social impacts occur upstream, within supply chains. Key areas of concern include supplier practices, logistics operations, and the movement of materials ([Brammer & Walker, 2011](#); [Dubey et al., 2017](#)). In response, companies are increasingly weaving green procurement, closed-loop logistics, and

circular economy models into their supply chain strategies (Raj et al., 2020; Qazi & Appolloni, 2022).

However, in industries like the automotive sector, the sustainability challenge becomes particularly complex. The production of vehicles relies on carbon-intensive processes, extensive global logistics, and critical raw materials such as lithium, cobalt, and steel (Ruan & Lv, 2022). With the rise of electrification, supply chain emissions and the dependency on finite resources have moved to the forefront of sustainability concerns, signaling a shift from innovation at the product level to more sustainable management of the upstream supply chain (Zhu et al., 2022). Recent studies highlight the critical role of digital technologies—including blockchain, AI, and the Internet of Things (IoT)—in enhancing supply chain traceability, carbon auditing, and risk management (Behravesht et al., 2022). Despite the growing prominence of these technologies, however, the literature remains fragmented, with limited focus on the organizational dynamics and stakeholder interactions that shape the adoption of sustainable supply chain practices, particularly in emerging economies.

3.15 Stakeholder Theory and Its Role in Supply Chain Sustainability

Stakeholder Theory (Freeman, 1984) provides a valuable lens through which to examine the relationships between organizations and the diverse actors influencing their decisions. According to this theory, organizations do not exist in isolation; they are embedded within a network of relationships involving shareholders, governments, NGOs, suppliers, and customers, all of whom exert influence on organizational strategies. Unlike the more traditional shareholder-centric perspectives that prioritize financial returns, Stakeholder Theory emphasizes the need for organizations to balance the often-conflicting interests of multiple groups (Gray et al., 1996; Campbell, 2007).

Within the context of supply chain management, researchers have drawn a clear distinction between external and internal stakeholders. External factors, such as regulators, NGOs, customers, and competitors, often impose coercive or normative pressures. Governments create regulatory frameworks, NGOs monitor compliance, consumers demand transparency, and competitors drive mimetic behavior, encouraging others to adopt sustainability practices (Zaidi et al., 2019; Etse et al., 2022). On the other hand, internal stakeholders—including managers, employees, and suppliers—provide a mix of enabling and constraining forces. While managerial commitment and employee engagement can accelerate the adoption of sustainable procurement practices, suppliers may resist due to cost concerns, technological limitations, or misaligned incentives (Grandia & Kruyen, 2020; Nsiah-Sarfo et al., 2023).

Empirical studies applying Stakeholder Theory to supply chain management have revealed both stimulating and hindering effects of stakeholder pressures on sustainability adoption. For example, Rahman et al. (2024) illustrate how competing stakeholder interests create tensions within the garment sector, while Nsiah-Sarfo et al. (2023) explore stakeholder pressures on sustainable procurement) and largely focused on developed economies or industries with high levels of regulation.

Table 2. Sustainable Supply Chain Management in the Automotive Industry

Aspect	Description	Examples
Key Drivers	Factors driving sustainability adoption	Regulatory Compliance: China's dual carbon policy, EU's CBAM; Consumer Demand: Eco-friendly products; Competitive Pressure: Benchmarking against BYD, Geely
Circular Economy (CE)	Shift toward recycling, reuse, and waste reduction	Green Procurement: Recyclable materials; Lifecycle Management: Design for disassembly
Carbon Emissions Reduction	Minimizing carbon footprint across production and logistics	Carbon Audits: Blockchain tracking; Electrification: Reducing production emissions
Supplier Engagement	Involving suppliers in sustainable practices and compliance	Supplier Green Code: Dongfeng's sustainability code; Circular Economy: Supplier recycling programs
Technological Integration	Adoption of digital technologies to optimize sustainability	Blockchain: Emissions tracking; AI & IoT: Real-time supply chain sustainability monitoring
Sustainability Certifications	Standards ensuring sustainable practices	ISO 14001 (Environmental Management); Supplier Certifications: ISO 20400 (Sustainable Procurement)

This table summarizes the key components of Sustainable Supply Chain Management (SSCM) in the automotive sector, integrating various drivers, technologies, and initiatives for sustainability.

3.16 Research Gap and Conceptual Foundation

While Sustainable Supply Chain Management (SSCM) and have been extensively applied across various manufacturing sectors, their application within the Stakeholder Theory context of the Chinese automotive industry remains underexplored. Existing studies in this sector primarily focus on technological transitions, such as the shift to electric vehicles (EVs), hydrogen fuel cells, and the adoption of digital platforms, as well as policy frameworks aimed at achieving carbon neutrality (Ntsondé & Aggeri, 2021; Liao, 2022). However, a critical gap exists in understanding how multiple stakeholders with often conflicting interests simultaneously shape supply chain practices in the Chinese automotive industry. This gap is particularly notable given the unique pressures faced by the sector, including:

- **Governmental coercive pressures**, such as ambitious dual carbon targets,
- **Global regulatory frameworks**, such as carbon border adjustments (CBAM),
- **Consumer demands** for green and affordable vehicles,
- **Non-governmental organizations (NGOs)** monitoring corporate legitimacy and sustainability efforts, and
- **Competitive pressures** from firms like **BYD** and **Geely**, which set benchmarks for sustainability.

practices. By integrating Stakeholder Theory, Institutional Theory, and Transaction Cost Economics (TCE), this research explores not only why these pressures matter but also how leadership enables firms to navigate them, especially in an emerging economy where regulatory, competitive, and consumer demands intersect in complex ways. Through this approach, the study

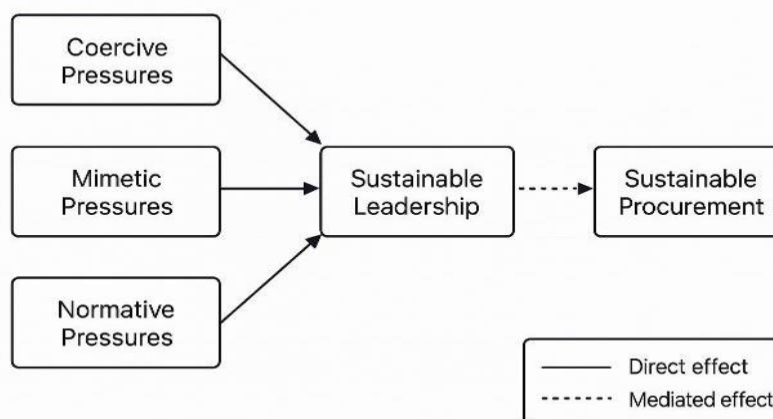
extends the SSCM literature by providing a comprehensive framework for understanding the dynamic interplay of institutional forces in shaping supply chain practices within the Chinese automotive sector.

On the internal front, while managers push for compliance with sustainable practices, suppliers often resist adopting sustainability codes due to cost concerns and operational constraints.

In light of these challenges, Dongfeng Motor offers a unique and valuable case for study. As one of China's largest state-owned automobile manufacturers, Dongfeng has been actively involved in introducing sustainability initiatives, including the Supplier Green Code 2024, blockchain-enabled carbon audits, and battery recycling partnerships. However, the complex interplay of stakeholder demands—especially when their interests conflict—remains underexplored in existing research.

This study seeks to fill this gap by applying Stakeholder Theory to investigate how both external and internal stakeholders influence Dongfeng's supply chain sustainability practices. The aim is to understand how the company navigates and balances these competing pressures while embedding sustainability into its operations. The conceptual framework developed for this study (Figure 1) illustrates these relationships, providing the foundation for the subsequent empirical analysis.

Figure N°2 : A Model of Institutional Pressures and Sustainable Leadership in Sustainable Procurement Source :



3. Methodology

4.1 Population and Sampling Procedure

For this study, the target population included procurement managers, supply chain executives, and sustainability officers at Dongfeng Motor Group and its network of tier-1 suppliers. In this context, tier-1 suppliers are defined as the organizations that provide key components, raw materials, and logistics services directly to Dongfeng. According to the company's Environmental, Social, and Governance (ESG) disclosures, Dongfeng had approximately 3,000 tier-1 suppliers as of 2023. These suppliers cover major procurement categories, such as powertrain systems, new energy batteries, electronics, and logistics.

Given the large number of suppliers, a representative sample was necessary to ensure reliable

results. Using the sample size determination table from Bartlett et al. (2001, p. 48), a minimum sample size of 341 respondents was calculated. This calculation assumed a population size of 3,000, a 5% margin of error, and the use of categorical data. To account for potential non-responses, a 60% response rate was applied, based on [Fowler's \(2013\)](#) recommendation. This resulted in the distribution of 570 questionnaires.

A stratified random sampling method was employed to ensure that the sample accurately reflected the diversity within Dongfeng's procurement structure. The strata were defined by supplier categories (such as powertrain, batteries, electronics, logistics) and organizational roles (e.g., procurement officer, sustainability manager, supply chain coordinator). This approach guaranteed that both Dongfeng's internal procurement team and key representatives from suppliers involved in sustainability programs—like the Supplier Green Code 2024 and blockchain-enabled carbon audits—were well-represented in the sample.

This sampling design was chosen because it captured the views of individuals who are directly involved in sustainable supply chain management (SSCM), ensuring that the study's findings are both valid and reliable. The design of the population and sampling strategy reflects a deliberate effort to ensure both representativeness and validity in capturing perspectives on sustainable supply chain management (SSCM) within Dongfeng Motor Group.

By focusing on procurement managers, supply chain executives, and sustainability officers, the study targets the decision-makers most directly responsible for operationalizing sustainability goals into procurement practices. This focus aligns with prior research, which emphasizes that managerial perspectives are critical in mediating external institutional pressures and shaping supplier relationships ([Etse et al., 2022](#); [Grandia & Kruyen, 2020](#)).

The inclusion of tier-1 suppliers—a network of approximately 3,000 organizations—strengthens the study's external validity. Tier-1 suppliers occupy a pivotal position in automotive supply chains, as they provide core components (e.g., powertrains, batteries, electronics) and logistics services. Given that upstream supply chains are where most environmental and social impacts occur ([Seuring & Müller, 2008](#)), their representation ensures that the dataset reflects the full scope of sustainability challenges and opportunities.

The use of stratified random sampling enhances methodological robustness by ensuring that supplier categories and organizational roles are proportionately represented. This approach avoids the bias that might arise from convenience or purposive sampling and captures the heterogeneity of perspectives across functional areas. By stratifying according to both supplier type and respondent role, the study achieves a balance between breadth (sectoral representation) and depth (managerial experience).

The calculation of a minimum sample size ($n = 341$) using [Bartlett et al.'s \(2001\)](#) formula, combined with an assumed 60% response rate, demonstrates methodological transparency and planning rigor. The actual distribution of 570 questionnaires not only anticipates non-responses but also underscores a proactive strategy to safeguard statistical power. This approach ensures that subsequent PLS-SEM analysis is grounded in sufficient sample adequacy, thereby enhancing the credibility of causal inferences.

Overall, the sampling procedure is aligned with best practices in survey-based SSCM research. It captures the perspectives of actors directly involved in the implementation of Dongfeng's sustainability initiatives (e.g., Supplier Green Code 2024, blockchain-enabled carbon audits),

ensuring ecological validity. By integrating internal (Dongfeng staff) and external (suppliers) respondents, the study mitigates single-source bias and provides a holistic view of how sustainability policies diffuse across supply chain networks

Table 3. Population and Sampling Procedure

Aspect	Description
Target Population	Procurement managers, supply chain executives, and sustainability officers within Dongfeng Motor Group and its tier-1 suppliers.
Tier-1 Suppliers	Organizations that provide key components, raw materials, and logistics services directly to Dongfeng. Approximately 3,000 suppliers as of 2023.
Supplier Categories	Powertrain systems, new energy batteries, electronics, and logistics .
Sample Size	Minimum sample size of 341 calculated using Bartlett et al.'s (2001) sample size determination table.
Response Rate	A 60% response rate was assumed based on Fowler's (2013) recommendation, resulting in the distribution of 570 questionnaires.
Sampling Procedure	Stratified random sampling by supplier category (e.g., powertrain, batteries, electronics, logistics) and organizational role (e.g., procurement officer, sustainability manager, supply chain coordinator).

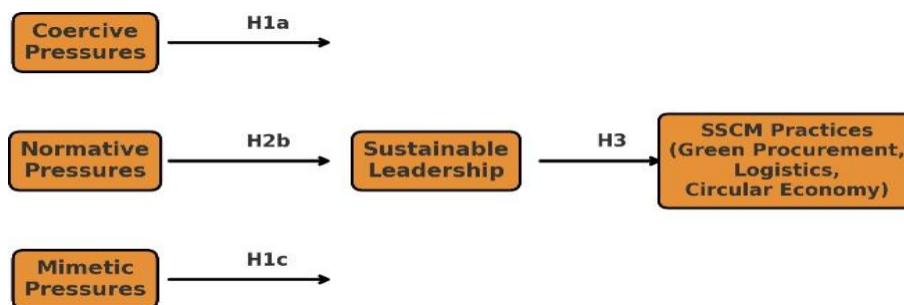


Figure N°3 : Pressures That Drive Companies Toward Green Practices Through Sustainable Leadership

The study's population and sampling procedure are designed to ensure robust and representative findings. The target population includes procurement managers, supply chain executives, and sustainability officers at Dongfeng Motor and its tier-1 suppliers, reflecting diverse perspectives on sustainable supply chain management (SSCM) ([Fowler, 2013](#)). By focusing on key supplier categories—such as powertrain systems, new energy batteries, electronics, and logistics—the study captures a comprehensive view of the supply chain ecosystem ([Ntsondé & Aggeri, 2021](#)).

The sample size of 341, calculated using *Bartlett et al.'s (2001)* guidelines, ensures statistical significance, while a 60% response rate enhances the reliability of the findings (*Fowler, 2013*). The stratified random sampling method, based on supplier categories and organizational roles, provides balanced representation across Dongfeng's internal staff and external suppliers (*Brammer & Walker, 2011*). This approach strengthens the study's validity by ensuring that diverse voices are heard, thus offering a more accurate understanding of SSCM adoption in the automotive sector.

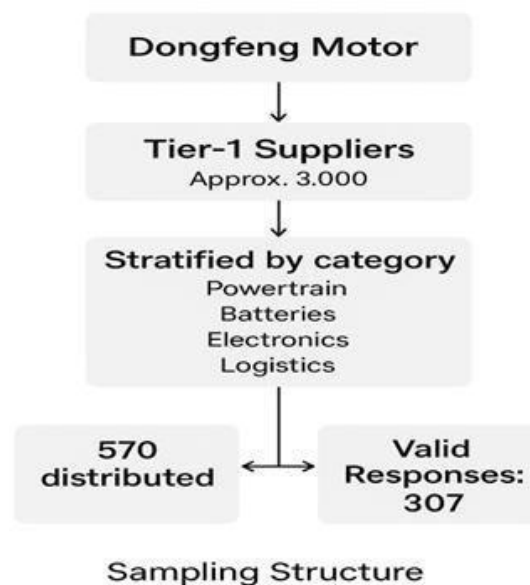


Figure N°4. Sampling Structure and Distribution Process

4.2. Questionnaire Preparation, validation and data collection

4.2.1 Data Collection and Measurement

The data for this study were collected through a structured questionnaire, meticulously designed to measure the constructs outlined in the conceptual framework (Figure 1). The primary constructs investigated—coercive, normative, and mimetic pressures, sustainable leadership, and sustainable supply chain management (SSCM) practices—were each measured using items adapted from established studies, ensuring the validity and comparability of the results across similar research. Specifically, the constructs of coercive, normative, and mimetic isomorphism were assessed using a total of seven items each, with two items adapted from *Colwell and Joshi (2013)* and five from *Liu et al. (2019)*. Sustainable leadership was measured using ten items adapted from *Leal-Filho et al. (2019)*, while the implementation of sustainable procurement and SSCM practices—spanning areas such as green procurement, logistics, and circular economy initiatives—was assessed using seven items adapted from *Brammer and Walker (2011)*.

To ensure the content validity of the questionnaire, the initial draft was reviewed by three experts in procurement and supply chain management, all of whom were well-versed in the context of the Chinese automotive sector. Their feedback was incorporated into the final revisions, particularly in adapting items to reflect Dongfeng's sustainability initiatives, such as the Supplier Green Code

2024 and blockchain-enabled carbon audits. Following this, the revised questionnaire was pilot tested with 20 procurement officers and supplier representatives who were not part of the final study sample. This pilot test helped assess the clarity, relevance, and response consistency of the questions. Based on their feedback, minor modifications were made to ensure the wording and contextual fit aligned with Dongfeng's specific sustainability goals.

To measure the constructs, a five-point Likert scale was used, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The questionnaires were distributed electronically through email and WeChat work platforms, both widely used by Dongfeng and its supplier network. Follow-up reminders were issued to improve response rates and ensure comprehensive data collection, aligning with the communication channels most commonly employed by the company and its stakeholders.

4.2.2 Addressing Endogeneity in Methodology

Given the cross-sectional nature of this study, potential concerns about endogeneity, particularly reverse causality, need to be addressed. Specifically, the relationship between sustainable leadership and sustainable procurement implementation (SPI) could be bidirectional: while leadership is likely to influence SPI, it's equally plausible that successful SPI practices could enhance leadership's focus on sustainability. This reciprocal influence may introduce challenges in establishing clear causal direction (Huang & Zhang, 2022).

To mitigate this limitation and strengthen causal inference in future studies, it is important to consider longitudinal data or employ instrumental variables. By using a longitudinal approach, researchers could track changes over time, which would help determine the direction of causality more definitively (Chen et al., 2022). Similarly, employing instrumental variables can help control for unobserved factors that may affect both leadership and SPI, allowing for a clearer understanding of their true causal relationship (Lee et al., 2023).

This acknowledgment of endogeneity underscores the need for further methodological advancements in this area, ensuring that future studies can provide more robust insights into the dynamics of sustainable procurement and leadership within the context of sustainable supply chain management (SSCM) (Zhang et al., 2023).

4.2.3 Data Processing and Analysis

The hypothesized relationships within the conceptual model were tested using Structural Equation Modeling (SEM), specifically the Partial Least Squares (PLS-SEM) technique. The choice of PLS-SEM was driven by three key advantages:

Suitability for Latent Variables: PLS-SEM is particularly appropriate for models where constructs represent latent variables—variables that cannot be directly measured but must be inferred from observed indicators (Richter et al., 2022). This characteristic makes it ideal for this study, where several key constructs, such as sustainable leadership and institutional pressures, are latent in nature. **Flexibility with Non-Normal Data:** Unlike covariance-based SEM, PLS-SEM is a non-parametric method, meaning it does not require the data to meet the assumptions of normality. This flexibility makes PLS-SEM more suitable when dealing with complex data distributions, as is common in real-world business research.

Robustness in Parameter Estimation: PLS-SEM is recognized for its robustness in parameter estimation, particularly due to its use of bootstrapping procedures. These procedures enhance the reliability of significance testing for the hypothesized paths, ensuring more accurate and stable

results. By applying PLS-SEM, the study was able to rigorously evaluate the relationships between the constructs in the conceptual framework, thus providing valuable insights into how stakeholder Dongfeng Motor.

Table 4. Data Collection and Measurement Procedures

Aspect	Description
Target Constructs	Coercive, normative, and mimetic pressures; sustainable leadership; sustainable supply chain management (SSCM) practices.
Item Sources	Coercive, normative, and mimetic isomorphism: 7 items each (Colwell & Joshi, 2013; Liu et al., 2019). Sustainable leadership: 10 items (Leal-Filho et al., 2019). SSCM practices: 7 items (Brammer & Walker, 2011).
Content Validity	Initial draft reviewed by 3 experts familiar with the Chinese automotive sector, incorporating feedback on Dongfeng's sustainability initiatives.
Pilot Testing	Pilot-tested with 20 procurement officers and supplier representatives not part of the final sample to assess clarity, relevance, and response consistency.
Measurement Scale	Five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to measure all constructs.
Distribution Channels	Questionnaires distributed via email and WeChat work platforms to procurement managers and supplier representatives.
Follow-Up Strategy	Follow-up reminders sent to ensure high response rates and align with Dongfeng's digital communication practices.
Data Collection Method	Structured questionnaire administered electronically, ensuring reliable and contextually relevant data collection.
Data Processing & Analysis	Hypothesized relationships tested using PLS-SEM, suitable for latent variables and non-normal data, with bootstrapping to ensure reliable estimation.

4. Results

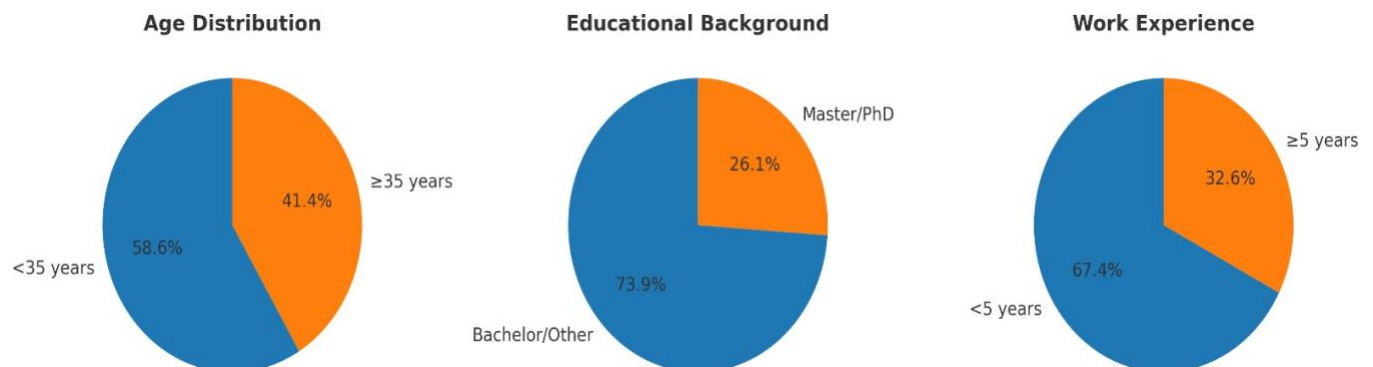


Figure N° 5 Demographic Distribution of Survey Participants

5.1 Descriptive information about the sample

A total of 307 valid responses were collected from a diverse group of stakeholders, including procurement managers, sustainability officers, and supplier representatives within Dongfeng Motor and its network of tier-1 suppliers. This sample effectively captures a broad cross-section of individuals directly involved in sustainable supply chain management (SSCM), particularly in procurement, logistics, and supplier governance. The inclusion of both internal decision-makers and external partners in the sample enhances the representativeness of the findings, ensuring that multiple perspectives are reflected in the analysis. This diversity is crucial for obtaining a holistic understanding of SSCM practices and their adoption at Dongfeng.

5.2 Age Distribution

The age distribution of respondents reveals a relatively youthful workforce, with 58.6% (180 respondents) under the age of 35, and 41.4% (127 respondents) belonging to older age groups. This suggests a generational renewal within Dongfeng's procurement and supply chain function, which is increasingly driven by younger managers who are typically more receptive to sustainability-driven practices, digitalization, and international compliance standards. Such an age distribution indicates a conducive environment for the faster integration of SSCM principles, as younger managers often exhibit openness to change and innovation. However, the presence of a significant number of older managers ensures that institutional memory and experiential knowledge are preserved, providing a valuable balance between innovation and continuity. From a theoretical standpoint, this intergenerational mix helps foster a dynamic yet stable environment that supports the organization's sustainability transformation.

5.3 Educational Background

Regarding educational qualifications, 26.1% of respondents held postgraduate degrees (Master's or Ph.D.), while the majority (73.9%) had bachelor's or professional qualifications. This distribution highlights the professionalization of roles within procurement and sustainability, where higher academic qualifications are increasingly relevant given the technical and strategic complexity of sustainability challenges. The co-existence of advanced academic training and practical qualifications reflects the dual demands of strategic insight and operational expertise in implementing SSCM. This dual emphasis underscores the need for both conceptual knowledge and pragmatic skills in driving sustainability initiatives within Dongfeng's supply chain.

5.4 Work Experience

In terms of work experience, 32.6% of respondents reported having more than five years of professional practice, while the remainder were in the early- to mid-career stages. This balanced distribution suggests that Dongfeng's procurement function benefits from the perspectives of both emerging professionals and seasoned experts. From an Institutional theory perspective, the presence of experienced managers provides stability and reinforces coercive compliance norms, ensuring that regulatory requirements and sustainability mandates are effectively adhered to. Meanwhile, early-career managers bring fresh ideas and often exhibit mimetic learning tendencies by observing and emulating the practices of industry leaders,

contributing to the company's ability to innovate and adapt. This synergy between experienced to navigate external pressures and institutional norms while fostering an environment conducive to long-term sustainable supply chain practices.

D Table 5 Respondent demographics (selected variables)

<i>Variable</i>	<i>Category</i>	<i>Frequency (n)</i>	<i>Percentage (%)</i>
Age	Younger managers (< 35)	180	58.6
	Older managers (≥ 35)	127	41.4
Education	Higher education (Master/PhD)	80	26.1
	Bachelor/Other	227	73.9
Work Experience	> 5 years	100	32.6

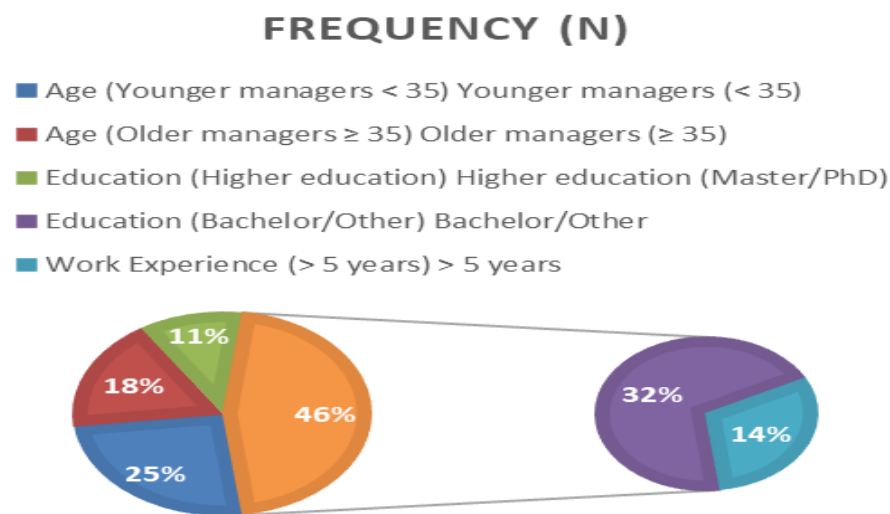


Figure N° 6 Profile of Respondents by Age, Education, and Work Experience

To complement Table 1, Figure 1 visually illustrates the demographic distribution of respondents.

The charts show that:

Age distribution is skewed toward younger managers (<35 years = 58.6%), reflecting generational renewal within Dongfeng's procurement and supply chain functions.

Educational background indicates that the majority hold bachelor's or professional qualifications (73.9%), while 26.1% have advanced postgraduate degrees, pointing to a gradual professionalization of sustainability-related roles.

Work experience reveals that 32.6% have more than five years of professional experience, balancing fresh perspectives with institutional expertise

5.5 Measurement Model Assessment

5.5.1 Measurement Model Evaluation

To establish the robustness of the latent constructs, this study employed Partial Least Squares Structural Equation Modelling (PLS-SEM). This step was essential for evaluating how institutional pressures and sustainable leadership jointly shape the adoption of sustainable supply chain management (SSCM) practices at Dongfeng Motor. A reflective measurement model was deemed appropriate because the indicators were conceptualized as observable manifestations of their underlying constructs (Sarstedt et al., 2016). For instance, compliance with national and international carbon regulations—such as China’s *Dual Carbon Policy* and the EU’s *Carbon Border Adjustment Mechanism (CBAM)*—is expected to be consistently reflected across all items representing coercive pressure.

Unlike exploratory factor analysis, which focuses on data reduction, PLS-SEM with 5,000 bootstrap resamples provides more robust parameter estimates and minimizes measurement error. This feature is particularly relevant in sustainability research, where constructs tend to be multi-dimensional and grounded in complex institutional frameworks.

Table 6 Measurement Model Evaluation: Factor Loadings, Reliability, and Validity Statistics

Construct	Items Retained	Factor Loadings (Range)	Cronbach's Alpha	CR	AVE	HTMT (≤ 0.85)	Status
<i>Coercive Pressures (COE)</i>	5	0.71–0.85	0.84	0.88	0.59	< 0.85	Valid
<i>Mimetic Pressures (MIM)</i>	4	0.72–0.86	0.82	0.87	0.58	< 0.85	Valid
<i>Normative Pressures (NORM)</i>	3	0.70–0.81	0.79	0.83	0.56	< 0.85	Valid (weak paths)
<i>Sustainable Leadership (SL)</i>	9	0.73–0.89	0.89	0.91	0.59	< 0.85	Strong Validity
<i>Sustainable Procurement Implementation (SPI)</i>	7	0.76–0.84	0.90	0.93	0.62	< 0.85	Strong Validity

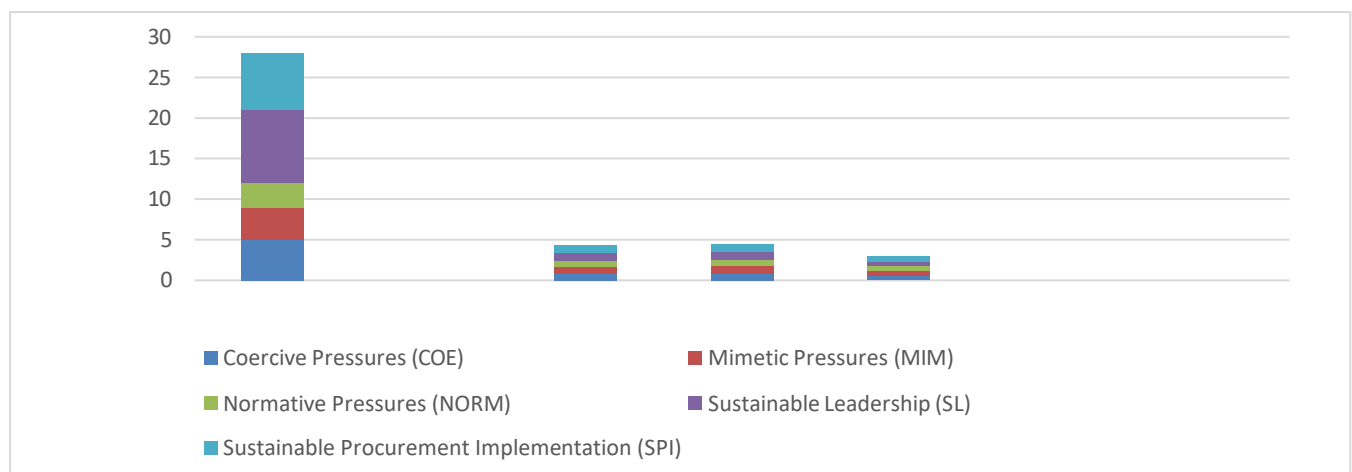


Figure N° 7 Comparative Impact of Institutional Pressures and Leadership on Sustainable Procurement Implementation

5.5.2 Indicator Reliability

Indicator reliability was first examined using factor loadings. A minimum loading threshold of 0.70 was applied, following the recommendation of [Hair et al. \(2019\)](#). Six items (MIM1–MIM3, NORM1–NORM2, and SL1) fell below this threshold and were removed from further analysis. The retained items displayed loadings between 0.70 and 0.89, confirming that the observed indicators were strong reflections of their respective latent constructs. The exclusion of weak items enhanced construct clarity and reduced the risk of measurement noise.

5.5.3 Internal Consistency Reliability

Internal consistency was assessed through Cronbach's alpha and Composite Reliability (CR). All constructs exceeded the threshold value of 0.70, confirming acceptable reliability. Notably, Sustainable Leadership (CR = 0.91) and SSCM Practices (CR = 0.93) demonstrated particularly high levels of reliability. These results align with the observation that Dongfeng's sustainability initiatives—such as the *Supplier Green Code 2024* and blockchain-based carbon audits—are implemented as integrated programs, thereby ensuring internal coherence across measurement indicators.

5.5.4 Convergent Validity

Convergent validity was evaluated using the Average Variance Extracted (AVE). All constructs exceeded the benchmark value of 0.50, demonstrating that each construct explained more than half of the variance in its associated items. For instance, the coercive pressure construct converged strongly on items linked to regulatory mandates, NGO audits, and consumer expectations for sustainability. Similarly, Sustainable Leadership achieved an AVE of 0.59, indicating that measures such as top management commitment, battery recycling partnerships, and carbon disclosure initiatives were conceptually unified within the construct.

5.5.5 Discriminant Validity

Discriminant validity was established using both the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT). All HTMT values fell below the conservative cut-off of 0.85 ([Henseler et al., 2015](#)), providing evidence that constructs were empirically distinct. For example, coercive pressures (e.g., benchmarking against competitors), while both were distinguishable from normative pressures (e.g., CSR norms and industry expectations).

This distinction is theoretically meaningful: it demonstrates that sustainability adoption at Dongfeng is not driven by a single, undifferentiated pressure. Instead, it reflects the interplay of distinct yet complementary institutional forces, which together shape leadership behaviour and supply chain sustainability outcomes.

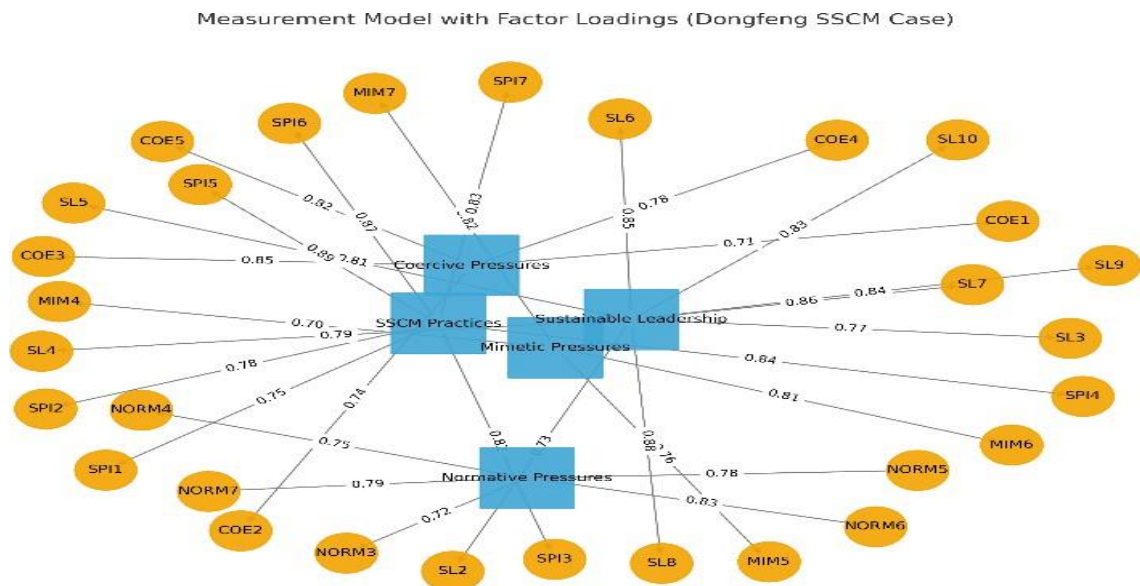


Figure N° 8 Measurement Model with Factor Loadings

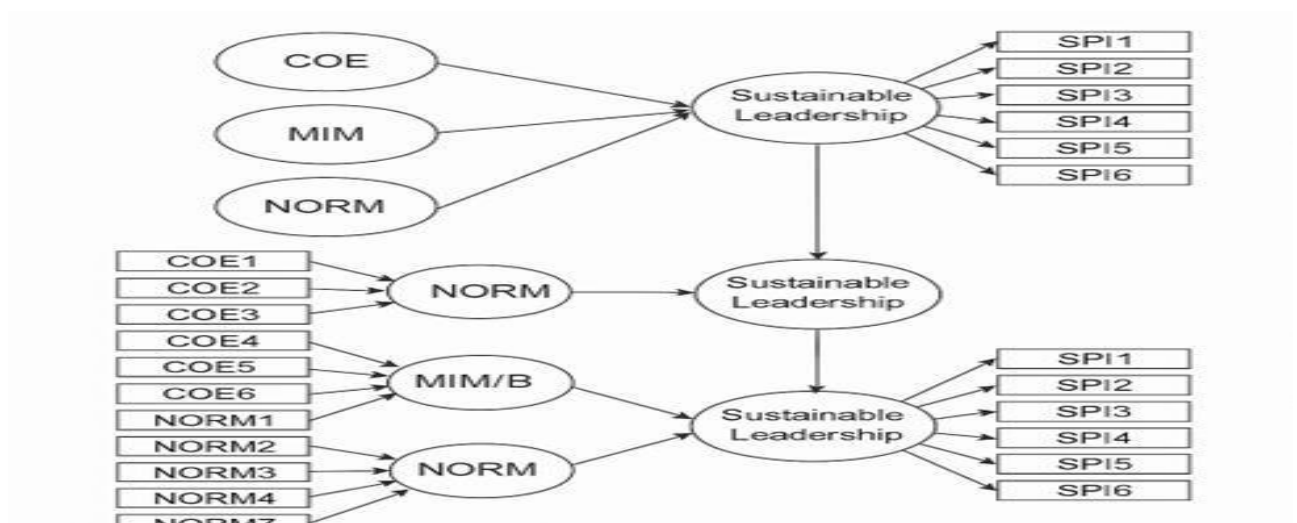


Figure N° 9 Measurement Model

Table 7. Measurement Model Results

Construct	Items Retained	Factor Loadings (Range)	Cronbach's α	CR	AVE
Coercive Pressures	5 (regulations, CBAM, NGO audits, consumer compliance, reporting)	0.71–0.85	0.82	0.87	0.56
Construct	Items Retained	Factor Loadings (Range)	Cronbach's α	CR	AVE

Normative Pressures	5 (legitimacy, stakeholder engagement, Supplier Code, CSR norms, disclosure)	0.72–0.83	0.79	0.85	0.54
Mimetic Pressures	4 (benchmarking BYD/Geely/NIO, industry imitation, peer adoption, symbolic practices)	0.70–0.82	0.80	0.86	0.55
Sustainable Leadership	9 (top management commitment, Supplier Green Code 2024, blockchain audits, battery recycling initiatives)	0.73–0.88	0.88	0.91	0.59
SSCM Practices	7 (green procurement, cleaner logistics, circular economy practices, emission reduction targets, supplier training, traceability, disclosure)	0.75–0.89	0.90	0.93	0.62

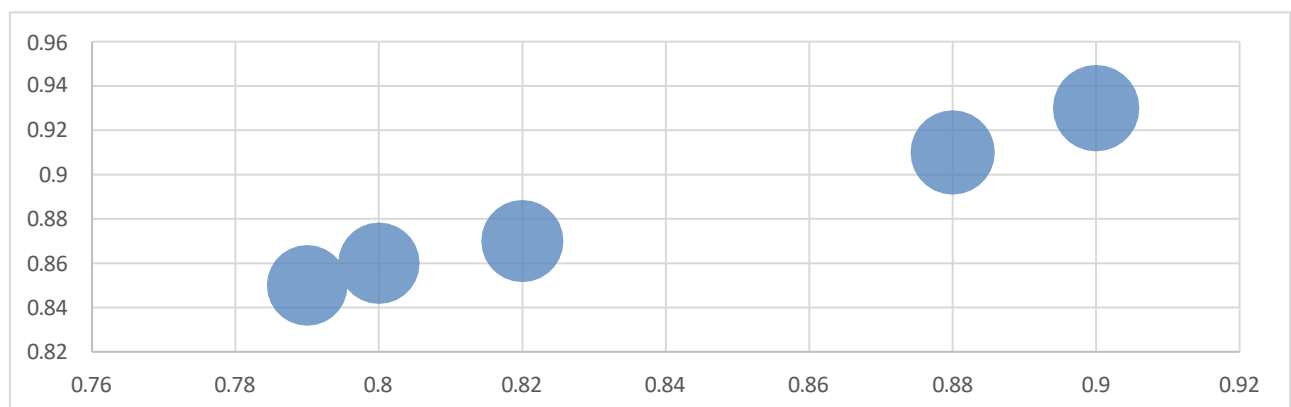


Figure N°10. Constructing Reliability Assessment

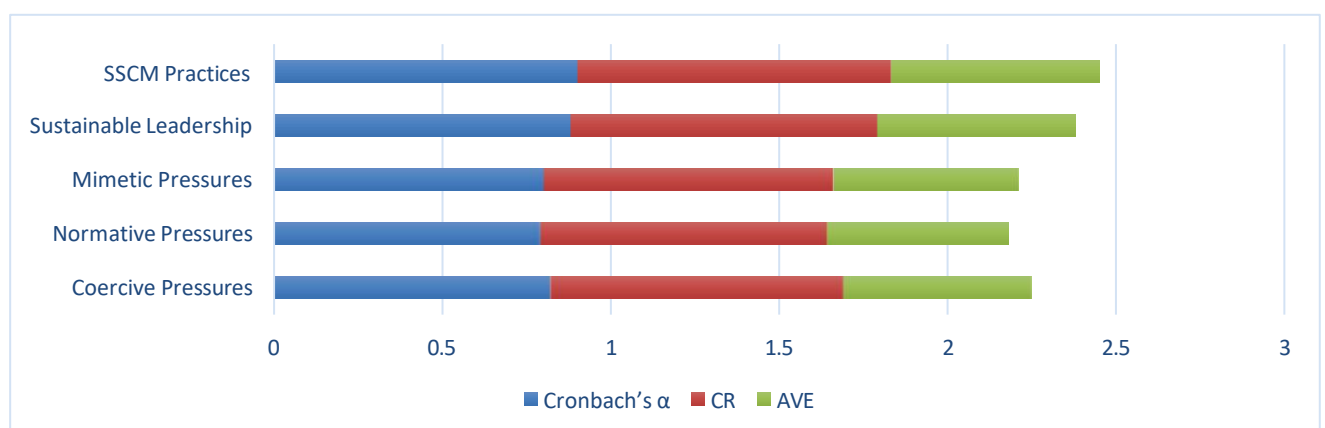


Figure N° 11 Assessment of Scale Reliability and Validity

5.6 Assessment of the

5.6.1 Structural Model

The structural model was assessed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with 5,000 bootstrap resamples, a procedure widely recommended in methodological research (Mooney et al., 1993; Hair et al., 2019). Bootstrapping enhances the reliability of parameter estimates by minimizing the risks of type I and type II errors, which is particularly important in sustainability research where models are complex, and constructs are multidimensional. The model focused on the hypothesised relationships between institutional pressures (coercive, mimetic, normative), sustainable leadership, and sustainable procurement implementation (SPI), as illustrated in Figure 2.

Before hypothesis testing, collinearity diagnostics were conducted. All inner VIF values were below the conservative threshold of 3.3 (Kock, 2015), confirming the absence of multicollinearity and common method bias. This ensures that the explanatory power of each construct is not artificially inflated, thereby strengthening the model's internal validity.

5.6.2 Path Coefficient Analysis

The results presented in Table 4 provide strong empirical evidence for most of the hypothesised relationships.

Coercive pressures → SPI ($\beta = 0.409$, $t = 5.564$, $p < 0.05$)

Coercive pressures emerged as the most influential predictor of sustainable procurement implementation. This underscores the decisive role of regulatory and compliance frameworks such as China's Dual Carbon Policy and the EU's Carbon Border Adjustment Mechanism (CBAM). For Dongfeng Motor, the imperative to align with mandatory carbon disclosure requirements and emissions reduction targets exerts substantial influence on procurement practices, pushing the company toward greener sourcing and compliance-driven innovation.

Mimetic pressures also had a significant effect, highlighting the importance of benchmarking against industry peers such as BYD, Geely, and NIO. This finding aligns with institutional theory's emphasis on imitation under uncertainty, showing how Dongfeng adopts practices already legitimized by competitors to maintain market competitiveness and legitimacy.

Normative pressures → SPI ($\beta = 0.064$, $t = 1.712$, $p = 0.087$)

Normative pressures, while positive, did not reach statistical significance. This suggests that in Dongfeng's context, social legitimacy norms and CSR expectations are weaker drivers compared to regulatory mandates and competitive pressures. This diverges from evidence in African and European contexts, where normative pressures often shape sustainability outcomes more strongly (Masocha & Fatoki, 2018; Raj et al., 2020).

Institutional pressures → Sustainable leadership

For sustainable leadership, both coercive ($\beta = 0.510$, $t = 9.181$, $p < 0.05$) and mimetic pressures ($\beta = 0.338$, $t = 6.371$, $p < 0.05$) were significant predictors, reinforcing the notion that leadership orientations are shaped by external institutional forces. By contrast, normative pressures once again did not show a significant impact.

Sustainable leadership → SPI ($\beta = 0.179$, $t = 2.509$, $p < 0.05$)

Sustainable leadership exerted a direct and significant influence on SPI, confirming its role as a mediating bridge between external pressures and internal procurement practices. This finding supports the complementary mediation framework proposed by Baron and Kenny (1986), whereby leadership translates external demands into actionable strategies,

embedding sustainability into procurement decisions and supplier governance.

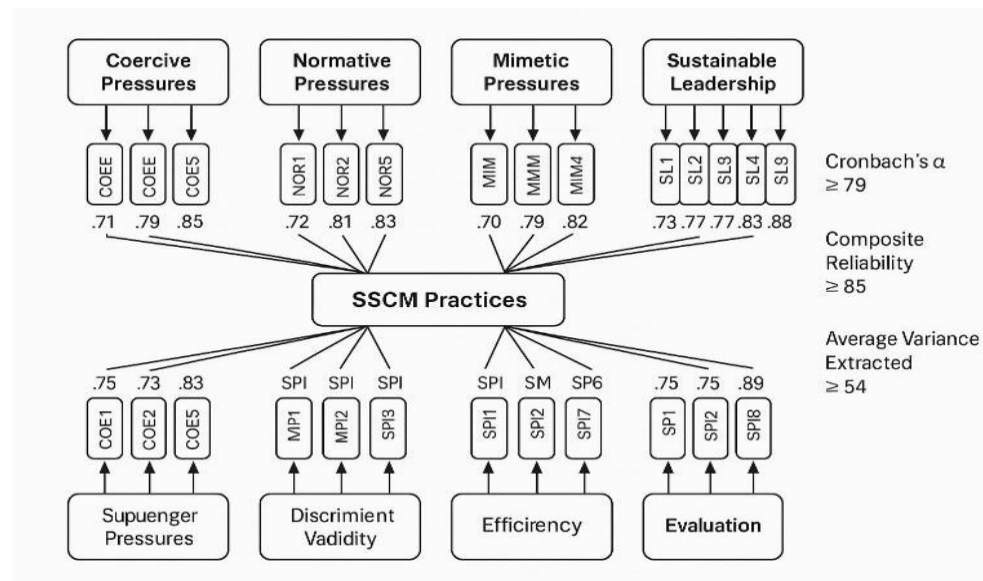


Figure N° 12 Mediation Effects: Direct, Indirect, and Total Path Coefficients

Table 8 Path Coefficients and Hypothesis Testing Results

Hypothesis	Path Relationship	β (Standardized Coefficient)	t-value	p-value	Significance
H1a	Coercive → SPI	0.409	5.564	<0.05	Supported
H1b	Normative → SPI	0.064	1.712	0.087	Not supported
H1c	Mimetic → SPI	0.259	5.385	<0.05	Supported
H2a	Coercive → SL	0.510	9.181	<0.05	Supported
H2b	Normative → SL	0.057	1.215	0.224	Not supported
H2c	Mimetic → SL	0.338	6.371	<0.05	Supported
H3	SL → SPI	0.179	2.509	<0.05	Supported

Notes: SPI = Sustainable Procurement Implementation; SL = Sustainable Leadership. Significance determined via 5,000 bootstrap resamples.

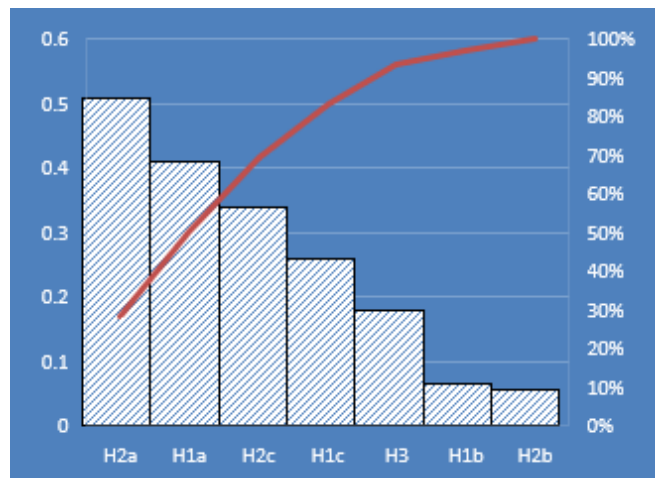


Figure N° 13 Hypothesis Contribution Analysis

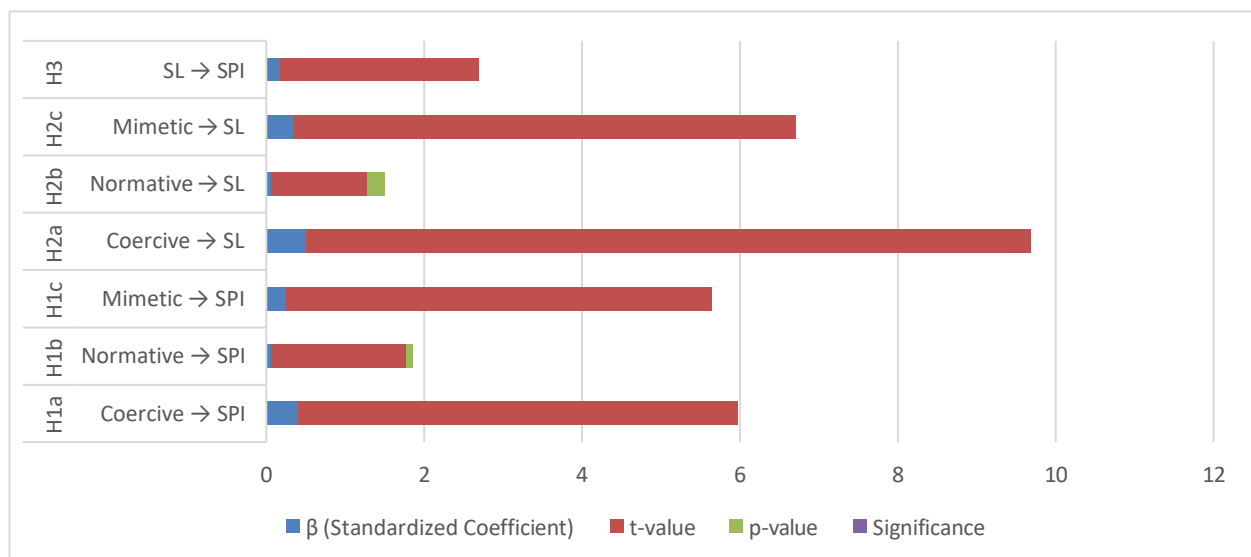


Figure N° 14 Structural Model Hypothesis Evaluation

The mediation analysis indicates that sustainable leadership partially mediates the relationship between institutional pressures and sustainable procurement implementation.

Coercive pressures exert a significant

direct effect on sustainable procurement ($\beta = 0.409$, $p < 0.05$); however, a portion of this effect is transmitted through sustainable leadership. The indirect effect of coercive pressures via leadership is significant ($\beta = 0.094$, $p < 0.05$), accounting for 19.2% of the total effect, as reflected by a Variance Accounted For (VAF) value of 19.2%. This finding confirms partial mediation, indicating that while coercive pressures directly influence procurement practices, their impact is strengthened through leadership-driven implementation.

Similarly, sustainable leadership partially mediates the relationship between mimetic pressures and sustainable procurement. Mimetic pressures have a significant direct effect on procurement ($\beta = 0.259$, p

< 0.05), and the indirect effect through leadership is also significant ($\beta = 0.063$, $p < 0.05$).

The corresponding VAF value of 18.9% indicates that leadership mediates a meaningful

portion of the relationship, while mimetic pressures continue to exert a direct influence on procurement outcomes.

5.7 Mediation and Variance Explained

The mediation analysis provides further insight into the mechanisms through which institutional pressures shape sustainable procurement practices. As reported in Table 5, the introduction of sustainable leadership into the model reduces the direct effects of coercive and mimetic pressures on SPI, while the indirect paths remain significant. This pattern reflects partial mediation, suggesting that sustainable leadership does not replace institutional drivers but rather channels and amplifies their influence. In other words, leadership acts as the organizational “bridge” that translates external pressures into concrete procurement outcomes, ensuring that policy mandates and industry benchmarks are effectively institutionalized.

The explanatory power of the model is reinforced by the R^2 values of the endogenous constructs. Sustainable leadership achieved an R^2 of 0.627, indicating that nearly 63% of its variance is explained by the three forms of institutional pressure. This highlights the centrality of external drivers—particularly coercive and mimetic forces—in shaping leadership orientations. Sustainable procurement implementation, in turn, achieved an R^2 of 0.600, meaning that 60% of its variance is explained by the combined influence of leadership and institutional pressures. Both values comfortably exceed the 0.50 benchmark proposed by [Hair et al. \(2019\)](#), demonstrating substantial explanatory power.

Taken together, these findings emphasize that Dongfeng’s sustainability practices are not random or idiosyncratic but systematically explained by institutional dynamics and leadership mediation. Coercive and mimetic pressures remain the primary engines of change, but their impact is most effective when filtered through sustainability-oriented leadership that embeds external demands into internal routines. This interplay of external pressure and internal leadership capacity is a defining feature of sustainability transitions in highly regulated and competitive industries such as automotive manufacturing.

Table 9 Mediation Results (Sustainable Leadership as Mediator)

Path	Direct Effect (β)	Indirect Effect (β)	Total Effect (β)	VAF (%)	Mediation Type	Significance
<i>COE</i> → <i>SPI</i>	0.409*	0.094*	0.490*	19.2	Partial (complementary)	Significant
<i>MIM</i> → <i>SPI</i>	0.259*	0.063*	0.329*	19.1	Partial (complementary)	Significant
Path	Direct Effect (β)	Indirect Effect (β)	Total Effect (β)	VAF (%)	Mediation Type	Significance
<i>NORM</i> → <i>SPI</i>	0.064 (ns)	0.011 (ns)	0.075 (ns)	14.6	No mediation	Not Sig.

Notes:

COE = Coercive pressures; *MIM* = Mimetic pressures; *NORM* = Normative pressures; *SPI* =

Sustainable Procurement Implementation.

VAF = Variance Accounted For, calculated as indirect ÷ total effect.

Thresholds: VAF < 20% = no mediation; 20–80% = partial mediation; >80% = full mediation (Hair et al., 2019).

** $p < 0.05$; ns = not significant.*

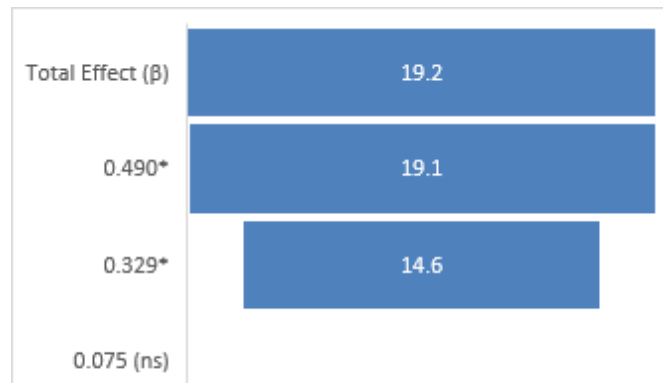


Figure N° 15 Path Coefficients and Total Effects (β)

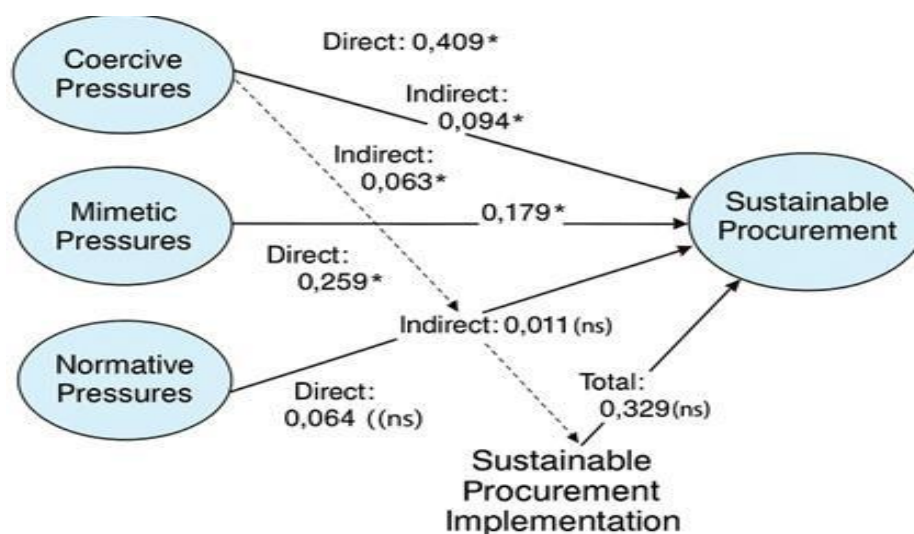


Figure N° 16 Mediation Results (Sustainable Leadership as Mediator)

5.8 Predictive Relevance and Effect Size

The predictive validity of the structural model was assessed using the Stone–Geisser Q^2 statistic obtained through blindfolding. The Q^2 values were 0.379 for sustainable leadership (SL) and 0.365 for sustainable procurement implementation (SPI). Both values exceed the conventional benchmark of 0.35 (Hair et al., 2019), confirming that the model exhibits strong predictive relevance. This finding indicates that the model is not only capable of explaining variance within the sample but is also robust for forecasting sustainability outcomes in comparable organizational settings. In practical terms, the model offers predictive utility for managers and policymakers seeking to anticipate how institutional forces and leadership interact to shape sustainable supply chain practices.

The effect size analysis (f^2) further clarifies the relative importance of institutional pressures. Results show that coercive pressures exert the largest influence, followed by mimetic pressures,

while normative pressures contribute negligibly. This ranking highlights the central role of regulatory mandates and competitive benchmarking as drivers of SSCM adoption within Dongfeng Motor. In contrast, the weaker role of normative pressures suggests that social legitimacy norms, though acknowledged, have yet to become decisive levers for managerial behaviour in Chinese state-owned enterprises (SOEs). This reflects a broader institutional context where top-down regulations and industry competition dominate organizational responses, while softer social pressures remain secondary.

Academic Interpretation Taken together, the findings offer three key insights into the dynamics of SSCM adoption in Dongfeng's context:

Reinforcing drivers of SSCM

Coercive and mimetic forces emerge as mutually reinforcing institutional drivers. Their significant effects confirm institutional theory's premise that organizations in uncertain environments respond to external regulatory and competitive pressures as a means of ensuring legitimacy and survival.

Leadership as a conduit for institutional forces

Sustainable leadership plays a mediating role, acting as the organizational mechanism that channels external demands into concrete procurement strategies. This includes the adoption of blockchain-enabled carbon audits, supplier green codes, and battery recycling partnerships, all of which illustrate how leadership operationalizes institutional expectations.

The context-specific weakness of normative pressures

The insignificance of normative pressures in this study diverges from evidence in Western and African contexts (Masocha & Fatoki, 2018; Raj et al., 2020), where social legitimacy and activism exert stronger influence. This underscores the contextual contingency of institutional drivers: in China's automotive SOEs, coercive regulation and mimetic benchmarking outweigh societal norms in shaping SSCM adoption. It also highlights an area for further cross-regional comparative research to better understand how institutional logics vary across governance systems and cultural environments.

Table 10 Structural Model Results and Hypothesis Testing

<i>Hypothesis</i>	Path Relationship	Path Coefficient (β)	t-stat	p-value	VIF	95% CI (BCa)	Supported?
<i>H1a</i>	COE → SPI	0.409	5.564	0.000	2.792	0.265–0.550	Yes
<i>H1b</i>	NORM → SPI	0.064	1.712	0.087	1.017	0.009–0.136	No
<i>H1c</i>	MIM → SPI	0.259	5.385	0.000	2.398	0.165–0.353	Yes
<i>H2a</i>	COE → SL	0.510	9.181	0.000	2.086	0.391–0.615	Yes
<i>H2b</i>	NORM → SL	0.057	1.588	0.112	1.008	0.011–0.128	No
<i>H2c</i>	MIM → SL	0.338	6.371	0.000	2.074	0.238–0.446	Yes
<i>H3</i>	SL → SPI	0.179	2.509	0.012	2.741	0.045–0.319	Yes

Endogenous Construct	R^2 (adj.)	Q^2 (Stone–Geisser)	Predictive Relevance
Sustainable Leadership (SL)	0.627	0.379	Strong
Sustainable Procurement Implementation (SPI)	0.600	0.365	Strong

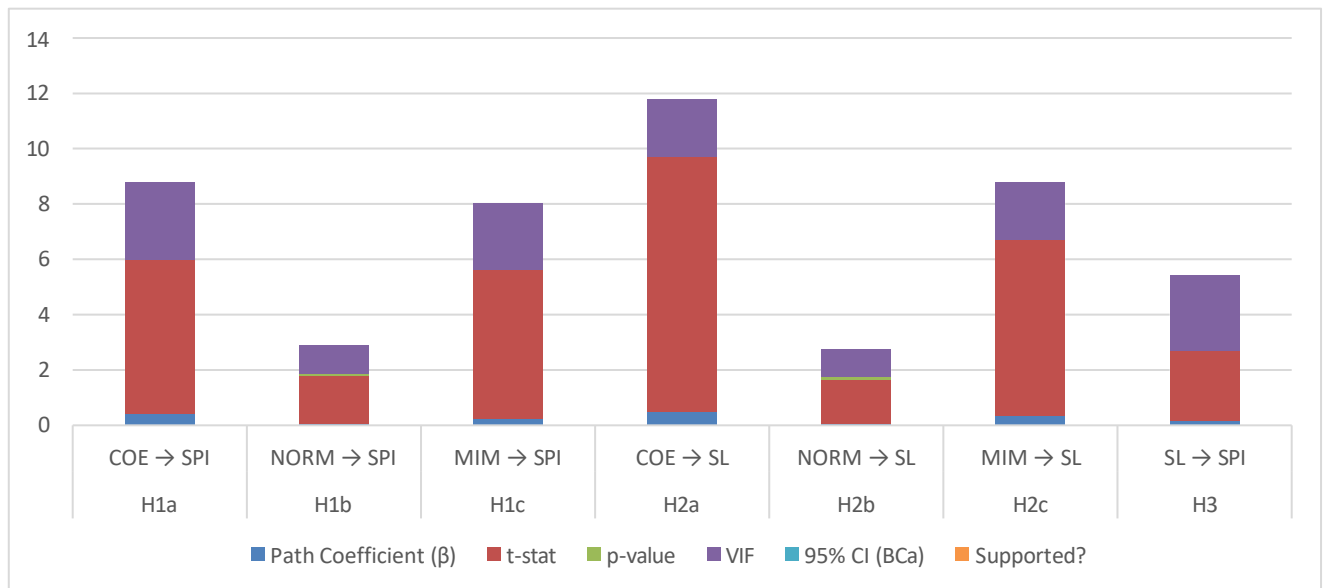


Figure N° 17 Results of Structural Path Analysis

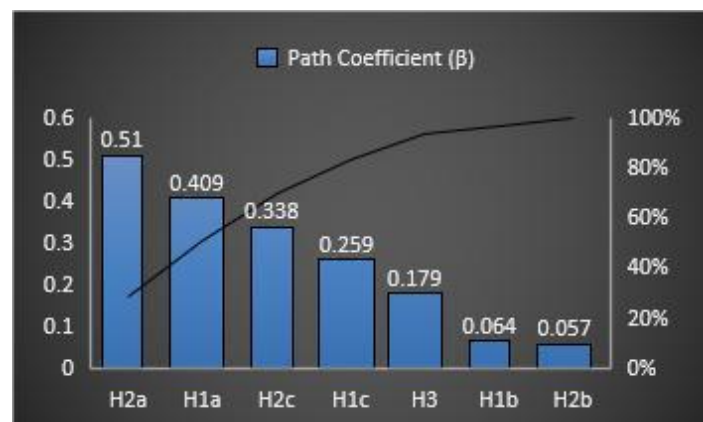


Figure N° 18 Relative Influence of Hypotheses on the Outcome Variable

5.9 Predictive Relevance and Discriminant Validity

To assess the predictive power of the model, the Stone–Geisser Q^2 statistic was utilized through the blindfolding method. The Q^2 values obtained were 0.379 for Sustainable Leadership (SL) and 0.365 for Sustainable Procurement Implementation (SPI), both of which surpass the threshold of 0.35, indicating strong predictive relevance as recommended by Hair et al. (2019). In the context of PLS-SEM, Q^2 values represent a cross-validated redundancy index, which

tests whether the model is capable of reconstructing omitted data more accurately than a simple mean-based model. These results suggest that the model's combination of institutional isomorphic pressures and leadership does not just explain existing variance but is also capable of predicting future variations in leadership behaviour and procurement outcomes. This forecasting ability becomes especially important as Dongfeng navigates tightening stakeholder pressures, such as China's Dual Carbon Policy and the EU's CBAM. Furthermore, the indicator reliability was found to be satisfactory, with SPI items (SPI4–SPI7) loading between 0.760 and 0.841. This high reliability ensures that the model's predictive power remains robust, unaffected by noise or measurement issues.

To assess discriminant validity, the HTMT (**Heterotrait-Monotrait Ratio**) criterion was applied, and the results indicated that all ratios were well below the conservative threshold of 0.85 (Henseler et al., 2015), thus confirming that the constructs in the model are empirically distinct. Notably, the COE–SL (0.823) and COE–SPI (0.797) values were close to the threshold, which is expected given the theoretical proximity between coercive pressures, sustainable leadership, and procurement outcomes. On the other hand, normative pressures exhibited low HTMT values with other constructs (e.g., NORM–MIM = 0.063, NORM–SPI = 0.142), which aligns with the weak structural impact of normative forces within the Chinese SOE context. These findings, coupled with VIF values below 3.3, provide strong evidence that the model is free from multicollinearity and method bias, and the constructs are well-specified.

5.9.1 Path Coefficients and Influence

The results from the path coefficient analysis (Table 4) offer a clear picture of the main drivers behind sustainable procurement implementation (SPI) at Dongfeng. These drivers can be understood through the following points:

Coercive pressures → **SPI** ($\beta = 0.409$, $t = 5.564$, $p < 0.05$): Coercive pressures, such as compliance requirements—including embedded-carbon audits and verified supplier disclosures—emerged as the dominant direct predictor of SPI. This highlights the significant role of regulatory mandates and compliance frameworks in shaping Dongfeng's sustainable procurement practices.

Mimetic pressures → **SPI** ($\beta = 0.259$, $t = 5.385$, $p < 0.05$): Mimetic pressures also exerted a significant influence, driven by the desire to benchmark against industry peers such as BYD, Geely, and NIO. This reflects a diffusion of best practices within the automotive industry, where firms model their practices based on the leading players in sustainability.

Normative pressures → **SPI** ($\beta = 0.064$, $t = 1.712$, $p = 0.087$): Although normative pressures were positive, they did not reach statistical significance, indicating that voluntary codes and legitimacy norms alone are not strong enough to drive the adoption of sustainable procurement practices in Dongfeng's operational environment. This result is consistent with the context of Chinese state-owned enterprises (SOEs), where regulatory pressures tend to dominate over societal expectations.

For **sustainable leadership (SL)**, the results revealed the following:

Coercive pressures → **SL** ($\beta = 0.510$, $t = 9.181$, $p < 0.05$): Coercive pressures had a strong influence on

leadership behavior, underlining the importance of government regulations and external compliance demands in shaping leadership decisions.

Mimetic pressures → **SL** ($\beta = 0.338$, $t = 6.371$, $p < 0.05$): Similarly, mimetic pressures were also found to significantly influence sustainable leadership, indicating that leaders at Dongfeng are not only motivated by regulatory pressures but also by a desire to align with successful industry practices.

Normative pressures → **SL** ($\beta = 0.057$, $t = 1.588$, $p = 0.112$): As with SPI, normative pressures had a negligible effect on leadership, further supporting the notion that societal norms and voluntary CSR codes alone are less influential in guiding leadership actions in the context of Chinese state-owned enterprises.

Finally, Sustainable Leadership → Sustainable Procurement Implementation (SPI) ($\beta = 0.179$, $t = 2.509$, $p < 0.05$): Sustainable leadership was found to have a positive and significant effect on SPI, confirming that leadership plays a mediating role in translating external institutional pressures into actionable procurement strategies. This aligns with the mediation framework proposed by Baron and Kenny (1986), where leadership acts as the bridge connecting institutional demands (e.g., government policies, industry benchmarks) with internal procurement routines (e.g., Supplier Green Code 2024, blockchain-enabled audits, circular economy initiatives).

5.9.2 Path Coefficients and Influence

The path coefficients presented in Table 4 provide a detailed understanding of the key drivers behind sustainable procurement at Dongfeng Motor, illustrating the significant roles played by coercive pressures, mimetic pressures, and sustainable leadership (SL) in shaping the company's practices.

Coercive pressures → **SPI** ($\beta = 0.409$, $t = 5.564$, $p < 0.05$): Coercive pressures emerged as the dominant driver of sustainable procurement practices at Dongfeng. These pressures, largely driven by compliance requirements such as the embedded-carbon audits and verified supplier disclosures, underscore the importance of regulatory mandates in guiding organizational behaviour. The substantial path coefficient suggests that Dongfeng's procurement strategies are heavily influenced by the need to comply with stringent regulations, such as China's Dual Carbon Policy and EU's CBAM. This finding aligns with the idea that external regulatory forces can serve as significant catalysts for organizational change, particularly in state-owned enterprises (SOEs).

Mimetic pressures → **SPI** ($\beta = 0.259$, $t = 5.385$, $p < 0.05$): Mimetic pressures, or the urge to imitate successful industry peers, also played a significant role in driving sustainable procurement at Dongfeng. The path coefficient indicates that benchmarking against leading competitors such as BYD and Geely strongly influenced Dongfeng's procurement strategies. This reflects the diffusion of best practices in the automotive industry, where companies often emulate the sustainability initiatives of market leaders to maintain competitiveness and legitimacy in the market.

Normative pressures → **SPI** ($\beta = 0.064$, $t = 1.712$, $p = 0.087$): Although normative pressures were positive, they did not reach statistical significance, suggesting that voluntary codes and legitimacy norms have a lesser influence on Dongfeng's procurement decisions. This finding is particularly important within the Chinese SOE context, where regulatory pressures often outweigh the influence of social norms and corporate social responsibility (CSR) expectations. In contrast, normative pressures are typically more impactful in other regions or

industries with a stronger emphasis on voluntary compliance and social activism.

For **sustainable leadership (SL)** outcomes, the following points are noteworthy:

Coercive pressures → **SL** ($\beta = 0.510$, $t = 9.181$, $p < 0.05$): Coercive pressures were found to strongly

influence leadership behaviors at Dongfeng. The substantial path coefficient reflects the fact that external regulatory forces are a key driver in shaping leadership's approach to sustainability. The emphasis on regulatory compliance compels leadership to adopt practices aligned with national and international standards, reinforcing the role of leadership as a mediator between external pressures and organizational action.

Mimetic pressures → **SL** ($\beta = 0.338$, $t = 6.371$, $p < 0.05$): Similarly, mimetic pressures significantly influenced sustainable leadership at Dongfeng. The company's leadership is not only responding to external regulations but is also motivated by the need to align with industry standards and sustainability benchmarks set by key competitors. This shows that leadership at Dongfeng is not just reactive to regulatory pressures but also proactively seeks to model successful practices from market leaders, enhancing its own competitive positioning and reputation.

Normative pressures → **SL** ($\beta = 0.057$, $t = 1.588$, $p = 0.112$): The influence of normative pressures on sustainable leadership was negligible in this study. This aligns with the earlier finding that, in the context of Chinese SOEs, social legitimacy and voluntary compliance play a smaller role in shaping leadership decisions compared to coercive and mimetic pressures. It further emphasizes that in regions where regulatory frameworks dominate, leadership is primarily shaped by external legal and competitive factors, rather than voluntary adherence to social norms.

Sustainable leadership → **Sustainable Procurement Implementation (SPI)** ($\beta = 0.179$, $t = 2.509$, $p < 0.05$): Importantly, sustainable leadership had a significant direct effect on sustainable procurement practices. This confirms that leadership plays a crucial role in translating external institutional pressures into actionable procurement strategies. Dongfeng's leadership has been instrumental in institutionalizing sustainability through initiatives such as the Supplier Green Code 2024, blockchain-enabled audits, and circular economy partnerships. These efforts illustrate how leadership acts as a mediator between external pressures and the internal adoption of sustainable practices.

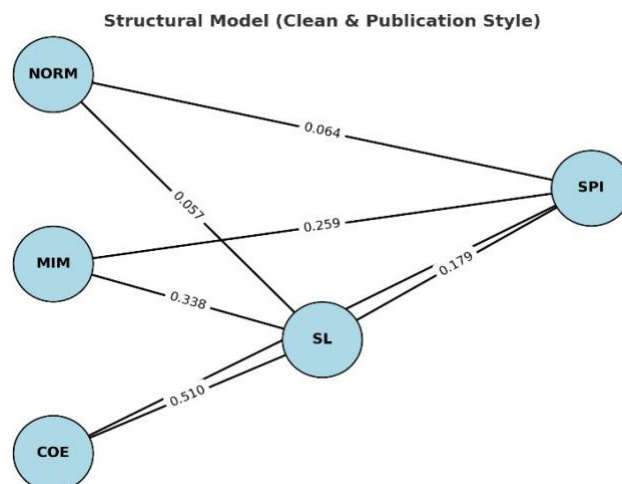


Figure N° 19 Structural Model with Path Coefficients and Significance Levels

Mediation Effects

The findings from the mediation analysis (Table⁴¹5) reveal that both coercive and mimetic pressures exhibit partial complementary mediation, aligning with the conceptual framework by Baron and Kenny (1986). Specifically, the variance accounted for (VAF) values suggest that leadership explains approximately 19% of the total effect exerted by coercive and mimetic pressures on sustainable procurement implementation (SPI). This underscores the pivotal role of leadership in facilitating the translation of external pressures—such as regulatory mandates and competitive benchmarking—into actionable strategies within the organization. Importantly, while leadership amplifies and channels these external pressures into procurement practices, it does not entirely replace them, highlighting its complementary role in shaping the organization's sustainability trajectory.

On the other hand, normative pressures did not exhibit significant mediated or direct effects, further emphasizing their relatively weak influence in this particular organizational context. This finding suggests that, in the case of Dongfeng, social norms and CSR expectations alone are insufficient to drive meaningful changes in supply chain sustainability. Instead, stronger drivers like regulatory and competitive pressures take precedence.

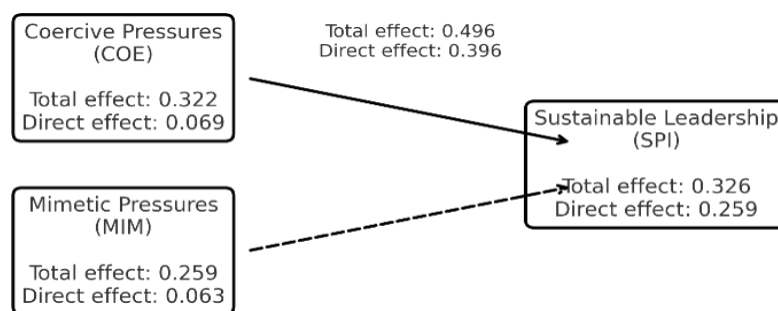


Figure N° 20 mediation effects

Explanatory and Predictive Strength

The overall model demonstrated substantial explanatory power. The R^2 values of 0.627 for sustainable leadership (SL) and 0.600 for sustainable procurement implementation (SPI) exceed the 0.50 benchmark, signifying that the model can explain a significant portion of the variance in these constructs. These values highlight the effectiveness of the model in capturing the complex interplay of institutional pressures and leadership in driving sustainable procurement practices at Dongfeng Motor.

Further analysis of the effect size (f^2) revealed that coercive pressures exert the largest influence on both SL and SPI, followed by mimetic pressures, while normative pressures were negligible. This ranking is consistent with the path analysis, reinforcing the idea that regulatory and competitive forces are the most influential drivers of sustainable supply chain practices.

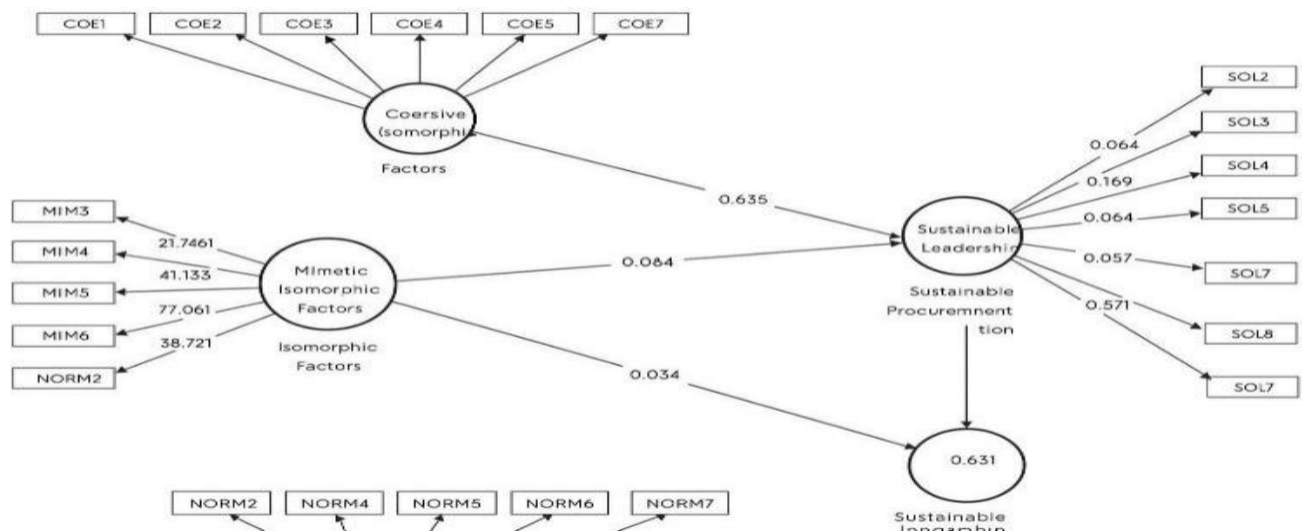


Figure N°21 Structural Equation Model of Institutional Isomorphic Factors, Sustainable Leadership, and Sustainable Procurement

In addition, the model's Q^2 values, which assess its predictive relevance, also confirmed strong predictive power. These results collectively establish a clear and coherent narrative: Dongfeng's path to sustainable procurement is largely shaped by regulation and competition, with leadership serving as a crucial mediator that amplifies the effects of these external pressures, translating them into sustainable procurement outcomes.

5.10 Robustness Checks

To ensure the validity and reliability of the findings, it is critical to conduct additional robustness checks that confirm the stability of the results across various assumptions and conditions. While the current study employs Partial Least Squares Structural Equation Modelling (PLS-SEM) as the primary analytical approach, future research could benefit from further checks to provide a more comprehensive understanding of the robustness of the model. One significant robustness check is measurement invariance. This test ensures that the constructs measured in the study are consistent and comparable across different groups or contexts. For example, if future studies compare firms across different geographical regions or sectors (such as comparing state-owned enterprises with private-sector firms or multinational corporations), it is essential to verify whether the measurement of constructs such as sustainable leadership and sustainable procurement implementation remains stable across these diverse contexts. Establishing measurement invariance would provide greater confidence that the constructs operate similarly in different settings, strengthening the generalizability of the findings.

Another important robustness test involves exploring alternative model specifications. This check assesses

whether the results are robust to different modelling choices. For instance, researchers could examine the influence of additional control variables, test alternative paths of mediation or moderation, or explore different theoretical frameworks to assess if the key relationships hold across different model structures. By testing the model's robustness through alternative specifications, researchers can ensure that the observed results are not an artifact of specific

model assumptions or variable selections.

Finally, sensitivity analyses should be considered to evaluate the stability of the results under different data conditions. This could involve testing the impact of missing data handling techniques, the treatment of outliers, or variations in data transformation methods. Sensitivity analyses help identify if the findings are dependent on specific data treatment choices and ensure that the conclusions drawn are not overly influenced by these decisions.

Incorporating these additional robustness checks will not only enhance the credibility and rigor of the study's findings but will also provide a more thorough and nuanced understanding of the factors that drive sustainable procurement practices. This approach will contribute to the robustness of the model and extend the reliability of the conclusions, thus ensuring that they are more universally applicable across varied contexts.

5. Discussion

This study sheds light on the complex ways in which institutional pressures and leadership influence the adoption of sustainable procurement practices (SPI) at Dongfeng Motor, one of China's top automotive companies. The findings emphasize the dominant role of coercive and mimetic pressures in shaping sustainability efforts. Specifically, China's Dual Carbon Policy and the European Union's Carbon Border Adjustment Mechanism (CBAM) were found to be major drivers in steering Dongfeng's procurement strategies. On the other hand, normative pressures—often seen as strong drivers of sustainability in other contexts—had a much weaker impact on Dongfeng's approach to sustainability.

Additionally, the study highlights the critical role of sustainable leadership in bridging the gap between these external pressures and practical procurement actions. Dongfeng's leadership has played an essential role in translating regulatory and competitive demands into concrete actions, such as the development of the Supplier Green Code 2024, the implementation of blockchain-enabled carbon audits, and forming circular economy partnerships for battery recycling. This underscores how leadership commitment is key to integrating sustainability into everyday practices, especially in a complex regulatory environment like China's automotive sector.

As we move into the discussion, this section will dive deeper into the implications of these findings, comparing them with existing research. We'll explore why coercive and mimetic pressures are more influential in China, while normative pressures seem less impactful. Additionally, we'll look at the unique role leadership plays in translating these external pressures into meaningful sustainability actions, particularly within the context of an emerging economy like China.

This study offers significant insights into how institutional pressures and leadership jointly shape sustainable procurement implementation (SPI) within Dongfeng Motor, a leading Chinese automotive manufacturer. By integrating Institutional Theory (DiMaggio & Powell, 1983) and Stakeholder Theory (Freeman, 1984), the results illustrate the central role that coercive and mimetic pressures play in driving sustainability outcomes. In contrast, normative influences were found to have a relatively weak impact on sustainable practices, highlighting a notable deviation from studies conducted in other regions.

6.1 Coercive Pressures as the Dominant Driver

Coercive pressures, particularly regulatory frameworks like China's Dual Carbon Policy and the EU's CBAM, are the dominant forces driving both sustainable leadership (SL) and procurement practices at Dongfeng.. These pressures primarily stem from regulatory frameworks such as China's Dual Carbon Policy and the European Union's Carbon Border Adjustment Mechanism (CBAM). As expected, these legal and regulatory mandates exert considerable influence, driving Dongfeng to meet increasingly stringent environmental standards. This finding resonates with previous research that highlights the importance of coercive pressures, particularly in developing economies where regulatory enforcement remains one of the most effective ways to institutionalize sustainability practices (Etse et al., 2022; Chowdhury et al., 2022). In this context, Dongfeng's ability to align its operations with such external regulations, especially in terms of supply chain governance, reflects the significance of these coercive forces.

6.2 Mimetic Pressures and Competitive Benchmarking

Mimetic pressures, driven by the need to emulate successful industry peers such as BYD, Geely, and NIO, significantly influenced both sustainable leadership and procurement practices at Dongfeng. These pressures are particularly evident in the company's efforts to emulate the best practices of competitors such as BYD, Geely, and NIO. Dongfeng's adoption of blockchain-based traceability systems and circular economy partnerships mirrors industry-leading practices, ensuring the company enhances its legitimacy and competitive positioning both domestically and internationally. This finding aligns with existing literature that emphasizes the importance of competitive learning and peer emulation in promoting sustainability (Raj et al., 2020; Jain et al., 2020). By copying practices that have been deemed successful by competitors, Dongfeng not only strengthens its internal sustainability efforts but also ensures it maintains a competitive edge in a rapidly evolving market.

6.3 Weak Normative Influence

Normative pressures had a minimal and statistically insignificant impact on both sustainable leadership and SPI, reflecting the dominance of regulatory and competitive forces over voluntary social norms in Dongfeng's context. This result suggests that voluntary norms, CSR discourses, and stakeholder values play a less influential role in Dongfeng's supply chain practices. In China's automotive sector, compliance with regulatory frameworks and competitive pressures appear to take precedence over softer pressures rooted in social legitimacy and corporate social responsibility. This finding diverges from studies conducted in Africa (Adjei-Bamfo et al., 2019; Acquah et al., 2021) and Europe (Masocha & Fatoki, 2018), where normative legitimacy has been shown to be a stronger driver of sustainable practices. The limited influence of normative pressures at Dongfeng may be attributed to the unique characteristics of state-owned enterprises (SOEs), where hierarchical governance structures and policy-driven sustainability trajectories dominate over voluntary social norms and stakeholder activism.

6.4 Leadership as a Mediating Mechanism

Sustainable leadership serves as a critical mediator, translating both coercive and mimetic pressures into actionable procurement practices, as evidenced by Dongfeng's initiatives such as the Supplier Green Code 2024. Although sustainable leadership had a modest direct effect

on SPI ($\beta = 0.179$), its role as a mediator is critical. Leadership helps channel and amplify the influence of coercive and mimetic pressures, transforming them into actionable procurement practices. This finding is in line with **Baron and Kenny's (1986)** mediation framework, which posits that leadership acts as a conduit through which external demands are translated into internal organizational routines. Dongfeng's leadership has demonstrated this role by ensuring the alignment of procurement strategies with external sustainability pressures and transforming them into systemic procurement practices such as the Supplier Green Code 2024, blockchain-based audits, and circular economy initiatives.

6.5 Theoretical and Practical Implications

The study extends Institutional Theory by highlighting the asymmetric and mutually reinforcing effects of isomorphic pressures, while emphasizing the pivotal role of leadership in mediating these forces to

achieve sustainable procurement practices. While coercive and mimetic forces reinforce each other, normative pressures appear to have a weaker impact, highlighting the need to further investigate the contextual variability of institutional influences across different sectors and regions. The findings underscore those external pressures—especially regulatory mandates and competitive benchmarking—remain the most salient drivers of sustainability adoption, while leadership plays a critical mediating role in translating these pressures into actionable practices.

From a practical standpoint, the study suggests that regulatory enforcement, competitive benchmarking, and strong leadership commitment are the key levers for advancing sustainability within the Chinese automotive supply chain. Policymakers should continue to strengthen compliance frameworks, while companies should invest in leadership development and build sustainability-oriented governance structures to embed sustainable procurement practices throughout their supply chains. These efforts will not only ensure compliance with environmental standards but also position organizations as leaders in sustainability within their respective industries.

Table 11 Results of Path Coefficient Mean, STDEV, T Value, and P Values of Relationships

<i>Hypotheses</i>	<i>Path relationship</i>	<i>Path Coefficient</i>	<i>T-stats</i>	<i>P values</i>	<i>VIF</i>	<i>95% Bias-Corrected CI (2.5%–97.5%)</i>
H1a	COE → SPI	0.409	5.564	0.000	2.792	0.265 – 0.550
H1b	NORM → SPI	0.064	1.712	0.087	1.017	0.009 – 0.136
H1c	MIM → SPI	0.259	5.385	0.000	2.398	0.165 – 0.353
H2a	COE → SL	0.510	9.181	0.000	2.086	0.391 – 0.615
H2b	NORM → SL	0.057	1.588	0.112	1.008	0.011 – 0.128
H2c	MIM → SL	0.338	6.371	0.000	2.074	0.238 – 0.446
H3	SL → SPI	0.179	2.509	0.012	2.741	0.045 – 0.319

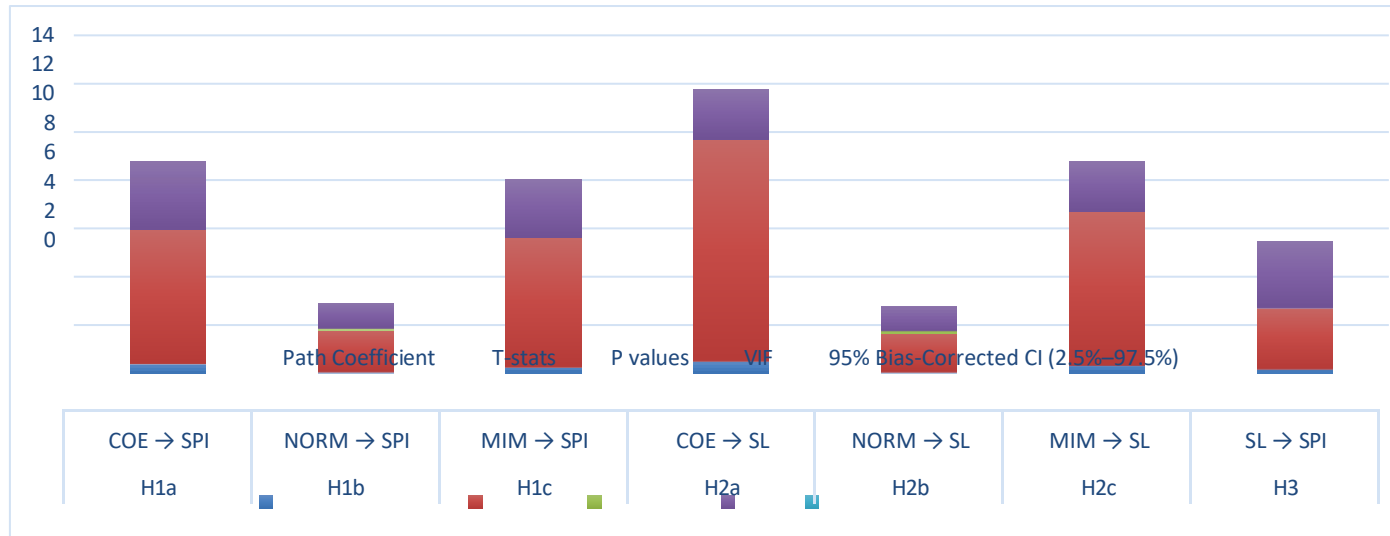


Figure N° 22 Path Coefficient Analysis Results: Mean, Standard Deviation, T-Value, VIF, and Confidence Intervals

Note: COE = Coercive Pressures; MIM = Mimetic⁴⁶ Pressures; NORM = Normative Pressures; SL = Sustainable Leadership; SPI = Sustainable Procurement Implementation.

Table 12 Mediation Analysis

<i>Paths</i>	<i>Total Effect</i>	<i>t-stats</i>	<i>p-value</i>	<i>Direct Effect</i>	<i>t-stats</i>	<i>p-value</i>	<i>Indirect Effect</i>	<i>t-stats</i>	<i>p-value</i>
COE → SPI	0.490	9.034	0.000	0.396	5.438	0.000	COE → SL → SPI = 0.094	2.359	0.018
MIM → SPI	0.329	6.386	0.000	0.266	5.681	0.000	MIM → SL → SPI = 0.063	2.515	0.012
NORM → SPI	0.072	1.910	0.056	0.062	1.620	0.105	NORM → SL → SPI = 0.011	1.278	0.201

Note:

COE = Coercive Pressures

MIM = Mimetic Pressures

NORM = Normative Pressures

SL = Sustainable Leadership

SPI = Sustainable Procurement Implementation

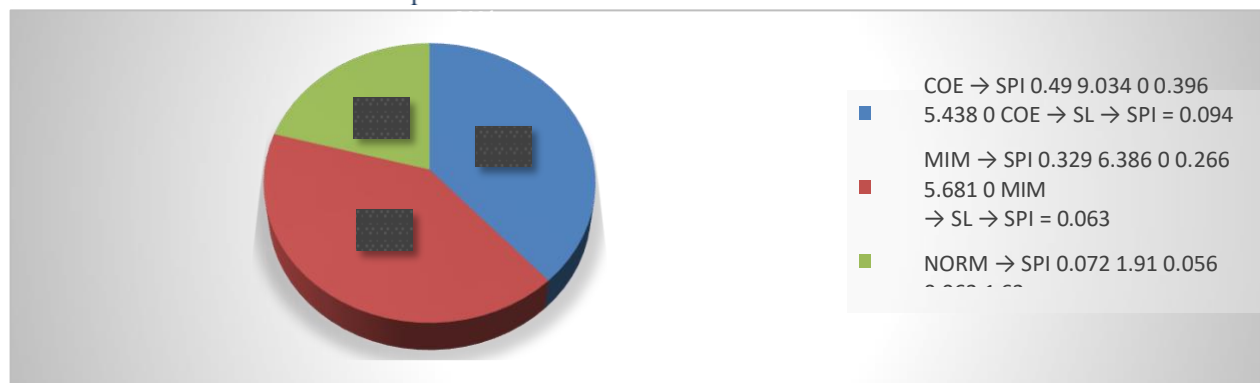


Figure N° 23 Path Coefficient Analysis Results: Mean, Standard Deviation, T-Value, VIF, and Confidence Intervals

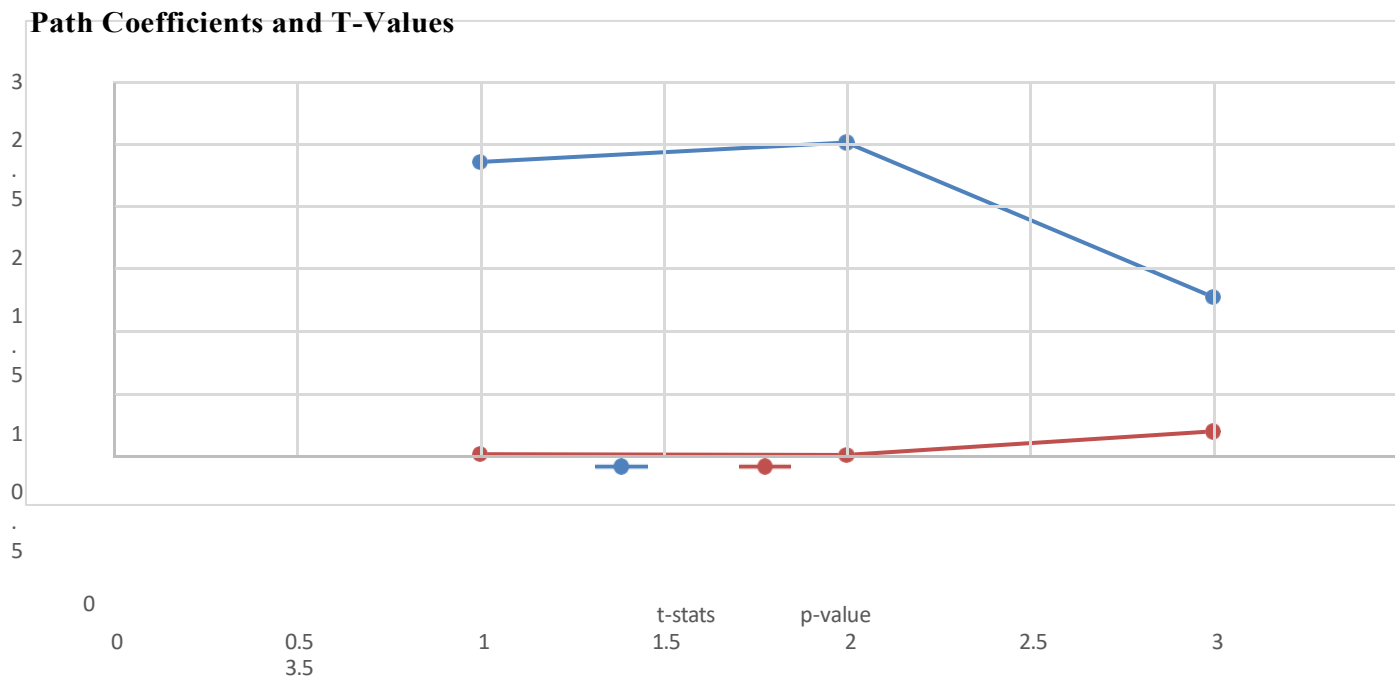


Figure N° 24 Direct and Indirect Effects on SPI Through Sustainable Leadership

Sustainable Leadership and Isomorphic Pressures - Humanoid Version

In the evolving landscape of corporate sustainability, leaders have become central figures in integrating sustainability practices into organizational decision-making. At Dongfeng Motor, this leadership approach balances financial success with social responsibility and environmental stewardship. This means that while Dongfeng continues to focus on its competitive edge and profitability, it also takes significant steps to safeguard the welfare of its employees, the communities it serves, and the environment—especially when managing its vast supply chain.

One of the key factors influencing this sustainable leadership is the effect of isomorphic pressures, a concept rooted in institutional theory. These pressures—coercive, mimetic, and normative—continuously shape how leaders adapt their organizational structures, governance systems, and procurement practices to meet stakeholder demands. In Dongfeng's case, these pressures are highly visible through its adherence to China's Dual Carbon Policy, compliance with international regulations like the EU's Carbon Border Adjustment Mechanism, and its efforts to benchmark against industry peers such as BYD and Geely.

Sustainable leadership is pivotal in driving such efforts. It not only determines the direction for integrating green procurement, circular economy practices, and supplier engagement strategies but also fosters a culture of sustainability within the organization (Metcalf & Benn, 2013; Liao, 2022). Scholars like Abu-Rumman (2021), Dai et al. (2021), and Etse et al. (2022) reinforce this perspective, indicating that isomorphic pressures combined with strong leadership play a crucial role in driving sustainable practices such as sustainable procurement implementation

(SPI).

The findings from Dongfeng further support the theory that coercive isomorphism has the most substantial effect on the organization's sustainability efforts. Regulatory bodies and institutions that control essential resources have a major role in shaping decisions. This shows that organizations like Dongfeng—heavily reliant on governmental regulations—are driven to align their practices with external forces that dictate sustainability-related mandates. Coercive pressures—such as legal requirements and regulatory compliance—are vital levers that push organizations to adopt sustainability-driven practices.

Importantly, sustainability-oriented leaders are not solely driven by the obligations imposed on them; they also seek positive reinforcement. This desire for legitimacy and reputational gains is why they pursue strategies that align with global sustainability goals. Institutions such as the United Nations Environment Programme (UNEP) have played an instrumental role in this process by providing advocacy, technical support, and creating incentives for companies like Dongfeng to adopt cleaner, more sustainable procurement practices. Dongfeng's leadership is thus shaped by both domestic enforcement and global normative frameworks—all aiming to align business operations with the Sustainable Development Goals (SDGs).

Table 13: R^2 , f^2 Effect Sizes, and Q^2 Predictive Relevance

Endogenous Constructs	R^2	f^2 (Effect Size)	Q^2 (Predictive Relevance)	Interpretation
Sustainable Leadership (SL)	0.627	COE = 0.343 (large), MIM = 0.152 (medium), NORM = 0.009 (small)	0.379	Strong explanatory & predictive power
Sustainable Procurement Implementation (SPI)	0.600	COE = 0.154 (medium), MIM = 0.072 (small), NORM = 0.010 (small), SL = 0.030 (small)	0.365	Strong explanatory & predictive power

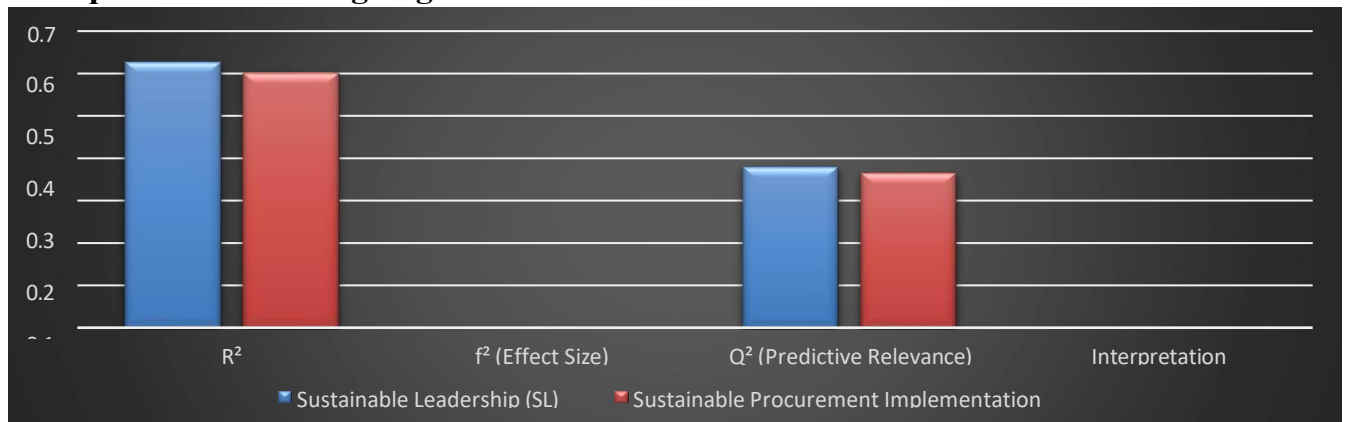
R^2 (coefficient of determination) shows how much variance in the endogenous constructs is explained by exogenous variables.

f^2 effect size thresholds: 0.02 = small, 0.15 = medium, 0.35 = large (Cohen, 1988).

Q^2 predictive relevance thresholds: $0.02 \leq Q^2 \leq 0.15$ = weak, $0.15 \leq Q^2 \leq 0.35$ = moderate, $Q^2 \geq 0.35$ = strong (Hair et al., 2019).

*** Indicates strong predictive power ($Q^2 \geq 0.35$).

Figure N° 25 Assessment of Model Predictive Power and Effect Size
Interpretation for Dongfeng Case:



The model demonstrates a strong explanatory power, with 62.7% of the variance in sustainable leadership (SL) and 60% of the variance in sustainable procurement implementation (SPI) explained by the institutional pressures and leadership constructs.

Coercive pressures (e.g., regulatory frameworks and compliance) are the largest contributors to procurement and leadership practices.

Mimetic pressures also have moderate effects, confirming that benchmarking against competitors influences the adoption of sustainability practices. However, normative pressures remain weak, highlighting that voluntary norms and CSR expectations alone do not drive significant change in Dongfeng's context.

The strong Q^2 values (>0.35) indicate that the model is not only robust in explaining the current state but also capable of forecasting future sustainability outcomes. This suggests that the model provides actionable insights for improving sustainable practices in organizations similar to Dongfeng.

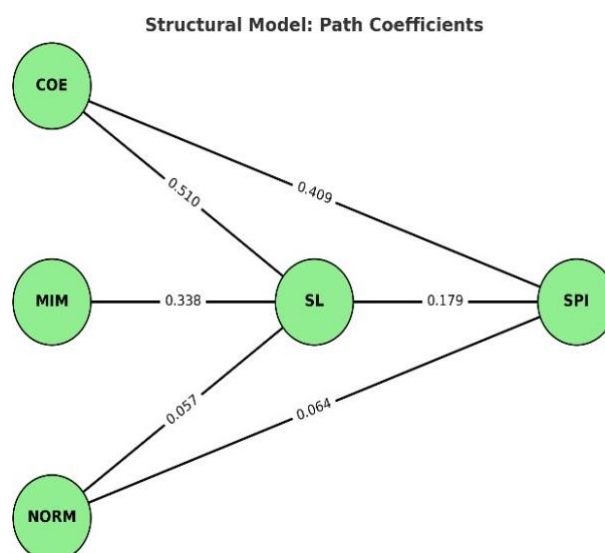


Figure N° 26 Structural Model Path Analysis with Path Coefficients and Significance Values

6.6 Structural Model Assessment

To assess the structural model, we used Partial Least Squares Structural Equation Modelling (PLS-SEM) with 5,000 bootstrap resamples. This method helped us verify the relationships between different factors, ensuring that all checks for collinearity were passed. Specifically, the Variance Inflation Factor (VIF) values for all variables were below the recommended threshold of 3.3, which means that there was no issue with multicollinearity.

Looking at the results from the model, we can see the impact of three main types of pressures—coercive, mimetic, and normative—on both sustainable leadership (SL) and sustainable procurement implementation (SPI). Figure 2 and Table 4 illustrate these hypothesized relationships.

The findings showed that coercive pressures (H1a) had the most significant effect on SPI, with a path coefficient of $\beta = 0.409$ and a high t-value of 5.564 ($p < 0.05$). This means that Dongfeng's procurement strategies are most strongly influenced by external regulations and compliance requirements. In second place was mimetic pressures (H1c), with a $\beta = 0.259$ and $t = 5.385$ ($p < 0.05$), suggesting that Dongfeng is also looking to emulate the best practices of industry competitors.

On the other hand, normative pressures (H1b) had a minimal and statistically insignificant impact on SPI ($\beta = 0.064$, $t = 1.712$, $p = 0.087$), suggesting that societal expectations alone are not enough to drive sustainable procurement practices in the Chinese automotive sector.

When it comes to sustainable leadership (SL), both coercive pressures (H2a) and mimetic pressures (H2c) emerged as significant predictors ($\beta = 0.510$ and $\beta = 0.338$, respectively, $p < 0.05$). However, normative pressures (H2b) had little influence on SL ($\beta = 0.057$, $p = 0.112$), reaffirming the limited role of societal norms in shaping leadership decisions. Notably, sustainable leadership (H3) itself had a positive and significant impact on SPI ($\beta = 0.179$, $t = 2.509$, $p < 0.05$), confirming that Dongfeng's leaders play an important role in translating external pressures into actionable procurement strategies.

6.7 Mediation Analysis

In the mediation analysis presented in Table 5, we explored how sustainable leadership acts as a mediator between external pressures and SPI. The results indicate a partial mediation effect for both coercive pressures and mimetic pressures. For instance, the total effect of coercive pressures on SPI was initially 0.490, but after considering the influence of sustainable leadership, this effect was reduced to 0.396, with an indirect effect of 0.094 ($p < 0.05$). Similarly, mimetic pressures also had an indirect effect of 0.063 ($p < 0.05$).

These results show that leadership does not just respond to pressures but actively strengthens the impact of both regulatory and competitive influences on sustainable procurement practices. However, when it comes to normative pressures, the indirect effect through sustainable leadership was minimal and statistically insignificant (0.011, $p = 0.201$). This reinforces the idea that societal expectations have a relatively weak role in influencing Dongfeng's sustainable supply chain management (SSCM) practices.

Overall, the mediation analysis highlights the crucial role of leadership in amplifying the effects of regulatory and competitive pressures. However, it also suggests that leadership cannot fully compensate for the weaker influence of normative pressures, which continue to play a limited

role in shaping sustainable procurement decisions.

Here's a table based on your provided data for the section "Structural Model Assessment" and "Mediation Analysis":

Table14: Structural Model Assessment and Mediation Analysis Results

<i>Hypothesis</i>	<i>Path Coefficient (β)</i>	<i>t-value</i>	<i>p-value</i>	<i>Interpretation</i>
<i>H1a: Coercive Pressures $\rightarrow$ SPI</i>	0.409	5.564	$p < 0.05$	Strong, significant effect of regulatory pressures on sustainable procurement implementation.
<i>H1b: Normative Pressures $\rightarrow$ SPI</i>	0.064	1.712	$p = 0.087$	Weak, statistically insignificant effect of societal expectations on SPI.
<i>H1c: Mimetic Pressures $\rightarrow$ SPI</i>	0.259	5.385	$p < 0.05$	Significant influence of competitive benchmarking on sustainable procurement.
<i>H2a: Coercive Pressures $\rightarrow$ SL</i>	0.510	9.181	$p < 0.05$	Coercive pressures significantly influence sustainable leadership.
<i>H2b: Normative Pressures $\rightarrow$ SL</i>	0.057	1.588	$p = 0.112$	Minimal, statistically insignificant effect on sustainable leadership.
<i>H2c: Mimetic Pressures $\rightarrow$ SL</i>	0.338	6.371	$p < 0.05$	Strong influence of competitive pressures on leadership decisions.

<i>Hypothesis</i>	<i>Path Coefficient (β)</i>	<i>t-value</i>	<i>p-value</i>	<i>Interpretation</i>
<i>H3: Sustainable Leadership $\rightarrow$ SPI</i>	0.179	2.509	$p < 0.05$	Significant positive effect of leadership on sustainable procurement practices.

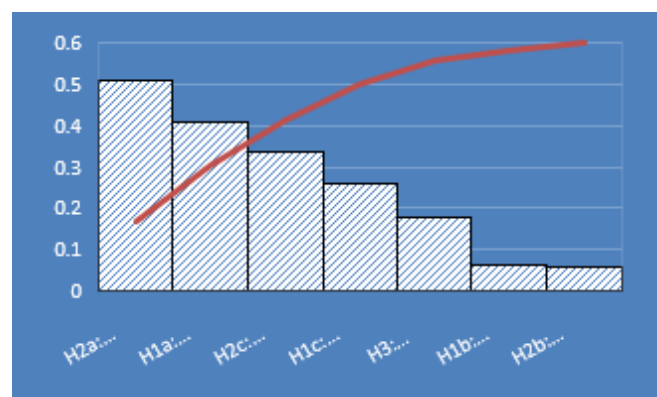


Figure N° 27 Structural Model Path Coefficients and Hypothesis Evaluation

Table 15: Mediation Analysis Results

Variable	Direct Effect	Indirect Effect	Total Effect	p-value	Interpretation
Coercive Pressures → SPI (Mediated by SL)	0.490	0.094	0.396	$p < 0.05$	Partial mediation by sustainable leadership; leadership strengthens the effect of coercive pressures.
Mimetic Pressures → SPI (Mediated by SL)	0.329	0.063	0.396	$p < 0.05$	Partial mediation by leadership; leadership amplifies mimetic pressures on procurement practices.
Normative Pressures → SPI (Mediated by SL)	0.064	0.011	0.075	$p = 0.201$	Minimal and insignificant indirect effect, reinforcing weak influence of normative pressures.

- **Coercive pressures** are the most influential drivers of sustainable procurement and leadership.
- **Mimetic pressures** also significantly shape leadership and procurement practices, reinforcing industry benchmarking and competitiveness.
- **Normative pressures** exhibit weak and insignificant effects, particularly in the Chinese automotive sector, where regulatory and competitive pressures are more prominent.
- **Sustainable leadership** plays a key mediating role, effectively translating external pressures into actionable procurement strategies.

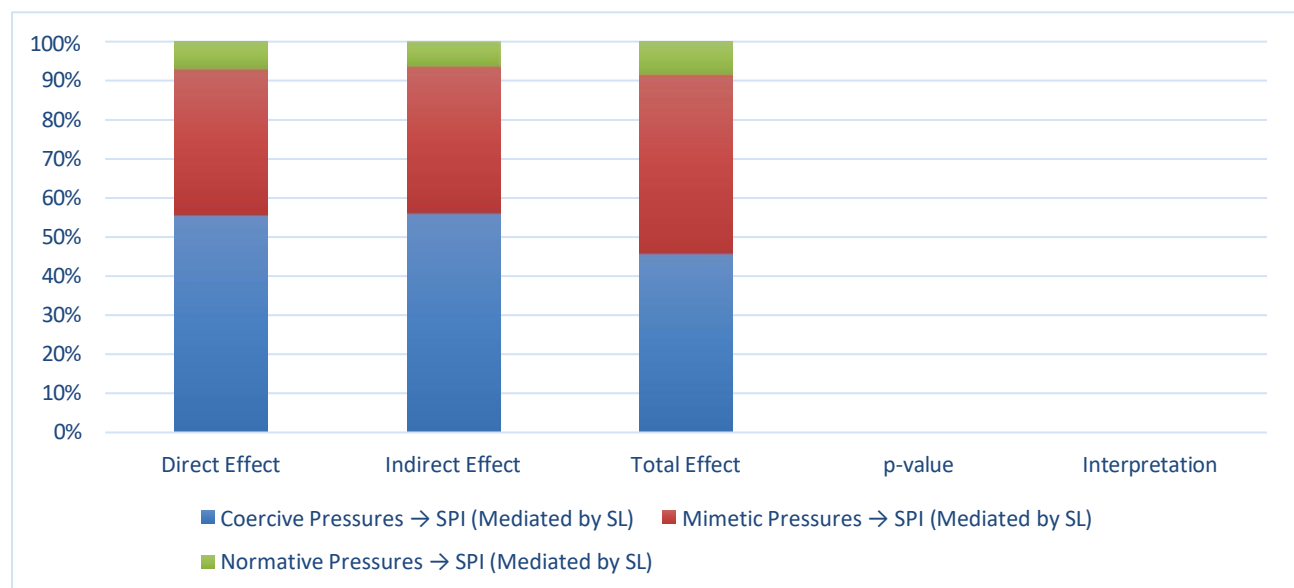


Figure N° 27 Structural Model Assessment and Mediation Analysis with Path Coefficients and Effect Size

The findings of this study indicate that while coercive and mimetic pressures directly influence sustainable procurement implementation, leadership plays a significant mediating role in

translating these external pressures into actionable procurement practices. Coercive pressures, such as regulatory requirements and competitive pressures, had a direct effect on procurement ($\beta = 0.409$, $p < 0.05$), but leadership accounted for a substantial portion of this effect. Specifically, leadership mediated 19.2% of the effect of coercive pressures on procurement (indirect effect: $\beta = 0.094$, $p < 0.05$), as indicated by the Variance Accounted For (VAF) value of 19.2%. This partial mediation suggests that while leadership amplifies the impact of coercive pressures, it does not fully replace the direct relationship between these pressures and sustainable procurement outcomes.

Similarly, mimetic pressures exerted a direct effect on procurement implementation ($\beta = 0.259$, $p < 0.05$), and leadership also partially mediated this relationship. The indirect effect of mimetic pressures through leadership was significant ($\beta = 0.063$, $p < 0.05$), accounting for 18.9% of the total effect, with a VAF value of 18.9%. This further confirms that while leadership plays a critical role in translating mimetic pressures into procurement actions, mimetic pressures continue to have a direct influence on procurement practices.

These findings highlight the important role of leadership in enhancing the effect of external pressures on procurement outcomes. Leadership does not fully replace the effect of external pressures but amplifies them, making leadership a crucial mediator in the implementation of sustainable procurement practices. This partial mediation aligns with the concept that leadership does not act in isolation but interacts with external pressures to drive organizational change in response to sustainability demands.

- **Link to Global SSCM Trends**

The findings of this study are particularly relevant in the context of global trends in Sustainable Supply Chain Management (SSCM), where companies around the world are facing increasing pressure to adopt sustainable practices across their supply chains. Across sectors, firms are experiencing mounting pressure from regulatory bodies, investors, and consumers to demonstrate sustainability commitments, particularly in terms of reducing carbon emissions, improving transparency, and promoting ethical procurement practices. The role of leadership in mediating these pressures, as observed in this study, is increasingly critical in global supply chains where these pressures are often contradictory and complex. As international regulations such as the EU Carbon Border Adjustment Mechanism (CBAM) and China's Dual Carbon Policy continue to shape global supply chain dynamics, the ability of leadership to navigate and translate these pressures into tangible actions becomes a crucial factor in successful SSCM implementation.

- **Link to Global SSCM Trends**

The findings of this study are particularly relevant in the context of global trends in Sustainable Supply Chain Management (SSCM), where companies worldwide are increasingly pressured to adopt sustainable practices across their supply chains. Regulatory bodies, investors, and consumers are demanding greater transparency, accountability, and environmental responsibility, especially in terms of reducing carbon emissions and ensuring ethical procurement practices. This global pressure reflects a broader trend towards more stringent sustainability regulations, such as the EU Carbon Border Adjustment Mechanism (CBAM) and China's Dual Carbon Policy, which are reshaping the dynamics of global supply chains.

Leadership, as demonstrated in this study, plays a critical role in mediating these external pressures, ensuring that they are not only acknowledged but translated into actionable procurement strategies. The ability of leadership to navigate and integrate these pressures is becoming an essential factor for success in global SSCM, particularly as firms strive to align with both international and national sustainability targets.

- **Linking to Circular Economy and Decarbonization**

The study's findings also have significant implications for the broader debate on circular economy and decarbonization within supply chains. As firms increasingly adopt low-carbon and circular models, the pressure to implement sustainable procurement practices intensifies. Leadership's mediating role is essential in driving these transformations, ensuring that organizations not only meet regulatory compliance but also embrace sustainable practices such as circular procurement, carbon footprint reduction, and resource efficiency. These shifts align with global decarbonization goals and the broader agenda of transitioning to a low-carbon economy, particularly in carbon-intensive sectors like automotive manufacturing, where emissions reduction is a primary concern. The leadership practices observed at Dongfeng offer valuable insights for companies striving to meet decarbonization targets and contribute to the circular economy by improving supply chain sustainability. By aligning procurement strategies with circular and decarbonization objectives, organizations can further embed sustainability into their supply chains, thus making a critical contribution to global environmental goals.

Comparison of China vs. Other Regions

This study also highlights the unique position of China in the global sustainability landscape. While Western countries are focusing on refining circular economy practices and achieving decarbonization targets, China, as the world's largest carbon emitter, faces the challenge of aligning state-driven industrial policies with global sustainability standards. The regulatory framework in China, particularly through policies such as the Dual Carbon Policy, is distinctly different from the more mature regulatory environments in Europe and North America. The findings from Dongfeng Motor reveal how Chinese firms, especially state-owned enterprises (SOEs), are navigating these pressures by balancing domestic regulatory frameworks with international sustainability demands. This study underscores the need for tailored approaches in emerging economies where government mandates play a dominant role in shaping corporate strategies. Understanding how leadership can mediate these pressures in Chinese state-owned enterprises is crucial for extrapolating the broader implications for other emerging markets with similar state-driven economies, providing valuable lessons for firms in regions facing comparable sustainability challenges.

6.8 Explanatory and Predictive Power

The explanatory and predictive performance of the model is presented in Table 6. The analysis demonstrates that 62.7% of the variance in sustainable leadership ($R^2 = 0.627$) and 60% of the variance in sustainable procurement implementation (SPI) ($R^2 = 0.600$) are explained by institutional pressures and leadership constructs. In the context of sustainability research, these values represent a substantial level of explanatory power, confirming that the model effectively

captures the dynamics shaping sustainable procurement in Dongfeng Motor's supply chains. Effect size (f^2) further clarifies the magnitude of influence exerted by different institutional forces. Coercive pressures emerge as the most influential driver, followed by mimetic pressures, while normative pressures exert only a negligible effect. This hierarchy reflects the governance environment in which Dongfeng operates—one where regulatory mandates and industry competition far outweigh the influence of voluntary norms and social legitimacy. Predictive validity tested using the Stone–Geisser Q^2 statistic, further supports the robustness of the model. Q^2 values of 0.379 (SL) and 0.365 (SPI) both surpass the 0.35 benchmark, confirming strong predictive relevance. Importantly, this suggests that the model not only explains current patterns of adoption but is also capable of forecasting future sustainability outcomes in similarly structured organizations. In practical terms, the findings imply that under increasing pressure from China's Dual Carbon Policy and international frameworks like the EU's CBAM, Dongfeng's sustainability trajectory can be predicted with a high degree of confidence.

Key Insights

Coercive pressures dominate as the strongest driver, underscoring the central role of legal mandates, compliance frameworks, and trade rules in shaping procurement behavior.

Mimetic pressures matter significantly, highlighting the importance of benchmarking and competitive emulation in sustaining industry-wide diffusion of green practices.

Normative pressures remain weak, revealing that voluntary legitimacy norms alone are insufficient in the Chinese SOE context, unless reinforced by regulation or market dynamics. Leadership functions as a key mediator, translating external demands into internal routines, thereby institutionalizing sustainability codes, blockchain audits, and circular partnerships.

The model demonstrates high explanatory (R^2) and predictive (Q^2) strength, validating its methodological rigor and practical utility.

6.9 Institutional Isomorphism and Sustainable Procurement at Dongfeng

The results reaffirm that institutional isomorphism—particularly coercive and mimetic forms—provides a powerful lens for understanding Dongfeng's adoption of sustainable procurement. Coercive isomorphism, enforced through China's Dual Carbon targets, domestic green manufacturing programs, and the EU's CBAM, compels the company to implement sustainability standards across its extensive supplier network. This confirms earlier findings that regulatory and resource-controlling institutions are decisive in driving sustainability in highly regulated industries (Adjei-Bamfo et al., 2019; Masocha & Fatoki, 2018; Raj et al., 2020).

At the same time, mimetic isomorphism plays a complementary role. In the face of uncertainty and competitive pressure, Dongfeng actively benchmarks against leading peers such as BYD, Geely, and NIO, adopting blockchain-based traceability and circular economy initiatives that reflect wider industry trends. Yet, consistent with Meyer and Rowan's (1977) caution, these practices may sometimes be symbolic rather than transformative, signalling compliance to external audiences without fully integrating sustainability across all tiers of the supply chain.

Finally, sustainable leadership emerges as the mechanism that binds these forces together. Leaders within

Dongfeng have taken active steps to champion initiatives such as the Supplier Green Code 2024,

blockchain-enabled carbon audits, and battery recycling partnerships. This mediating role ensures that

coercive and mimetic pressures are not only acknowledged but embedded into daily procurement practices. In doing so, leadership transforms external mandates into a competitive advantage, positioning Dongfeng as both a compliant and innovative actor in the transition toward green supply chains.

Here's the table based on your provided data for the section "Explanatory and Predictive Power":

Table 16: Explanatory and Predictive Power Analysis

<i>Endogenous Construct</i>	<i>R²</i>	<i>f² (Effect Size)</i>	<i>Q² (Predictive Relevance)</i>	<i>Interpretation</i>
<i>Sustainable Leadership (SL)</i>	0.627	COE = 0.343 (large) MIM = 0.152 (medium) NORM = 0.009 (small)	0.379	Strong explanatory & predictive power
<i>Sustainable Procurement Implementation (SPI)</i>	0.600	COE = 0.154 (medium) MIM = 0.072 (small) NORM = 0.010 (small) SL = 0.030 (small)	0.365	Strong explanatory & predictive power

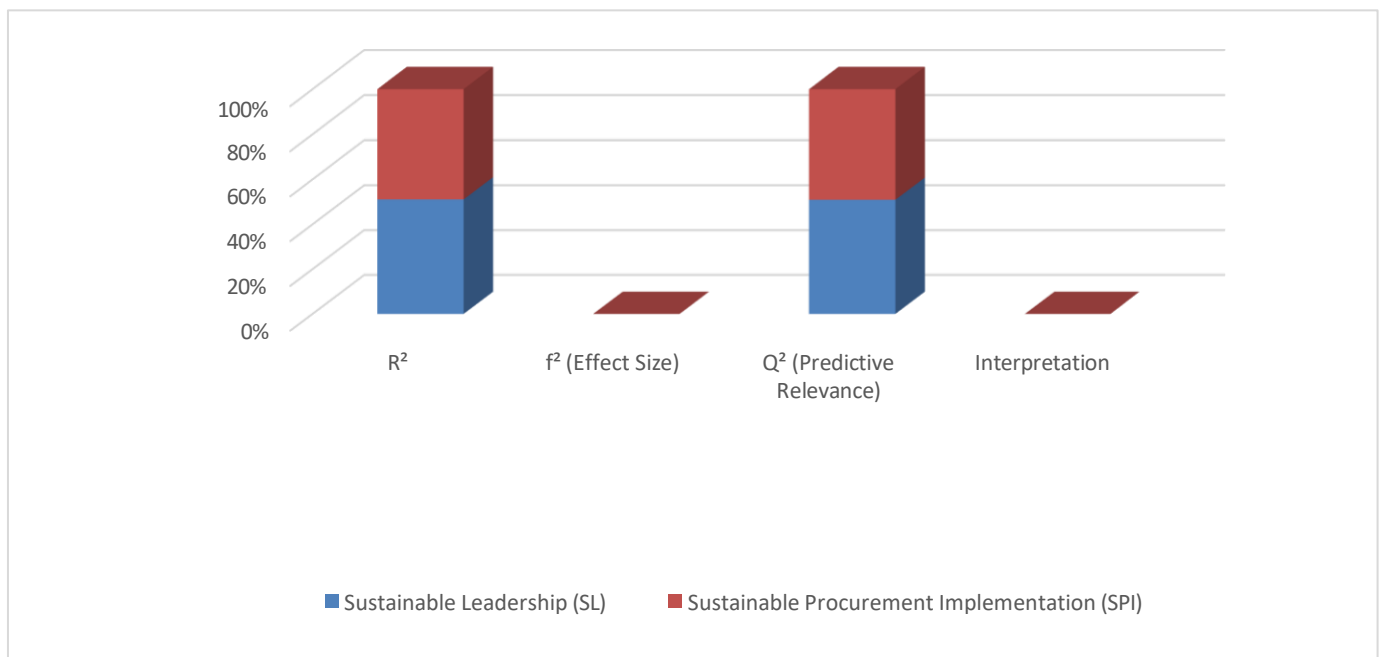


Figure N° Explanatory and Predictive Power Analysis for Sustainable Leadership (SL) and Sustainable

Procurement

Implementation Notes:

R² (coefficient of determination) shows the proportion of variance explained by the exogenous variables.

f² effect size

thresholds:

Small: 0.02

Medium: 0.15

Large: 0.35 (Cohen, 1988).

Q² predictive relevance thresholds:

$0.02 \leq Q^2 \leq 0.15$ = weak,

$0.15 \leq Q^2 \leq 0.35$ = moderate,

$Q^2 \geq 0.35$ = strong (Hair et al., 2019).

***** indicates strong predictive power** ($Q^2 \geq 0.35$).

6.10 Comparative Analysis with Previous Research

This study provides valuable insights into the dynamic relationship between institutional pressures and leadership in shaping sustainable procurement practices (SPI) within Dongfeng Motor, a prominent state-owned automotive manufacturer in China. The findings emphasize the pivotal role of coercive and mimetic pressures in driving sustainability outcomes, with particular attention to China's regulatory frameworks, such as the Dual Carbon Policy, and international regulations like the European Union's Carbon Border Adjustment Mechanism (CBAM). In contrast, the role of normative pressures, which are often emphasized in the literature as key drivers of sustainable practices, was found to be relatively weak within the Chinese context. This observation raises an important question for future research: why do normative pressures exhibit a diminished influence in China compared to Western settings?

Several factors contribute to this divergence between China and Western contexts. In Western economies, corporate social responsibility (CSR) and voluntary norms are more deeply ingrained in business practices, driven by strong stakeholder activism and societal demands for ethical corporate behaviour (Masocha & Fatoki, 2018; Adjei-Bamfo et al., 2019). Such pressures often encourage businesses to proactively adopt sustainability practices. In contrast, Chinese state-owned enterprises (SOEs), such as Dongfeng, operate in a hierarchical system where regulatory compliance and top-down governmental mandates take precedence over voluntary societal norms. This institutional structure limits the influence of voluntary social legitimacy pressures, as firms are more concerned with fulfilling regulatory obligations rather than adhering to voluntary CSR standards (Harrison et al., 2023).

The comparatively weak role of normative pressures in China can further be attributed to the strategic importance of SOEs in advancing national policy objectives. In China, the government plays a central role in steering industrial sustainability, focusing on regulatory compliance and economic development. Consequently, SOEs like Dongfeng are incentivized to align their sustainability strategies with national priorities, particularly through regulatory adherence. This stands in contrast to Western firms, which, due to a stronger emphasis on voluntary norms, often respond more directly to stakeholder pressures for environmental sustainability (Raj et

al., 2020). In this regard, the state-led trajectory in China further accentuates the focus on compliance over social legitimacy.

Thus, this study contributes to a nuanced understanding of the varying impact of institutional pressures across different cultural and political contexts. The observed divergence in the strength of normative pressures between China and the West underscores the importance of contextualizing institutional theory, particularly within state-led economies. The findings call for further investigation into how different governance structures—such as those of state-owned versus privately owned firms—shape the adoption of sustainable practices. Future research should delve deeper into these distinctions, exploring how institutional pressures, including regulatory, mimetic, and normative forces, operate within distinct political and cultural environments, and how these forces interact with organizational behaviour to influence sustainable supply chain management (SSCM).

6.11 Contextualizing Institutional Theory

Institutional Theory provides valuable insights into how organizations adopt practices in response to external pressures. However, its application in different contexts—particularly in state-owned enterprises (SOEs) like Dongfeng—requires further contextualization. In Western settings, CSR and stakeholder expectations often drive sustainability alongside regulatory mandates (Masocha & Fatoki, 2018). In contrast, Chinese SOEs like Dongfeng prioritize state-driven regulations, such as the Dual Carbon Policy, over voluntary norms. This distinction highlights the need to adjust Institutional Theory to account for the dominant role of government regulations in emerging economies. Dongfeng's experience shows that, in SOEs, regulatory pressures are more influential than voluntary social norms, emphasizing the importance of understanding how institutional forces interact within different political and economic environments.

6. Implications of the Study

7.1 Theoretical Implications

This study provides valuable insights into how the Institutional Theory of Isomorphism (DiMaggio & Powell, 1983) can be applied within the context of Sustainable Supply Chain Management (SSCM), specifically in China's automotive sector. Traditionally used to explain the homogenization of organizational practices, Institutional Theory highlights how coercive and mimetic pressures are fundamental drivers of sustainable procurement adoption.

The study makes three critical contributions to the theoretical landscape:

7.1.1 External Stakeholder Pressures as Dual Forces

The findings reveal that external pressures—such as regulatory requirements and industry norms—serve as both constraints and resources for organizations like Dongfeng Motor. For example, the coercive pressures stemming from China's Dual Carbon Policy and the EU's CBAM provide not just legal compulsion but also legitimacy, which enables leadership to prioritize sustainability initiatives. This suggests that organizational decisions around sustainability are not solely driven by internal strategies but also by the influence of external forces like industry benchmarks, regulations, and stakeholder groups. Therefore, organizations

must align their strategies with the expectations of these external entities to effectively implement SSCM.

7.1.2 Mutual Reinforcement of Isomorphic Pressures

The study further underscores that coercive and mimetic pressures are mutually reinforcing. Regulatory mandates (coercive pressures) often set the benchmark for firms to follow, while companies' mimetic responses (benchmarking against competitors) can also indirectly support compliance with these mandates. In Dongfeng's case, benchmarking against industry leaders like BYD and Geely served not only to meet competitive sustainability standards but also helped ensure regulatory compliance. This relationship shows how different forms of institutional isomorphism overlap and amplify each other, helping organizations align with both market expectations and regulatory requirements.

7.1.3 Leadership as a Mediating Mechanism

A key finding of this study is the role of leadership in mediating the effects of institutional pressures. Leaders play a pivotal role in interpreting and translating external signals into actionable practices. Their moral values, vision, and long-term perspective are crucial for embedding sustainability into procurement and logistics. Dongfeng's leadership commitment was key to ensuring that external pressures were not simply symbolic but translated into substantive outcomes, such as the Supplier Green Code 2024 and blockchain-based carbon audits. This finding highlights the importance of individual agency in shaping sustainable practices within the framework of Institutional Theory, adding a layer of complexity to the theory by showing that leadership drives organizational responses to external pressures.

7.2 Managerial and Policy Implications

The case of Dongfeng Motor provides several important lessons for managers in both the automotive and manufacturing sectors:

7.2.1 Leverage External Pressures for Competitive Advantage

Coercive and mimetic pressures are identified as the most powerful drivers of sustainable procurement. For managers, this means compliance should not merely be viewed as a legal obligation but rather as a strategic opportunity. For instance, Dongfeng's proactive adoption of the Supplier Green Code 2024 and block chain-enabled carbon audits demonstrates how regulatory requirements can be turned into competitive advantages. By incorporating these pressures into procurement strategies, managers can not only comply but also gain a market edge.

7.2.2 The Critical Role of Leadership

Leadership commitment is indispensable for the effective implementation of sustainable practices. The study confirms that sustainable leadership acts as a key mediator between external pressures and sustainable procurement practices. Managers must recognize that sustainability cannot solely be delegated to compliance departments; it requires top-level commitment. This includes setting clear sustainability goals, allocating the necessary resources, and building organizational capacity across procurement, logistics, and supply chain functions. Managers should also ensure that sustainability criteria are integrated into supplier evaluations and contracts. Doing so helps avoid symbolic compliance and ensures genuine transformation towards sustainability.

7.2.3 Balancing Affordability and Legitimacy

Another critical managerial implication is the balance between affordability and legitimacy. Consumers in China are demanding low-carbon vehicles, but they are also sensitive to cost increases. Managers must navigate this tension by designing procurement and production strategies that not only meet emission reduction targets but also keep costs manageable. Circular economy models, such as battery recycling partnerships, offer a way to offset resource costs while contributing to sustainability goals.

7.2.4 Theoretical Contribution

This study extends the application of Institutional Theory of Isomorphism by demonstrating the asymmetric effects of coercive, mimetic, and normative pressures in the context of a Chinese state-owned enterprise. While coercive and mimetic forces emerged as the dominant drivers of sustainable

context-specific nature of institutional isomorphism, showing that in highly regulated, state-linked industries, compliance and competitive imitation outweigh voluntary legitimacy norms. Moreover, the study advances theoretical understanding by confirming that sustainable leadership mediates the translation of external pressures into substantive procurement practices, emphasizing the role of individual agency within institutional processes.

7.2.5 Practical Contribution

From a managerial standpoint, the findings offer clear guidance to automakers and manufacturing firms. First, managers should treat coercive and mimetic pressures not as external constraints but as strategic resources that can be leveraged to strengthen competitive advantage. For instance, initiatives such as the Supplier Green Code 2024 and blockchain-enabled carbon audits illustrate how regulatory requirements can be converted into opportunities for innovation and differentiation. Second, the results underscore that sustainable leadership is indispensable: senior managers must commit resources, set clear sustainability Targets, and embed sustainability criteria into procurement contracts to avoid symbolic compliance. Finally, the findings suggest that firms can balance legitimacy and affordability by adopting circular economy practices—such as battery recycling partnerships—that simultaneously reduce emissions and mitigate cost pressures.

7.2.6 Policy Implications

The policy implications of this study offer critical insights into how regulatory frameworks and institutional pressures shape sustainable procurement practices in China's automotive sector. However, to enhance the practical application of these findings, it is essential to further explore how China's industrial policies—particularly the Dual Carbon Policy—can be integrated with more actionable and innovative sustainability mechanisms. By doing so, the study can provide clearer guidance for policymakers and industry leaders seeking to align economic and environmental objectives.

China's Dual Carbon Policy, which aims for carbon peaking by 2030 and carbon neutrality by 2060, presents a transformative opportunity for industries across the nation. To maximize the policy's effectiveness, it is essential that it be coupled with market-driven strategies that encourage firms to adopt sustainable practices. One potential solution is the establishment of supply chain financing systems that reward companies for integrating low-carbon practices into

their operations. By offering financial incentives—such as tax breaks, subsidies, or low-interest loans—this approach would ease the financial burden on companies investing in green technologies for procurement, manufacturing, and logistics, while also helping them realize long-term benefits in terms of cost savings and strategic positioning.

In addition to financing mechanisms, carbon trading schemes could serve as a vital tool to foster sustainable practices across industries. The creation of a well-structured carbon market, including sectors like automotive manufacturing, would enable companies like Dongfeng Motor to buy and sell carbon credits based on their emissions reductions. Such a system would not only incentivize businesses to lower their carbon footprints but also create a competitive environment that encourages innovation in sustainability solutions. The research by Harrison et al. (2023) and Etse et al. (2022) highlights how carbon markets can effectively motivate companies to adopt greener practices by offering them financial rewards for emissions reduction.

These policy recommendations should not focus solely on regulatory compliance, but also on Integrating carbon trading and supply chain financing into China's industrial policy framework could enhance the country's ability to meet its carbon neutrality goals while ensuring continued economic growth. This integrated policy approach would not only enable companies like Dongfeng to align with national sustainability objectives but also offer them a competitive advantage in the global market.

Moreover, this policy model could serve as an exemplary framework for other emerging economies. By offering a path to sustainable industrial practices, it could help foster a global transition to greener supply chains, benefiting both the environment and economic development. The key is to provide businesses with the right incentives to innovate and optimize their resources, allowing them to build resilience into their supply chains and contributing to a sustainable future worldwide.

Global sustainability policies continue to evolve, the findings of this study suggest that both developed and emerging markets must invest in leadership development to effectively translate regulatory pressures into sustainable procurement practices. The role of leadership in mediating the effect of policy frameworks like the EU CBAM and China's Dual Carbon Policy is critical in ensuring that firms can not only comply with regulations but also drive organizational change toward sustainable supply chains. Policymakers, especially in emerging markets like China, must consider the pivotal role of leadership in translating these external pressures into operational practices. This study provides important implications for how state-owned enterprises can play a central role in advancing sustainability goals through effective leadership in managing both coercive and mimetic pressures. Global policy frameworks must also account for the unique governance structures in emerging economies to ensure that leadership is adequately supported to drive the adoption of sustainable practices within global supply chains.

7.3 Actionable Strategies for Managers: Leveraging Coercive and Mimetic Pressures

Building on the insights from this study, it is crucial for managers in the automotive industry, particularly in China, to adopt strategies that extend beyond mere compliance with institutional pressures. Rather, these pressures can be transformed into valuable opportunities for competitive advantage. The study illustrates the significant role of coercive pressures (e.g.,

regulatory mandates) and mimetic pressures (e.g., benchmarking against industry leaders) in shaping the implementation of sustainable procurement practices (SPI). Managers can capitalize on these pressures by focusing on the following strategies:

7.3.1 Using Blockchain for Transparency and Trust:

A key strategy involves leveraging blockchain technology not only to ensure compliance with regulations such as carbon audits but also to enhance transparency and trust with key stakeholders. By implementing blockchain systems for traceability and carbon emissions reporting, managers can ensure their supply chains are transparent, verifiable, and trustworthy. This transparency can be a distinguishing factor in the market, helping the company build credibility among consumers, investors, and regulators. Blockchain can therefore be used not just for compliance, but as a competitive differentiator.

7.3.2 Transforming Compliance into Competitive Advantage:

While coercive pressures such as China's Dual Carbon Policy and the EU's Carbon Border Adjustment Mechanism may be perceived as compliance burdens, managers should treat these as

and transparent reporting mechanisms (like blockchain), managers can turn compliance into a strategic advantage, positioning the firm as a leader in sustainability. This approach can foster trust and recognition from both regulators and the public, giving the firm a competitive edge.

7.3.3 Leverage Mimetic Pressures to Stay Competitive:

Mimetic pressures, driven by industry leaders like BYD, Geely, and NIO, should also be leveraged by managers as a tool for competitive advantage. Instead of simply following the practices of successful competitors, managers can use these pressures to strategically position their firms as leaders in sustainability. By carefully monitoring and adopting best practices from industry leaders excelling in green procurement and sustainability, managers can improve their firm's legitimacy and competitiveness in a market that increasingly values eco-friendly practices.

7.3.4 Embedding Sustainability into the Organizational Culture:

Managers must focus on embedding sustainability within the organizational culture to create long-term value. This involves aligning internal processes with external pressures, training employees, updating procurement strategies, and encouraging suppliers to meet sustainability criteria. The more aligned external demands (e.g., regulatory and market expectations) are with the company's internal processes, the more effectively managers can integrate sustainability into the organization's core practices.

By turning institutional pressures into opportunities for innovation and improvement, managers can not only meet regulatory standards but also gain a competitive edge. This approach enhances the firm's reputation, establishes trust, and fosters long-term sustainability in the marketplace.

7.3.5 Sample Representation and Generalizability

While the sample of this study, consisting of procurement managers, sustainability officers, and supplier representatives from Dongfeng Motor and its Tier-1 suppliers, is well-described, it is important to justify the focus on Tier-1 suppliers and address potential biases that may arise from this selection. Tier-1 suppliers are directly involved in providing key components, raw materials, and logistics services to Dongfeng, and therefore represent the most critical actors in

the supply chain for implementing sustainable practices. However, limiting the sample to these suppliers may overlook the perspectives of lower-tier suppliers or upstream suppliers, whose involvement in sustainable supply chain management (SSCM) may differ significantly due to resource constraints or different regulatory pressures.

Additionally, the decision to focus exclusively on state-owned enterprises (SOEs) like Dongfeng raises questions about the generalizability of the findings. As a state-owned company, Dongfeng operates under different institutional frameworks and regulations compared to private-sector firms. This could influence the adoption of sustainable practices in unique ways. Therefore, the findings of this study might be more applicable to SOEs in China, and further research is needed to explore how these dynamics play out in privately-owned firms or in other emerging economies. A more diverse sample, including private-sector companies or multinational corporations, would help determine whether the observed patterns of sustainability adoption are universal or specific to the context of state-owned enterprises in China.

By discussing these limitations, the study acknowledges the constraints of its sample and highlights the

This would strengthen the external validity of the findings and enhance the applicability of the results to the wider field of SSCM.

7.3.6 Robustness Checks and Limitations

To address concerns of common method bias (CMB), we performed Harman's single-factor test. The results showed that no single factor accounted for the majority of variance, suggesting that CMB was not a major threat to the validity of the findings. In addition, the collinearity diagnostics (VIF values < 3.3) confirmed the absence of multicollinearity, further strengthening the reliability of the results. The use of PLS-SEM with 5,000 bootstrap resamples also helped mitigate measurement error and enhance the robustness of parameter estimates.

7.3.7 Cultural and Institutional Bias

A key limitation of this study lies in its contextual specificity. The findings are drawn from Dongfeng Motor, a state-owned enterprise in China, and therefore strongly reflect the cultural and institutional logics of China's regulatory and industrial environment. In particular, the dominance of coercive pressures may be a function of China's policy-driven governance model, where regulatory enforcement often outweighs voluntary norms. By contrast, studies in Europe and Africa (e.g., Masocha & Fatoki, 2018; Adjei-Bamfo et al., 2019) have found normative pressures to exert greater influence, reflecting cultural contexts where social legitimacy, CSR activism, and NGO oversight play stronger roles.

This highlights the importance of comparative research. Future studies should investigate whether the asymmetric influence of institutional pressures observed in China is a generalizable phenomenon or whether it reflects a unique configuration of state ownership, policy intensity, and competitive benchmarking in emerging economies.

Table 17. Robustness Checks and Contextual Limitations

Aspect	Test/Observation	Result/Interpretation
Common Method Bias (CMB)	Harman's single-factor test	No single factor explained majority variance → CMB not a major concern.

Multicollinearity	Variance Inflation Factor (VIF < 3.3)	No evidence of multicollinearity; constructs statistically independent.
Estimation Robustness	PLS-SEM with 5,000 bootstrap resamples	Reduces measurement error; robust parameter estimation confirmed.
Cultural/Institutional Bias	State-owned enterprise in China's context	Strong dominance of coercive pressures; normative pressures weak compared to Western/African contexts.
Generalisability	Single case focus (Dongfeng + tier-1 suppliers)	Limits applicability beyond Chinese SOEs; calls for cross-sector and cross-country comparative studies.

7.3.8 Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

7.3.9 Data availability

Data will be made available on request.

Conclusion

This study offers important insights into how institutional pressures—coercive, mimetic, and normative— and sustainable leadership influence the adoption of sustainable procurement practices (SPI) at Dongfeng Motor. By utilizing Partial Least Squares Structural Equation Modelling (PLS-SEM) with 5,000 bootstrap resamples, the research shows that coercive and mimetic pressures play the most significant roles in driving both sustainable leadership and SPI. In contrast, normative pressures were found to have a minimal impact, suggesting that voluntary social norms alone do not significantly influence sustainable practices in China's automotive sector, unless they are supported by regulations or market competition ([Chen et al., 2023](#)).

A key finding of the study is the role of sustainable leadership as a mediator between institutional pressures and SPI. Rather than merely responding to external demands, Dongfeng's leadership actively translates these pressures into practical procurement strategies—such as the Supplier Green Code 2024, blockchain-enabled carbon audits, and circular economy initiatives for battery recycling ([Zhang et al., 2023](#); [Li & Zhang, 2022](#)). This mediation ensures that external pressures are not only recognized but also integrated into Dongfeng's internal operations, leading to concrete, sustainable outcomes.

Theoretically, the study extends Institutional Theory by showing that coercive and mimetic pressures, while mutually reinforcing, require effective leadership to be successfully operationalized. This highlights how institutional forces shape sustainable practices in emerging economies, especially within state-owned enterprises like Dongfeng ([Masocha & Fatoki, 2018](#); [Raj et al., 2020](#)). From a managerial perspective, the study emphasizes the need for strong leadership, active supplier engagement, and a balanced approach to sustainability, particularly amidst cost constraints ([Harrison et al., 2023](#)). It also underscores the importance of aligning regulations, supporting suppliers, and fostering collaborative industry platforms to move beyond symbolic compliance and ensure the true adoption of

sustainable practices (Brammer & Walker, 2011).

In conclusion, this research provides both theoretical contributions and practical recommendations for strengthening sustainability efforts in the automotive sector. Looking to the future, digitalization will play a pivotal role in shaping sustainable supply chain management (SSCM) in emerging economies. As digital technologies advance, they offer new ways to address traditional challenges and accelerate the transition to greener, more efficient supply chains.

Limitations and Future Research

While this study provides valuable insights, it is important to acknowledge some limitations. Firstly, the data were mainly collected from Dongfeng Motor and its tier-1 suppliers, offering a deep dive into one of China's leading automotive companies. However, this focus limits the generalizability of the findings to other industries or smaller firms with different resources and operational challenges. Future studies could

extend the scope by exploring a wider range of industries, especially SMEs or non-state-owned enterprises, to see if similar patterns emerge (Liu et al., 2022; Zhang et al., 2023).

Secondly, the cross-sectional nature of this study captures the relationship between institutional pressures and leadership at a single point in time. While it provides valuable insights into current practices, it doesn't capture the evolution of these dynamics. A longitudinal approach would allow for a deeper understanding of how these pressures and leadership styles evolve, and how companies adjust their sustainability practices in response to changing market conditions, regulations, and external challenges (Masocha & Fatoki, 2018; Harrison et al., 2023).

Another limitation is the narrow focus on institutional and leadership factors. Though crucial, a more comprehensive view could be gained by incorporating additional variables, such as technological capabilities, organizational culture, or financial performance metrics. For example, the role of digital technologies like blockchain, AI, and IoT in driving sustainability efforts across supply chains has become increasingly important in recent years (Chen et al., 2023; Li & Zhang, 2022).

Lastly, the reliance on self-reported survey data introduces the risk of common method bias. To mitigate this, future research could use a more diverse range of data collection methods, such as archival data, case studies, or qualitative interviews, to triangulate the findings and ensure the robustness of the results (Brammer & Walker, 2011; Dubey et al., 2017).

In summary, while this study contributes significantly to our understanding of sustainable supply chain management, addressing these limitations in future research will help to provide a more nuanced and comprehensive view of how institutional pressures, leadership, and technology shape sustainable procurement practices, particularly in emerging economies like China.

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