

The Role of Marketing Scholarship in Achieving Environmentally Sustainable Consumption and Production: Current and Future Directions

Abstract

Marketing scholarship can play an important role in advancing environmentally sustainable consumption and production, particularly within the retail domain. In this paper, we synthesize existing research across marketing and related fields and introduce a novel two-stage framework that examines sustainability interventions through the lens of retail actor interactions. The framework characterizes how different actors (e.g., consumers, retailers, manufacturers, regulators) influence one another and evaluates interventions based on their feasibility and environmental impact. Although marketing has historically contributed to unsustainable consumption patterns, we argue that it also holds significant potential to accelerate the transition toward environmental sustainability. Retail emerges not only as a context in which sustainability challenges manifest, but as a strategic domain where coordinated action can drive transformative change. Our framework offers a structured approach to mapping existing interventions, understanding their mechanisms, and assessing their effectiveness. It helps stakeholders identify the most promising strategies to foster environmentally sustainable behavior and manage interactions across the retail ecosystem. For marketing scholars, the framework highlights research gaps, reveals barriers limiting the effectiveness of current interventions, and points to opportunities to adapt successful approaches across actors to better support sustainability goals.

Keywords: Sustainable consumption; Sustainable retail; Climate-change mitigation, Greenhouse gas emissions; Impact; Policy

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1. Introduction

The urgent challenge of reducing our environmental footprint will require more sustainable consumption and production (Poushter et al. 2022; Tyson & Kennedy 2023), especially in retailing (Vadakkepatt et al. 2021). It is essential to transition our current behaviors and business practices to use natural resources in ways that meet the needs of today while allowing future generations to fulfill their own needs (Catlin & Wang 2013; Chernev & Blair 2021). Recognizing this imperative, leading retailers including Walmart, Target, Patagonia, and IKEA have adopted key sustainability initiatives, sometimes in partnership with other members of the retailing ecosystem including platforms, suppliers, policymakers, and consumers. However, retailers regularly announce, modify, and even repeal sustainability efforts, reflecting the evolving and often challenging nature of implementing environmental commitments at scale. Marketing scholarship can play a pivotal role in addressing these challenges and encouraging sustainable practices. By leveraging its deep understanding of consumer motivation and behavior, the marketing discipline is uniquely positioned to advocate for the efficient use of natural resources, to promote conservation and regeneration, and to minimize pollution and waste.

We present a novel framework for examining the literature related to sustainable marketing. By synthesizing insights from representative articles and case studies from relevant disciplines, we provide a fresh perspective on the field's accomplishments in defining environmentally sustainable decision-making among consumers, businesses, governments, and other stakeholders. The proposed framework integrates key concepts and theories, highlighting marketing's unique role in addressing global challenges related to the stewardship of natural resources. Crucially, it serves as a foundation for identifying research gaps and new opportunities. Rather than being exhaustive, this illustrative review offers a roadmap for conducting meaningful

and impactful research. Ultimately, this article aims to shape the future of sustainable marketing studies and practice by providing a structured approach to analyzing existing research and promising avenues for future inquiry.

1.1. Defining environmental sustainability

Here, we adopt the United Nations' definition of sustainability and related terms. Consistent with the aim of this article, we focus on environmentally sustainable consumption and production. Specifically, we focus on the UN's Sustainable Development Goal 12 (SDG 12), which aims to ensure responsible patterns of consumption and production. For example, one of the targets (12.6) is to “encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.” SDG 12 focuses on reducing waste, promoting resource efficiency, and encouraging sustainable practices across production and consumption cycles — all of which are central to modern retail operations. Achieving SDG 12 requires collaboration among various stakeholders to solve this “tragedy of the commons” (Ostrom 1999) and protect the environmental system on which human life and the retail system rely. Retailers can partner with suppliers, consumers, and other businesses to create a more sustainable value chain and promote responsible consumption and production by shaping supply chains, sourcing practices, product design, and waste management (e.g., Vadakkepatt et al. 2021).

However, it is unclear how to operationalize and best achieve goals enshrined in SDG 12. First, how do we move from the broader, abstract concept of sustainability to the feasible and effective strategies that will help achieve sustainability? Second, what roles do different actors play?

The parties responsible for sustainability can be classified into individuals, communities, businesses, and governments. In sections 2–7, we describe how these actors interact in efforts to achieve a sustainable state. Users of our definition and framework can identify responsible actors, their dynamic interactions in the ecosystem, and their potential role in this transition.

The concept of sustainability is inherently multi-faceted, encompassing environmental, social, and economic dimensions (Vadakkepatt et al., 2021). In the context of this paper, the focus is on the environmental dimension, and we refer to sustainable consumption as "actions that result in decreases in adverse environmental impacts and reduced use of natural resources across the product or service lifecycle" (White, Habib, & Hardisty 2019, p. 24).

Most research in consumer conservation focuses on whether an intervention reduces overall consumption (e.g., Delmas et al. 2013; Tiefenbeck et al. 2018) or enables adoption of more eco-friendly alternatives (Jansson, Marell, and Nordlund 2010; Kumari, Verma, Debata, and Ting 2022). Likewise, most consumer studies focus on relative behaviors (i.e., consumption levels before and after treatment) rather than evaluating absolute impact levels.

The complement of sustainable consumption is sustainable production. A production pattern is considered sustainable if the processes and materials used to manufacture a product or deliver a service are circular, emit substantially less waste or pollution than conventional production, and are regenerative.¹ Firms can set science-based sustainability targets for reducing carbon emissions² and directly measure whether the materials or services they deliver are circular—that is, recycled, remanufactured, repurposed, and/or reused. Sustainable production implies avoiding overproduction or overprocessing. This means that demand drives supply and production, but again, there is little guidance for being a sustainable or responsible producer.

¹ <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>

² See <https://sciencebasedtargets.org/> for more background information.

2. Framework

Retailers occupy a unique position as both facilitators of consumption and gatekeepers of production standards. Through their decisions on product assortments, private-label sourcing, promotional strategies, and sustainability certifications, they influence both upstream suppliers and downstream consumer behavior. At the same time, digital retail platforms shape sustainable choices via algorithmic product visibility, default options, and nudges, while intermediaries and logistics providers affect the environmental footprint through packaging, warehousing, and last-mile delivery. Consumers respond to these structures but also exert pressure on retail systems and on other consumers through their preferences, activism, and willingness to engage in alternative consumption models such as resale or repair.

Given their central role across the product lifecycle, retail actors are implicated in both the sustainability problem and the solution space (Vadakkepatt et al. 2021). Many unsustainable practices—including overproduction, excessive returns, fast fashion, and resource-intensive fulfillment—are embedded in retail operations. Yet these same actors also hold significant potential to drive change, whether by shifting supply chain expectations, reconfiguring the consumer choice architecture, or enabling circular models. For example, Do Vale, Collin-Lachaud, and Lecocq (2025) demonstrate how sustainable business model innovation in retailing involves restructuring the ecosystem through the effective management of relationships with both traditional and emerging stakeholders. Through this transformative process, retailers assume new roles within the ecosystem, increasingly functioning as local hubs for circularity. A deeper understanding of, and collaboration with, the various actors in the broader retail ecosystem can enable retailers to develop more responsible strategies that are not only efficient from a business

model perspective but also beneficial to consumers and society as a whole (Holtrop, Lobschat & ter Braak 2025).

We propose a decision-making framework that can be readily applied to the retail ecosystem, helping to classify the source and target of sustainability interventions across these actors, and to evaluate their feasibility and impact. Mapping existing interventions by these dimensions allows actors to identify effective ways to influence a chosen target. It also enables researchers or actors to identify gaps and learn from other actors how to potentially increase impact or feasibility to contribute towards SDG 12. Retail thus emerges not only as a context in which sustainability plays out, but as a domain where coordinated action has the potential to deliver transformative change.

Prior marketing scholarship has proposed frameworks to induce sustainability in *consumers'* behavior (e.g., Peattie and Peattie 2009; White et al. 2019). While these prior frameworks are useful, their exclusive focus on consumers limits its application. We address this limitation by considering a more comprehensive set of stakeholders (1) who can influence consumers and (2) whose behaviors also need to be changed to achieve sustainable production and consumption. These stakeholders include individuals and collectives composed of individuals (i.e., labor unions, community groups), industries/sectors, retailers, manufacturers, platforms, industry associations, institutional investors, and government agencies. Table 1 below outlines key retail stakeholders, their primary roles, and illustrative examples.

The dynamics represented by our framework are especially salient in retail contexts, where a diverse set of actors—including retailers, shoppers, digital platforms, intermediaries, and supply chain partners—interact to bring products to market. These interactions between these

Table 1: Retail Actors, Roles, and Examples

Actors	Primary Role	Illustrative Examples
Retailers	Offer products or services for sale to shoppers via physical stores or online channels.	Walmart, Nike, Zara, Lush, Target, H&M, Tesco, IKEA, Patagonia, Sephora, Best Buy.
Shoppers (Consumers)	Evaluate, select, and purchase goods or services for personal or household use.	Amazon.com consumers, mall shoppers, grocery store customers, individuals participating in the Buy Nothing Project.
(Digital) Platforms	Provide marketplace or infrastructure (online or offline) that connects retailers and shoppers. Includes e-commerce platforms, marketplace platforms, delivery service providers.	<i>E-commerce Marketplaces</i> : Amazon Marketplace, eBay, Etsy, Alibaba, Tmall, Rakuten, Zalando; <i>SaaS E-commerce Platforms</i> : Shopify, BigCommerce; <i>Food Delivery</i> : Uber Eats, Zomato; <i>Booking Platforms</i> : Booking.com, Expedia.
Manufacturers / Suppliers / Wholesalers	Produce, source, or distribute products, supplying inventory to retailers. Includes manufacturing firms.	Procter & Gamble (P&G), Unilever, Nestlé, Samsung, Intel, Foxconn, Sysco, Li & Fung.
Regulators / Government Agencies / Intergovernmental Agencies	Establish and enforce legal, safety, and sustainability standards that shape retail practices.	U.S. Federal Trade Commission (FTC), U.S. Food and Drug Administration (FDA), European Commission, State Administration for Market Regulation (SAMR - China), EPA, CPSC.
Real-estate Companies	Develop, own, lease, and manage physical properties used for retail stores, shopping malls, distribution centers.	Simon Property Group, Prologis, Wanda Group, CapitaLand, Westfield, Brookfield Properties.
Retail Associations	Advocate for the retail industry on policy issues, provide research and data, offer educational programs, and facilitate collaboration.	National Retail Federation (NRF - US), British Retail Consortium (BRC - UK), EuroCommerce (EU), China Chain-Store & Franchise Association (CCFA).
NGOs / Consumer Groups	Advocate for social/environmental causes, monitor retail practices, influence consumers, and collaborate with retailers.	Greenpeace, World Wildlife Fund (WWF), Rainforest Alliance, Consumers International, Public Interest Research Group (PIRG), local consumer advocacy groups.
Logistics / Delivery Providers	Manage warehousing, transportation, and last-mile delivery of goods.	UPS, DHL, FedEx, SF Express, JD Logistics, Maersk, C.H. Robinson, Kuehne + Nagel, Ryder.
Employees	Influence both upstream (purchasing/sourcing) and downstream (customer consumption) practices, and Initiate retail-driven change toward sustainable production and consumption	Whole Foods or Patagonia Employees actively recommend certified products, explain their environmental benefits, and guide shoppers toward low-impact options.
Technology Providers	Offer various technology solutions beyond payments (e.g., cloud, AI, analytics, CRM, ERP) supporting retail operations and initiatives.	Microsoft, Salesforce, SAP, Google, Oracle, specialized analytics firms, AI personalization engines, supply chain visibility software providers.

stakeholders can be complex. To illustrate this mutual influence, consider the following example involving sustainable apparel. From the bottom up, eco-conscious consumers are driving change by demanding products that are transparent about sourcing and environmental impact. Retailers may respond by promoting sustainable options and collaborating with sustainable brands. Manufacturers follow suit, adjusting their production and supply chains to meet expectations. Suppliers, in turn, invest in greener methods to remain competitive. From the top down, governments and regulatory agencies may introduce regulations or offer incentives for sustainable innovation (industry) or adoption (consumer). Ultimately, this interconnected network creates positive feedback loops, encouraging greater sustainability across the industry. The example also demonstrates how each actor influences and is influenced by the others.

Our broader focus is consistent with the marketing discipline's ambition to contribute by influencing behaviors not only of consumers but also of all stakeholders that matter to businesses and nonbusiness stakeholders in society (Chandy et al. 2021; Madan et al. 2023; Moorman 2024). We propose a two-stage framework that categorizes sustainability interventions according to the source and target (and whether each is a micro or macro actor), summarizes extant empirical evidence, and elicits questions for future research.

2.1. The first stage: Source-Target Classification

The notion of intervention suggests two parties: a source and a target. The source (intervention initiator) is the actor that designs, implements, or sponsors an intervention aimed at changing sustainability-related behaviors of the target actor (intervention recipient). Sources actively deploy resources, messaging, incentives, or policies to influence target behavior. Targets are the focal decision-makers whose actions the intervention aims to modify. We can think of environmental sustainability interventions as persuasion attempts (e.g., Petty & Cacioppo 1986;

McGuire 2000)), involving a source attempting to influence a target. Accordingly, the first stage of our framework includes two axes that answer the two questions: (1) Who attempts to initiate a behavioral change? (2) Whose behavior is attempted to be changed? Depending on the context, the same actor (e.g., a firm) can be either source or target.³

2.2. *Micro-Macro Distinction*

We propose a classification scheme based on decision-making capacity and scope of influence to distinguish between micro and macro actors. Micro actors are decision-makers with limited individual agency and localized impact scope—such as individual consumers, employees, or small business owners. Macro actors, by contrast, possess systemic influence and broader impact scope, including focal firms implementing enterprise-wide sustainability strategies, industry associations, government agencies, and international organizations. Importantly, this classification can be context-dependent⁴.

The above distinction between micro and macro actors is made from a retail perspective rather than an economics perspective, where a macroeconomist might classify a firm as micro and a country as macro. Classifying actors into (1) source versus target and (2) micro versus macro yields a four-quadrant matrix, as seen in Table 2. We start with simple examples for clarity, but the micro–macro distinction—based on decision-making capacity and scope of influence—remains central and becomes clearer in complex interactions among stakeholders.

Micro → *Micro*. In the first quadrant, a consumer can influence another by engaging in such behaviors as word-of-mouth (e.g., Bollinger et al. 2022; Constantino et al. 2022).

³ Any self-targeted behavioral change is outside our framework's scope.

⁴ Some organizations may alternate between micro and macro classifications depending on their strategic position and influence (Fischer & Newig 2016).

Macro → Micro. In the second, a firm can design products or persuasive messages, enabling consumers to engage in pro-environmental behaviors (e.g., White et al. 2019). Retailers have increasingly used on-shelf sustainability labels (e.g., carbon footprints, eco-ratings) to guide consumers toward environmentally preferable options. These interventions, often in the form of visual nudges at the point of purchase, exemplify how macro actors (retailers) can influence micro actors (shoppers) (e.g., Ungemach et al. 2018). Similarly, governments can provide monetary or non-monetary incentives to consumers to stimulate demand for environmentally friendly products (e.g., He et al. 2021, 2023).

Micro → Macro. In the third quadrant, through their numerous behaviors (such as purchases, boycotts, and word-of-mouth), consumers may influence firm-level sustainability behaviors (e.g., Giannetti et al. 2019). Retailers are increasingly responsive to consumer pressure for sustainable options, with customer advocacy and purchasing data influencing assortment decisions and prompting the introduction of zero-waste products, refill stations, or plant-based alternatives.

Macro → Macro. In the fourth quadrant, a firm can influence another via market competition or industry coalitions. Retailers also lead Macro → Macro interventions by setting sustainability standards for suppliers or forming partnerships to enable closed-loop supply chains. These practices reflect retail's central role in enabling sustainable production by driving innovation across the value chain. In addition, governments can introduce regulation to change an industry's behavior (Macro → Macro) (e.g., Murali et al. 2019; Pickman 1998). Many countries have instituted Extended Producer Responsibility, requiring firms—rather than municipalities—to bear the costs of recycling or appropriately disposing of their products (Brown et al. 2023).

Importantly, there is considerable heterogeneity regarding the roles, motivations and decisions for different actors in the same quadrant, or for the same actors across different quadrants. It is a key feature of the framework that it can account for this diversity, illustrating how firms, platforms, policymakers, and other stakeholders can occupy different positions across quadrants depending on the focal relationship.

The presented roles within these influence patterns may be multi-directional and can switch dynamically. The same actor may act as both source and target across different interventions and contexts. For example, a retailer (macro) can be a source influencing consumers (micro) through sustainability messaging while simultaneously being a target for regulatory compliance interventions (macro). Similarly, a consumer (micro) can collectively shape retailer policies (macro) while also influencing other consumers (micro) via social networks. Influence chains may span multiple actors and can follow sequential patterns. For example, consumer pressure on platforms (micro→macro) can trigger platforms to impose new sustainability requirements on their suppliers and partners (macro→macro).

To further illustrate the first stage, Table 2 shows the source–target matrix, and the resulting quadrants represent the combinations of who influences whom, with real life examples of interventions and case studies from the retail sector, illustrating each cell. While previous sustainability influence frameworks have typically assumed one of these four quadrants (most often focusing exclusively on quadrant II, macro→micro), each quadrant has its own distinct dynamics, potential, and opportunities for future research, as we detail below.

Across these quadrants, sustainability interventions can influence diverse marketing decisions including product assortment and sourcing choices, pricing and promotional strategies, packaging and waste management practices, communication and labeling approaches,

Table 2: The First Stage: Source–Target Matrix with Actors & Examples by Quadrant

Quadrant I: Micro → Micro			Quadrant II: Macro → Micro		
Target	Source	Real-life Examples & Cases	Target	Source	Real-life Examples & Cases
Consumer	Consumer	- Social proof & peer-to-peer effects: consumers may influence family members (Lissillour et al., 2025), or peers to make green purchases (Lee, 2008) - Social media influence (e.g., “thrift haul” videos, Maguire 2022).	Consumer	Retailer, Macro-actor Partnership	- Retailers promoting recycling (e.g., H&M Group 2012), reusable packaging (Take-Back Incentives , Lush 2025 ; Bring It Back Fund, Starbucks 2022). - IKEA introduced the “Energy Insights” feature within its smart home app (monitoring, social comparisons, personalized tips)
Consumer	Consumer	- Social-norm messages drive sustainable behavior (e.g., Sparkman and Walton 2017)	Consumer	Federal and / or State government	- Tax credits for plug-in hybrids (e.g. Colorado and Oregon) - HOV incentive for hybrids (e.g. California, Utah)
Consumer	Consumer	- Rooftop solar adoption: Community organizers with solar panels on their own homes recruited 63% more installations (Kraft-Todd et al. 2018).	Consumer	Utility companies/ municipalities	- Pacific Gas and Electric offers residential consumers rebates for EV charging stations
Consumer	Consumer	Peer-to-peer gift economy encouraging participants to reuse and repurpose, spreading sustainable consumption habits (e.g., BuyNothing Project , Danziger 2025)	Consumer	Manufacturer	- Kia cash rebates for Niro EV - Dodge 0% financing on green models
Consumer	Consumer	Neighbors gift and share items via local social media groups.	Consumer	Government	Carbon tax policies influencing consumption (e.g., Sweden , Finland)
Employee	Employee	Peer influence within organizational settings Community-to-Community	Consumer	Federal agencies	- Redesign of consumer labels by the EPA and the NHTSA
micro-enterprises	micro-enterprises	"micro-enterprise" retailers adopt a "no plastic bag" campaign (Carrigan et al. 2011).	Consumer	Macro actor Partnerships	Government-backed labeling programs - Personalized home energy reports by the partnership of Opower and U.S. utility companies (e.g., Allcott 2011). - Voluntary labeling program ENERGY STAR by the EPA & partners to identify energy-efficient products and buildings.
			Employee	Manufacturer, dealerships, associations	" The Chevrolet Experience ", a training program for sales personnel, targeting 7,000+ dealership employees
			Employee	Dealerships, dealer associations, non-profit organizations	- ElectrifiQ , a national online EV certification program for sales staff offered by the National Automobile Dealers Association and the Center for Sustainable Energy
			Employee	Brand / Manufacturer	Corporate sustainability training programs (e.g., Sult et al. 2024)
Quadrant III: Micro → Macro			Quadrant IV: Macro → Macro		
Target	Source	Real-life Examples & Cases	Target	Source	Real-life Examples & Cases
Retailer/ Platform	Consumer	Boycotts / Buycotts: -Analysis of 125 U.S. boycotts from 1978 to 2017, suggesting that boycotts had a negative effect on shareholder wealth (Tomlin 2019) -Boycott and buycott as a result of partisan consumer reactions triggered by the food brand Goya (Liaukonytė et al. 2023) - Carrotmob as collective buycott at local stores to reward eco-friendly improvements.	Partners / Suppliers	Retailers / Platforms	Introducing mandatory requirements, emission targets, or certifications: - do.MORE sustainability strategy by Zalando, making Higg Brand & Retail Module assessment mandatory for brands to sell on the platform (Zalando 2020). - Etsy’s net-zero targets and mandatory sustainability standards for its marketplace to achieve carbon-neutral delivery and increase the adoption of eco-friendly materials among sellers (Eco-Act 2025). - Booking.com’s Sustainability Handbook for its accommodation partners, setting environmental baselines

					and achieving recognized eco-certifications (Booking 2022). -Amazon's Climate Pledge Friendly program incentivizes sellers to meet sustainability standards or earn trusted certifications by boosting product visibility (Amazon 2020). - Uber Eats ' "Delivering a Greener Future" initiative, incentivizing restaurant partners to adopt sustainable packaging through subsidies, grants.
Retailer/ Platform	Customer	Customer Feedback Shaping Platform Features and Policies	Suppliers	Retailers	Walmart's Project Gigaton, pledging to cut/avoid one billion metric tons of emissions across their operations and supply chains by 2030 (Walmart 2025).
Retailer/ Platform	Consumer	Advocacy group (PIRG) delivered over 138,000 petition signatures urging Amazon to change packaging practices (Rosenblatt 2024)	Public companies	Institutional investors, Nonprofit Organizations, Coalitions	Shareholder demanding transparency: - The Climate Action 100+ initiative ensures that the world's largest corporate greenhouse gas emitters take action on climate change - Carbon Disclosure Project (CDP) asks top-level management of publicly traded companies to voluntarily disclose climate change-related risks and opportunities (Flammer et al. 2021).
Politicians / Parties / Governments	Consumer	Mass protests (e.g. the "Fridays for Future" Movement)	Manufacturers / Companies	Governments / Executive bodies	International carbon markets/trading systems: - EU Emissions Trading System , using "cap and trade" principle, ensuring emissions decrease over time in line with EU targets
Retailer	Consumer	Pledges/targets to meet consumer demand: -Walmart announced 100% recyclable, reusable, or compostable packaging for private-brand products (Walmart 2019). - Zomato setting "opt-in" defaults for cutlery, tissues, and straws.	Companies	State government	Regulatory frameworks/Legislation/bills: - New York Fashion Act , requiring companies to disclose supply chain impacts and achieve reductions in line with the Paris Agreement. - In 2023 the UK government banned "single-use plastics" in England
Platform	Consumer	Dedicated programs to Offering sustainable products or services - eBay launching its Certified Refurbished destination, introducing platform enhancements and compelling merchants to participate in the program.	Governments	Governments/ inter-governmental agencies	International treaties (e.g., Paris Agreement)
Platform	Consumer	Consumer pressure on Retailers: Amazon announced a commitment to reduce single-use plastic packaging and develop recyclable alternatives.	Companies	Platform	Microsoft's " Cloud for Sustainability " in response to regulatory pressure, co-developing features with major retailers.
Retailer/ Supplier / Platform	Employee	Internal employee-driven advocacy for sustainable practices: - Starbucks employees initiating donation program of unsold food to charity. - M&S employee suggestions to remove paper return slips from online parcels.	Retailer(s)	Retailer Collective / Alliance	Retail Sustainability Collective of competing retailers shares metrics and best practices to set industry benchmarks and push adoption of new standards.

distribution and logistics configurations, and customer engagement programs. The specific decision types vary by actor: retailers make merchandising and supply chain decisions, consumers

make purchase and disposal choices, platforms set participation standards and visibility algorithms, while regulators establish compliance requirements and incentive structures.

2.3. The second stage: Feasibility and impact of interventions

Our framework's first stage can help classify a large set of interventions while staying focused on who is persuading whom (i.e., source vs. target) and at what level (i.e., micro vs. macro). However, when deciding which interventions to implement, a decision-maker must consider an intervention's (1) feasibility and (2) impact. An intervention's *feasibility* refers to the ease of implementation, the target's resistance to behavioral change, political dynamics, and/or technical or legal barriers. Even if the target is receptive to change, the larger sociopolitical environment may prevent a successful implementation. An intervention's environmental impact—such as reduced GHG emissions—varies significantly across behavioral domains (waste, transportation, energy, food). While climate impact often focuses on emissions, environmental benefits also include reduced water use, eutrophication, biodiversity loss, and improved ecological footprint. Ideally the absolute environmental impacts associated with an intervention would be assessed from a full lifecycle perspective using established methods such as life cycle assessment (LCA) or related methods such as carbon footprinting or environmentally extended input-output analysis (EIO). However, resource constraints, data limitations, and practical considerations often make comprehensive lifecycle assessments unfeasible, leading practitioners to rely on simplified models or literature-based estimates. For example, Ivanova et al. (2020) summarize mitigation potentials across key consumption areas including food, housing, and transport.

To illustrate the importance of feasibility and impact in choosing suitable interventions, consider the example of a retail food outlet seeking to influence consumer behavior (macro → micro). Implementing a program to encourage the use of reusable coffee cups may be relatively

straightforward and quickly adopted by customers, yet its overall environmental impact remains modest (high feasibility, low impact). In contrast, efforts to significantly reduce beef consumption—a change with far greater potential to lower greenhouse gas emissions and environmental harm—face substantial barriers related to consumer preferences, cultural norms, and dietary habits, making such interventions considerably more difficult to implement effectively (low feasibility, high impact).

These two dimensions help to delineate the landscape of prior research on interventions within the sustainable consumer behavior literature. For example, Lembregts and Cadario (2024) found that high-impact behaviors (e.g., adoption of a plant-based diet) have been severely understudied. Instead, mostly low-impact behaviors (e.g., recycling or reducing packaging) have been prioritized, partly due to ease of implementation and inadequate understanding of impacts, limiting the contribution of marketing scholarship to climate-change mitigation.

Just as the first stage comprised a four-quadrant matrix, the second stage comprises a four-quadrant feasibility–impact matrix (Table 3), based on the degree to which a given intervention is feasible and impactful.

Interventions characterized by both high feasibility and high impact are the most desirable of course, as they provide immediate and significant gains. However, such interventions are rare. Nonetheless, the contributions of interventions in the other quadrants remain critical to advancing sustainability goals. Interventions with low feasibility but high impact can be made more attainable through the cultivation of strategic alliances and the reinforcement of supportive policy frameworks. Conversely, interventions with high feasibility but low impact hold considerable potential when scaled via technological innovation or facilitated by social norms. Although interventions typified by low feasibility and low impact are not primary mechanisms for achieving

Table 3: The Second Stage of Our Two-Stage Framework: Feasibility–Impact Matrix

Quadrant I: Micro → Micro			Quadrant II: Macro → Micro		
	Impact Low	Impact High		Impact Low	Impact High
Feasibility Low	- Community-to-community sustainability knowledge sharing - Peer-to-peer gift economy movements (e.g., Buy Nothing Project) - Peer-to-peer effects among family/ friends - Employee-to-employee influence in organizations	- Rooftop solar adoption through Community organizers	Feasibility Low	- Corporate sustainability training programs - Chevrolet sales staff program - ElectrifiQ EV certification program	- Carbon tax policies influencing consumption - Tax credits for plug-in hybrids - Rebates for EV chargers - H&M global clothes collecting initiative
Feasibility High	- Micro-enterprise “no plastic bag” campaigns - Social media trends influencing sustainable choices (e.g., thrift haul videos) - Neighbors gifting/ sharing items in local groups	- Social-norm messages drive sustainable behavior (e.g., Sparkman and Walton 2017)	Feasibility High	- Hybrid HOV lanes - Auto rebates/financing offers - Retailers promoting recycling or waste reduction: - Target’s “Target Zero” - IKEA “Energy Insights” - Starbucks “Bring It Back”	- Personalized home energy reports (Opower + utilities) - Government-backed environmental labeling programs (e.g., ENERGY STAR, Fuel Efficiency labels; EPA + partners)
Quadrant III: Micro → Macro			Quadrant IV: Macro → Macro		
	Impact Low	Impact High		Impact Low	Impact High
Feasibility Low	- Boycotting companies that do not replace all single-use plastics (with bioplastics made from corn or sugarcane)	- Mass protests (e.g., Fridays for Future) - Shifting purchasing toward sustainable product lines, such as the consumer-driven rise of plant-based milks	Feasibility Low	- Shareholder proposals & proxy voting - Sustainable investment portfolios (retail level)	- Mandatory sustainability standards & certifications - EU Emissions Trading System (EU ETS) - EU Deforestation-Free Regulation (EUDR) - Regulatory frameworks/bills (e.g., New York Fashion Act) - International treaties (Paris Agreement) - Climate Action 100+ Global investor coalition - Carbon Disclosure Project
Feasibility High	- Zomato opt-in defaults - eBay “Certified Refurbished” program - Walmart’s packaging pledge - Carrotmob campaigns - Advocacy group petitions (e.g., PIRG to Amazon) - Employee advocacy for sustainable practices - Boycotts / Buycotts		Feasibility High	- Uber Eats “Delivering a Greener Future” initiative - Etsy’s sustainability standards and net-zero commitments - Booking’s sustainability Handbook & certification	- Walmart’s Project Gigaton - Microsoft Cloud for Sustainability - Zalando’s do.MORE strategy - Amazon’s Climate Pledge Friendly program

sustainability goals, they may fulfill an important symbolic function by elevating public awareness and sustaining discourse on environmental issues. Ultimately, meaningful progress toward the SDGs may require a portfolio approach that combines highly feasible, high-impact interventions

with complementary strategies from other stage-2 quadrants. Our parsimonious two-stage framework enables the identification of critical gaps and strategies to scale up low-impact interventions or address barriers hindering high-impact ones.

The following sections employ the two-stage framework and discuss exemplary interventions in each quadrant.

3. Quadrant I: Micro→Micro Influence

Quadrant I of the source–target matrix covers the tendency of individuals to determine appropriate behavior for themselves by mimicking referent others’ behavior (Cialdini 1993). These peer-to-peer influences are known as “social influence”. For example, consumers may influence family members to purchase sustainable products (Essiz and Mandrik 2022; Lissillour et al. 2025), or teenagers can influence peers to make green purchases (Lee 2008).

Peer-to-peer effects can be amplified through social networks. For instance, TikTok and YouTube “thrift haul” videos—where creators showcase their second-hand fashion finds—have surged in popularity, amassing billions of views and helping to normalize buying pre-owned/second-hand clothing over purchasing new fast-fashion items (Maguire 2022).

With the rise of the “sharing economy” (Dellaert, 2019), small retailers (such as sellers on Etsy or Facebook Marketplace, or hosts on Airbnb) can also be considered micro actors, potentially influencing the sustainable behavior of other small retailers, as well as on their consumers and the communities around them. For example, "micro-enterprise" retailers in the town of Modbury were early adopters of a “no plastic bag” campaign, which quickly spread and soon “not one trader wanted to continue to use plastic bags” (Carrigan, Moraes, & Leek, 2011).

3.1. Social-norm effects

Social norms refer to self-enforced patterns of behavior or shared informal rules that align with individuals' beliefs about what others in reference groups do (descriptive norms) or think should be done (injunctive norms) (Constantino et al. 2022). In one example, informing online shoppers that “other people are buying sustainable products” resulted in a 65% increase in sustainable purchases (White et al. 2019). Merely learning that “More and more guests are choosing meat-free meals each day” doubled the share of customers ordering a vegetarian entrée, from 17% in control condition to 34% under a dynamic-norm message (Sparkman & Walton 2017). While peer-to-peer influence on traditional consumption is well-researched, peer-to-peer sustainability behaviors have been understudied, and differ on key dimensions: they often involve consuming less, are less visible, and require long-term commitment for cumulative benefit. These differences call for distinct consideration. For example, trust may be more important in the sustainability domain, given concerns about greenwashing (Fella & Bausa 2024).

3.2. Factors shaping social-norm effects

Social norms are powerful drivers of sustainable behavior contagion, but contextual factors shape the strength and direction of such social influence. For example, Abrahamse and Steg (2013) and Nguyen-Van et al. (2021) demonstrate that large networks with strong connections enhance the effectiveness. White and Simpson (2013) find that social norms are only effective when people think of themselves as part of a larger collective. Bollinger et al. (2022) show that the impact of social norms on sustainable behavior is stronger when the behaviors being imitated are more visible (i.e., higher visibility solar panels have a greater subsequent influence on neighbors' adoption of solar panels). Hogueve et al. (2021) find that the effect of social norms is stronger in consumers with a high tendency to engage in social comparison.

Which individuals or groups are most influential (the reference group) can vary across behaviors and contexts. Hofenk et al. (2019) show that consumers respond more positively to sustainability initiatives when messaged by credible sources, like scientists or third-party organizations, especially if paired with product-level sustainability labeling. Videras et al. (2012) find that different types of relationships (relatives, neighbors, coworkers) encourage different types of sustainable behaviors; for example, green families increase altruistic and community behaviors, while coworker ties increase cost-saving activities. Essiz and Mandrik (2022) and Lissillour et al. (2025) show significant transmission effects, wherein daughters educate and influence their mothers towards sustainable purchases.

Another well-studied mechanism of peer-to-peer influence is status. For instance, Griskevicius et al. (2010) find that status motivates increased desire for sustainable products when shopping in public and when sustainable products cost more. Therefore, consumers can increase the sustainability of their peers by “showing it off” as a status signal. Similarly, Brooks and Wilson (2015) show that when consumption-reducing behavior is a choice, perceived status is higher than when it is a necessity, but they also find consumption-reduction behaviors are less successful than consumption as signals of status.

However, several studies show that individuals discount prosocial or pro-environmental behaviors of actors who receive private benefits for those actions, such as monetary or reputational gains (Barclay & Willer 2007), because they perceive these actions to be empty gestures, which can reduce the potential for peer influence. The perception of “virtue signaling” can be reduced when the behavior is costly, for example when green products cost more or are of lower quality (Griskevicius, Tyber, & Van den Bergh 2010). Unsurprisingly, those advocating for a particular behavior or norm may be more effective when their own behaviors are aligned with what they are

advocating. For example, in a field study of rooftop solar adoption, community organizers who had installed solar panels on their own homes recruited 63% more solar installations than those who had not (Kraft-Todd et al. 2018).

3.3. Feasibility and impact Quadrant I (QI)

QI interventions are more social and behavioral in nature, so feasibility often depends on networks, participation and cultural resonance, while impact depends on whether they diffuse widely and whether consumers commit long-term to achieve societal benefits.

Behavioral nudges leveraging social norms and peer influence (bottom right quadrant) represent the “low-hanging fruit” of QI interventions: they are cheap, scalable, and deliver measurable effects. Structural initiatives such as rooftop solar (top right) are potentially transformative but require overcoming financial, infrastructure, and coordination barriers. By contrast, grassroots campaigns and local sharing economies are highly feasible, and while low in individual impact, can diffuse widely and act as cultural primers for larger shifts.

Finally, gift economies, initiatives like Buy Nothing Day, and peer-to-peer influence like “thrift haul” videos (top left) are more symbolic acts meant to raise awareness and prompt reflection on consumption habits and do not produce quantifiable reductions in emissions.

4. Quadrant II: Macro→Micro Influence

Macro sources, such as firms and governments, can impact micro targets, such as consumers, employees, or shareholders via policies and programs to promote the transition to sustainable production and consumption. The literature focuses on behavioral change measures implemented by government actors and agencies as sources, targeting consumers: monetary incentives (e.g., tax credits, rebates), non-monetary incentives (e.g., single-occupancy access to

high-occupancy vehicle lanes), and nudges (e.g., real-time feedback, social norms, label design). Less studied macro sources include industry associations and consumer associations. Existing research mainly investigates the impact on the consumer, particularly “green consumers” (e.g., Kilbourne & Beckmann 1998), focusing less on other micro-level actors such as employees and shareholders.

In addition to traditional advertising, retailers try to facilitate sustainable consumer behavior through recycling, take-back and reusable packaging initiatives. For example H&M was the first fashion company to roll out a global clothes-collecting initiative (H&M Group 2012), enabling customers to bring unwanted garments or textiles to H&M stores. In return, they receive a voucher to use toward their next purchase, actively incentivizing diversion of textiles from landfill and promoting a circular fashion system. Through its “Bring It Back” Fund in the United Kingdom, Starbucks, in collaboration with the environmental charity Hubbub, encouraged customers to adopt more sustainable habits by reducing reliance on single-use packaging and promoting reuse. Programs included offering a 25 pence discount for customers who bring their own reusable cup and implementing a 5 pence charge on single-use cups in the United Kingdom (Starbucks 2022). Other retailers have implemented initiatives targeting consumers’ electricity usage. For instance, IKEA has introduced the “Energy Insights” feature within its Swedish smart home app, enabling users to monitor real-time usage, compare it to similar households, and receive personalized energy efficiency tips.⁵

In the automotive retail sector, consumer barriers to electric-vehicle (EV) adoption critically shape the effectiveness of macro-level initiatives. These barriers include limited awareness and experience, price premiums for green alternatives, range anxiety, insufficient

⁵ <https://www.ikea.com/global/en/newsroom/innovation/launching-energy-insights-pilot-smart-energy-inspelning-240513/>

charging infrastructure, and restricted model availability. Here federal and state governments, as well as manufacturers, have sought to offset high upfront costs by offering monetary incentives such as tax credits, cash rebates, special financing offers, and reduced registration fees.^{6,7}

In addition, several initiatives have leveraged behavioral science to facilitate pro-environmental behaviors through enhanced consumer labeling and information campaigns. For example, the Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) redesigned the mandatory fuel-economy labels to display information about environmental impacts and fuel cost, which has been demonstrated to increase fuel-efficient car choices and narrow the attitude-behavior gap (Ungemach et al. 2018). Similarly, Opower—a software-as-a-service platform—partnered with U.S. utility companies to deliver personalized home-energy reports that use social comparisons to prompt households to reduce their energy consumption (Allcott 2011).

Combinations of macro actors have implemented measures to alleviate charging-network concerns: utility companies, municipalities, and federal agencies provide subsidies for home-charging equipment.⁸ Some states further complement these financial incentives with non-monetary benefits—for example, high-occupancy-vehicle (HOV) lane access—that enhance the convenience of owning a green alternative. Upstream supply-chain actors, including automobile manufacturers, dealerships, and dealer associations have also implemented training programs, certification schemes, and advertising campaigns aimed at sales personnel and consumers to improve EV knowledge and the purchase experience.^{9,10,11}

⁶ <https://afdc.energy.gov/laws>.

⁷ <https://www.edmunds.com/electric-car/tax-credits-rebates-incentives>.

⁸ <https://us.sunpower.com/solar-resources/ev-charger-rebates-incentives>.

⁹ <https://news.gm.com/home.detail.html/Pages/topic/us/en/2024/dec/1205-selling-evs.html>.

¹⁰ <https://www.electrifiq.org>.

¹¹ <https://pressroom.toyota.com/the-time-is-now-for-toyotas-all-new-2023-prius-and-prius-prime>.

4.1. Feasibility and impact Quadrant II (QII)

Interventions in QII span from widely adopted corporate and government programs to ambitious policies. Proven, scalable initiatives like ENERGY STAR labeling and Opower's personalized home energy reports have demonstrated both high feasibility and impact, shaping consumer decisions and industry practices for years.

Policies such as carbon taxes, plug-in hybrid tax credits, or large-scale rebate programs for EV infrastructure offer great potential impact but face substantial barriers—political resistance and the need for supportive frameworks. Programs like H&M's global clothes collecting initiative are similarly promising but limited by infrastructure and participation challenges, requiring long-term investment and innovation in textile recycling to succeed.

Other corporate-led efforts, such as Starbucks' Bring It Back Fund or Target's Target Zero campaign, are easy to implement yet tend to deliver incremental rather than systemic change. Likewise, measures like hybrid vehicle HOV lane access or targeted financing incentives, while highly feasible and symbolically important, are unlikely to produce large-scale transformation. Nonetheless, when bundled or scaled, these incremental interventions may contribute to broader sustainability goals.

5. Quadrant III: Micro→Macro Influence

In our framework consumers and employees are micro because although they can act together to become group actors, they often operate as individuals and have individual motivations even if at times these motivations align. However, using their purchasing power, protest rights, and even work product, consumers and employees can be catalysts for sustainability-oriented

change in the retailing space. Therefore, it's important to analyze how consumers as micro actors can influence macro actors like big box retailers (Lavorata 2014). This micro→macro pathway is a key part of the sustainable-consumption research agenda.

5.1. Consumer Activism and Public Pressure

Consumers are an important but understudied actor in the micro→macro context. While marketing scholarship and retailing has at its core understanding consumer preferences as they relate to products, retailing scholarship has devoted less attention to how consumers can substantially affect the companies they patronize.

Some companies have picked up on changes in consumer demand as part of their market research efforts and started to position themselves accordingly by announcing various sustainability initiatives, integrating eco-friendly practices throughout their operations, and setting ambitious sustainability targets. For example, eBay launched its Certified Refurbished destination, after research showed that 80% of Americans were open to receiving a refurbished electronic gift this season. The platform provided a dedicated storefront, standardized grading, new warranties, and inventory directly vetted from manufacturers, compelling merchants to participate in the program and offer refurbished options (eBay 2020). Zomato, an online food ordering and delivery service, surveyed thousands of its users and changed its app's default setting from "opt-out" to "opt-in" for cutlery, tissues, and straws, reducing single-use plastic waste (Goyal 2021). However, it can be challenging to discern if a macro actor's sustainability initiative is a genuine response to consumer activism or a green marketing tactic designed to gain a competitive advantage and attract environmentally conscious customers. Some measures may constitute "greenwashing," where eco-friendliness is more about image management than actual environmental impact (Peattie & Crane 2005).

Consumer activism is sometimes coordinated by macro-level actors such as consumer advocacy and nonprofit organizations, providing platforms that centralize actions like petition drives or letter-writing campaigns to CEOs. For instance, in June 2023, an advocacy group (PIRG) delivered over 138,000 petition signatures urging Amazon to cut plastic waste. In response, Amazon announced commitments to reduce single-use plastic packaging and developing more recyclable alternatives, demonstrating how customer pressure can drive a major retail platform to adopt more sustainable packaging practices (Rosenblatt 2024).

5.2. *Boycotts & Buycotts*

Consumers can collectively or individually abstain from purchasing goods from a company to protest its excessive environmental footprint. Most research in this space has focused on the motivations spurring boycotts and under what conditions boycotts can garner sufficient consumer support (Endres & Panagopoulos 2017; Klein et al. 2004; Sen et al. 2001). Results show that participation depends on perceived boycott success, how many others will participate, individual costs, and the relevance to participants' social identity, among other factors.

Efforts have been made to measure whether consumer boycotts can actually affect how companies operate their business. Some research demonstrates that boycotts can have a financial impact on companies by lowering cumulative returns for shareholders (Tomlin 2019). Other studies show that boycotts organized through the internet likely do not have financial effects on their corporate targets (Koku 2012).

Alternately, consumers can engage in active *buying* of products to reward companies for pro-sustainable actions. These so-called “buycotts” are understudied in the literature (Friedman 1996; Hoffmann & Hutter 2012) and present a ripe area of investigation.

More recently, “carrotmobs¹²” evolved as a new subtype of buycotts (Hoffmann & Hutter 2012). A carrotmob is a collective buycott in which consumers gather at a chosen store at a set time to purchase its products and reward the company in exchange for agreed-upon eco-friendly improvements, such as investing extra revenue in energy-saving upgrades. This may benefit the target company more directly. Scaling up carrotmobs is much more difficult though¹³.

Data on the relative magnitude of boycotts versus buycotts is scarce. Liaukonytė, Tuchman, and Zhu (2023) analyzed consumer-level purchase data for Goya products to assess the net effect of concurrent boycott and counter-buycott as part of political movements. Although social and news media coverage was dominated by boycott posts, sales rose by 22%.

5.3. Protests

Whereas consumers can use their market power to persuade companies and retailers, government policies are not necessarily susceptible to economic persuasion. Instead, citizens engage in widespread environmental protests to try to change a government’s policy at the macro level. Determining the effectiveness of protests on macro targets’ change and environmental impact is difficult (Buhl et al. 2016; Yuriev 2022). Some scholars have studied the effect of protests on the general sentiment of pro-sustainable behavior. For example, Kountouris and Williams (2023) found that protesting has positive spillovers that make community members less likely to oppose pro-environmental policies at large. Other scholars have found evidence of tangible effects of environmental protests on policy decisions and state changes in CO₂ (i.e., structural breaks) in some locations (Adedoyin 2020). However, the emergence of extreme climate protest actions (e.g.,

¹² The term combines “carrot,” symbolizing positive incentives over punishment, with “mob,” reflecting the coordinated, time-bound action.

¹³ <https://carrotmob.org/about>

gluing oneself to streets, defacing artworks) has raised concerns about protests backfiring, potentially undermining support for environmental movements (e.g., Feinberg et al. 2020).

5.4. Employee-driven interventions

Company employees and other stakeholders can have an impact on environmental innovation and drive macro change (Buhl et al. 2016; Yuriev et al. 2022). Extant studies document three routes to employee eco-innovation: first order, where employees themselves create innovations driven by their own daily tasks; second order, where management seeks to organize first-order innovation; and third order, where management explicitly invites employees to engage in innovation processes (Buhl et al. 2016). Employees with consumer experience, tacit knowledge, and a green identity are key constituents to lead eco-innovation from within a company. In addition, employees can act as enforcers of sustainability in retail environments. For example, Starbucks employees raised concerns about food waste, which led the company to announce a new program to donate unsold food to charity.

5.5. Feasibility and impact Quadrant III (QIII)

Most interventions in QIII are easy to implement but their environmental impacts are modest (high-feasibility/low-impact). For example, sustainability pledges play an important symbolic role by signaling responsiveness to consumer demand, but absent robust monitoring, they often underperform. While Zomato's cutlery opt-in default has significantly reduced plastic waste—preventing thousands of metric tons from entering landfills—this remains a relatively low-impact domain, and broader change will be necessary. Similarly, employee-driven activism can spark important culture shifts internally, yet it rarely produces immediate systemic impact unless connected to executive decision-making. Employee-driven advocacy typically scores high on feasibility but varies in impact (Yuriev et al. 2022). Initiatives such as sustainability training, green

teams, and grassroots “bottom-up” suggestions are low-cost and require minimal structural change. While such efforts can strengthen a company’s sustainability culture, enhance brand reputation, and occasionally influence operational practices, their overall impact tends to remain incremental.

Large-scale collective actions, such as Fridays for Future, have the potential to induce high impact change by pressuring corporations and governments, shifting agendas, and influencing global policy (e.g. Eckersley, Haupt & Kern 2025). However, their feasibility is tied to the ability to mobilize millions, place climate action high on the political agenda, and create lasting engagement in climate advocacy.

6. Quadrant IV: Macro→Macro Influence

Macro actors include institutional investors, corporations, non-governmental organizations, government regulators, intergovernmental agencies, political stakeholders, consumer advocacy organizations, and rating agencies. In this quadrant we locate four main types of macro→macro interactions: private-to-private, private-to-public, public-to-private, and public-to-public.

6.1. Private-to-private

“Private” macro actors are businesses, platforms, corporations, suppliers, industry alliances, lobbying groups, and institutional investors. Firms work with other firms in their supply chains and innovation efforts, strive to meet and influence regulatory standards, and compete for customers. If sustainability considerations lead to compliance, cost savings, and/or a competitive advantage, corporate macro actors will come on board.

Corporations are now cognizant not only of their direct (Scope 1) and indirect emissions (Scope 2) but also their total supply-chain emissions (Scope 3, Blanco et al. 2016). In retail, the majority of emissions stem from product supply chains rather than from stores or distribution

centers. Some corporations are taking ownership of these environmental impacts, starting to improve the environmental performance and footprint of their entire supply chain (Caro et al. 2013). For example, Walmart launched Project Gigaton™, an initiative developed in collaboration with NGOs and other stakeholders, to engage suppliers with the goal of reducing or avoiding one billion metric tons of greenhouse gas emissions across its global value chain by 2030. Its conditions (reporting emissions, setting targets, sharing best practices) have compelled over 5,900 suppliers to reduce emissions across six critical areas: energy use, nature, waste, packaging, transportation, product use and design (Walmart 2025).

Platforms play a particularly powerful role in influencing companies' sustainable behavior by setting ecosystem standards. For example, Zalando's do.MORE strategy requires all partner brands to submit detailed supply chain and environmental data, with compliance determining platform eligibility. This puts direct pressure on thousands of fashion retailers (Zalando 2020). Similarly, Etsy partnered with EcoAct to set science-based near- and long-term net-zero targets including mandatory sustainability requirements for its marketplace: all sellers' shipping emissions are offset to achieve carbon-neutral delivery, and sellers must disclose materials and production methods used in their products. In practice, these requirements led many small, handmade retailers to switch to eco-friendly materials in order to remain eligible, and the share of sellers using sustainable materials climbed to 65 percent (EcoAct 2025). Under Amazon's "Climate Pledge Friendly" program, brands and third-party sellers on the platform must meet at least one of Amazon's Compact by Design standards or earn one of 19 trusted third-party certifications to display the "Climate Pledge Friendly" badge and receive priority in search results and filter options. This effectively nudges retailers to redesign products, optimize packaging, or obtain recognized eco-labels (Amazon 2020).

Microsoft Cloud for Sustainability helps organizations track and reduce environmental impact, especially carbon emissions. By consolidating data and applying AI-driven insights, it both lowers emissions through efficient cloud infrastructure and enables businesses to identify their own reduction opportunities.

Coalitions. Sometimes a group of firms in the same industry forms a coalition to address sustainability issues. A coalition can include competing firms and their supply-chain members. While coalitions can effectively organize a supply chain, some scholars have expressed concerns that coalitions and other sustainability practices have become a means for firms to manage backlash from scrutiny rather than create change (Kotzian 2024).

Institutional investors can influence publicly traded companies to reduce environmental footprints by demanding transparency. For example, each year the Carbon Disclosure Project (CDP), a nonprofit organization representing more than \$100 trillion in assets, asks top-level management of publicly traded companies to voluntarily disclose their climate change-related risks and opportunities (Flammer et al. 2021). Cohen, Kadach and Ormazabal (2023) demonstrate that firms with CDP-signatory investors are more likely to disclose to the CDP and subsequently reduce their carbon emissions. Similarly, investor coalitions like the Climate Action 100+ initiative¹⁴, uniting over 600 global investors, collectively engage with the world's largest corporate greenhouse gas emitters to ensure these companies commit to emissions reductions, governance frameworks, and financial disclosures aligned with the Paris Agreement.

6.2. Private-to-public

Researchers are increasingly focusing on lobbying and environmental regulations. Polluting firms oppose environmental regulation because of the expected decrease in profitability,

¹⁴ <https://www.climateaction100.org/about/>

with obvious negative implications for social welfare (Meng & Rode 2019). Best-in-class firms (in terms of environmental performance) favor environmental regulation because it can give them a competitive advantage. Although the expenditures of climate change-related lobbying are small at 4% of total lobbying (Brulle 2018), we can expect an increase as more climate change-related policies are introduced.

6.3. Public-to-private

Public-to-private interactions are the most explored area in business and environmental sustainability research. Work centers on assessing the collective environmental impacts of new laws, tax breaks, regulations, and other interventions that are applied or offered to private companies. For example, the European Union Emissions Trading System (EU ETS), launched in 2005, is the world's first and largest carbon market. It sets a cap on the total amount of greenhouse gases that can be emitted by covered sectors, with the cap decreasing annually in line with the EU's climate targets. Emission allowances are allocated through auctions and can be traded on the market. Companies are required to cover their total emissions for the year. Failure to comply results in substantial financial penalties (EC 2025).

At the state level, New York has proposed the Fashion Sustainability and Social Accountability Act (also known as the Fashion Act). If passed, the bill would require global apparel and footwear companies with an annual global revenue of \$100 million operating in New York to disclose social and environmental impacts within their supply chains and set and achieve climate reductions in line with the Paris Agreement. To pass such legislation, broad support is needed from a range of stakeholders, including industry leaders, union representatives, labor organizations, academic institutions, and advocacy groups, among others.

6.4. Public-to-public

Public-to-public relationships involve governments, intergovernmental agencies, or multi-actor coalitions putting pressure on other governments to engage in sustainable practices and often reshape entire markets and regulatory contexts. For example, a total of 195 parties signed the international treaty known as the Paris Agreement in 2015 to address climate change. Since then, scholars have studied the effects of this treaty on environmental outcomes. Liu et al. (2020) model the resulting effects on CO₂ emissions if the milestones of the Paris Agreement are met and perform sensitivity analyses if major countries such as the US were to unilaterally withdraw from the Agreement. Others have studied treaties more generally. For example, Brandi et al. (2019) report a positive relationship between domestic environmental legislation and both international environmental treaties and preferential trade agreements. A large gap remains in the literature concerning how enforcement of treaties affects actual environmental outcomes.

6.5. Feasibility and impact Quadrant IV (QIV)

Interventions in the high-feasibility/high-impact quadrant are mostly platform-driven, underscoring the cascading influence of supply chains. Large corporations (e.g., Walmart, Amazon, Zalando) function as sustainability gatekeepers by leveraging environmental requirements as platform participation criteria. In doing so, they extend sustainability mandates downstream and exert influence over vast supplier networks (Spicer & Hyatt 2017). The diffusion of standards on the macro level thus constitutes a particularly effective intervention.

In contrast to the major platforms in the broader retail market, initiatives such as Etsy's sustainability standards and net-zero commitments, Booking's Sustainability Handbook and certification, or Uber Eats' *Delivering a Greener Future* campaign exhibit similar feasibility but relatively low impact. Their limited scope (e.g., specific delivery models or sectors) and smaller

market size constrain their overall influence. Accordingly, these interventions fall within the high-feasibility/low-impact quadrant.

Policy and regulatory tools (EU ETS, Paris Agreement, regulations on supply chains or products) represent the most effective long-term interventions, given their capacity to transform markets at scale. For example, the EU ETS has reduced greenhouse gas emissions from the power and industrial sectors by 47% between 2005 and 2023 (EC 2025). However, these tools typically face low feasibility, as they require strong governance structures and political consensus, and enforcement mechanisms to overcome resistance and implementation challenges.

Finally, initiatives such as the CDP and Climate Action 100+ have been effective in enhancing corporate climate transparency and ambition, but their capacity to drive immediate emission reductions is limited (e.g., Hastreiter 2024). They suffer from voluntary participation, weak enforcement mechanisms, and dependence on continued investor coordination. They can nudge corporate behavior but rarely create systemic change on their own.

7. Spillovers and carryovers

We have demonstrated how a variety of sustainability interventions may target specific stakeholders or actors within retail value chains, including individual consumers, employees, suppliers, and retail organizations themselves. These interventions aim to change “targeted” behaviors, but they may also affect “non-targeted” behaviors throughout the retail system.¹⁵ For example, retailer policies encouraging customers to bring their own shopping bags (targeted behavior) can lead to increased purchases of environmentally friendly organic foods (non-targeted

¹⁵ We note that the literature also uses the terms “intended and unintended consequences” to loosely refer to targeted and non-targeted behaviors, but it seems to make an unnecessary assumption about what policymakers intended. Perhaps these terms imply that spillovers may arise but do not necessarily detract from the benefits of a policy.

behavior), creating positive spillovers that extend the environmental benefits beyond the original waste reduction objective (Karmarkar & Bollinger 2015).

Given the large-scale changes needed to mitigate and adapt to climate change, spillovers are helpful to facilitate much-needed shifts in lifestyle and consumption patterns (Nash & Whitmarch 2023; Truelove et al. 2014). But spillovers can also have negative environmental implications (see Maki et al. 2019, for a meta-analysis). For example, a governmental ban on the free provision of grocery bags by retail stores can also lead to an unintended increase in the purchase of thicker plastic trash bags, as consumers need to line their trash bins that were previously lined with the free grocery bags (Huang & Woodward 2022). Moreover, the resulting spillover demand for trash bags especially benefits retailer brands (Puranam et al. 2025).

Furthermore, sustainability interventions such as government policies may be rolled back, but their effects may persist even after the incentives (or disincentives) are removed, a phenomenon referred to as “carryover.” This can apply to both the initial targeted behavior and spillover behavior. These carryover effects are particularly important when considering policy design and evaluation, as demonstrated by research showing persistent impacts on trash bag purchases even after plastic bag policy repeals (Puranam et al. 2025). Because spillovers and carryovers can amplify or dilute the positive effects of a sustainability intervention, they are important to consider when developing intervention strategies for consumption and production.

The contributions of spillovers and carryovers are important considerations for each of the quadrants, as they can influence the direction of impact in the second stage of the framework. These effects may also operate across multiple quadrants. For example, when government incentives for electric vehicles influence consumer adoption (macro→micro), this can create market signals that affect industry production decisions (macro→macro).

Significant additional research is needed to better understand the non-targeted effects of the initial interventions. Effective intervention strategies should consider pilot tests to evaluate spillovers pre-implementation, incorporating spillover tracking into monitoring, and planning for carryover during the repeal of an intervention.

8. General Discussion

A large body of work in marketing and related disciplines, including economics and industrial ecology, has explored efforts by governments, businesses, advocacy groups, and others to contribute to environmental consumption and production cycles. In addition, multiple interventions aimed at “nudging” individual consumers to make more environmental decisions have been tried, analyzed, and promoted. Given the critical need for change to occur more rapidly, all these efforts need to be streamlined and focused. The framework put forth in this paper aims to guide researchers and stakeholders how to have the greatest impact on achieving sustainable patterns of consumption and production.

In the first stage of our two-stage framework, the source–target matrix, we distinguish between micro and macro actors that may utilize different types of interventions to influence each other from a retail perspective. This distinction allowed us to map the interventions from the literature across a 2x2 matrix. The matrix highlights a strong emphasis in the literature on macro→micro interventions, particularly those targeting consumers, whereas research on micro actors like employees or small business owners remains scarce. By contrast, fewer interventions are documented in the other quadrants. One possible explanation is that macro→micro interventions are easier to study and operationalize (Lembregts & Cadario 2024). However, it is important to recognize that the majority of emissions are generated by macro-level actors.

We applied the second stage of our framework, the feasibility–impact matrix, to map the introduced interventions along the dimensions of *feasibility* and the *impact* of measurable environmental improvements in production and consumption. Examining the interventions through this lens shows a lack of high feasibility/high impact interventions across the four quadrants. This is in line with previous research warning that marketing scholarship is often limited to low-impact areas (Lembregts & Cadario 2024). It can also be seen that interventions by macro sources often provide higher impact than those by micro sources. While research related to high feasibility and high impact should be prioritized, more research is also needed to understand how to better utilize interventions with low feasibility but high potential impact and scale up highly feasible interventions with small impact.

8.1. Limitations of this framework

While the social and economic dimensions of sustainability are equally important, our analysis deliberately focuses on environmental sustainability through the lens of SDG 12, which is most closely aligned with the retail sector. This facilitates analytical clarity and provides more actionable insights. Fully addressing the interconnections between environmental and social responsibility—especially for broader SDGs—remains a critical area for future research (Holtrop et al. 2025). Our stakeholder perspective—incorporating employees, labor unions, and traditional actors—highlights important themes to investigate these links.

As acknowledged in the introduction of the framework, there is substantial heterogeneity in the roles and motivations of actors both within and across quadrants. Despite this diversity, we demonstrate that examining these interactions through a micro–macro retailing lens remains highly valuable. This perspective allows the framework to reveal how the effectiveness of sustainability interventions depends on the specific focal relationships among stakeholders. Future research

applying this framework should account for such heterogeneity by broadening the range of considered outcomes and interventions and by conducting more granular, context-sensitive analyses.

Our first stage of the proposed framework focuses on the dyadic relationships between micro and macro actors, but more complex and multi-directional chains (e.g., micro→macro→macro) can be unpacked into their basic dyadic components. Building on this work, future applications of this framework can map out the cumulative effects of higher-order chains to identify paths that are highly feasible or manage to transmit high impact across its entirety.

A further limitation lies in the current reliance on ordinal distinctions between high and low feasibility and impact. While more continuous measures are not widely available, greater transparency in emissions targets and reporting may enable such refinement in the future.

8.2. Future research directions

Our framework identifies key gaps in the existing literature and outlines pathways to strengthen retailing's contribution to environmental sustainability. Several high priority cross-cutting insights emerge across all quadrants. First, there is a clear need for more research in high-impact domains —such as transportation, meat consumption, and fashion—that are critical to achieving sustainability goals. In particular, our framework reveals a notable shortage of interventions in the Micro→Macro quadrant that are both highly feasible and highly impactful. Future research may investigate whether there are interventions to fill this gap. Second, since the existing literature has largely focused on North America, Western Europe, and Australia, expanding to multicultural and geographically diverse contexts is essential for identifying boundary conditions and developing interventions with broader—potentially global—relevance.

Interventions like carbon labeling, information disclosure and carbon markets have the potential to transcend national boundaries if embedded internationally, as evidenced by initiatives like the European emission standards (Crippa et al. 2016). Third, to accurately assess environmental impacts, more field studies and natural experiments are required, particularly those involving macro-level actors in high-impact domains, to estimate both short- and long-term effects as well as potential interactions in real-world contexts. Critically, more work is also needed to better define feasibility indicators, including the ability to influence consumer opinions and retail policy. Finally, future research should explore more complex multi-actor and multi-stage processes by deconstructing them into dyadic links based on our framework. This approach can help identify high-leverage intervention pathways and offer deeper insights into the dynamics of these processes, including potential spillover and carryover effects that may amplify overall impact.

Key questions for QI. A key challenge for micro→micro interventions is quantifying their impact, which would allow identification of the most effective approaches for fostering sustainable behavior. Beyond scalability, future work should examine how consumers can amplify the positive contagion of pro-environmental actions and under which conditions peer influence may backfire, generating reactance instead of compliance. While current research has largely centered on consumers, expanding the scope to other micro actors, such as micro enterprises, could provide valuable insights.

Key questions for QII. Future studies should consider investigating the barriers for low feasibility/high impact interventions, such as investments in public charging infrastructure, carbon taxes, and rebates for electric vehicle adoption. Also needed is work on the potential impact of other macro-level actors, such as consumer associations, NGOs, and advocacy groups, which have so far been overlooked in this space.

Key future research questions for QIII. Future research should seek more high impact interventions in this quadrant. With mass protests providing the most promising high impact measure, additional work should investigate how their feasibility can be increased. How can consumers (or other micro actors) most effectively engage governments and spark political change on sustainability business issues? This topic, critical for system change, sits at the intersection of marketing and political science and is likely to have high impact as governments help set policy agendas. Marketing scholarship is best poised to make a contribution here by answering questions like *What is the effect of consumer/corporate collaborations to influence political actors to make environmental changes?*

Key future research questions for QIV. The Macro→Macro quadrant remains a very important yet largely understudied area in marketing scholarship, providing a large number of high impact interventions of low and high feasibility. Significant potential lies in exploring how collaborations between large macro actors (private or public) can drive emissions reductions and foster more sustainable behaviors. For example, future work should seek to understand how corporate partnerships can be designed to promote all parties (e.g., seller and supplier), holding each other accountable for sustainable practices. In addition, while some research has focused on the effect of governments on corporations, there isn't enough empirical research on how corporations can effectively respond to green legislation. Lastly, while multi-national treaties exist, little research has sought to discuss the procedures by which these treaties could be improved upon and replicated.

9. Conclusion

This research advances a two-stage framework that provides a structured lens for mapping and synthesizing interventions aimed at achieving more sustainable outcomes in retailing. By

adopting a full stakeholder perspective and evaluating interventions in terms of both feasibility and environmental impact, the framework identifies dominant foci in the existing literature as well as critical gaps that offer promising avenues for future inquiry. For example, we find that most research concentrates on the Macro→Micro quadrant, with consumers as the primary micro actor studied, whereas interventions involving macro actors often carry greater potential for systemic impact. The framework contributes to future scholarship by (1) characterizing the interactions among retail actors and (2) evaluating the feasibility and impact of prospective interventions. Importantly, it underscores retailing's potential to play a pivotal role in advancing environmentally sustainable consumption and production.

Future research should focus on expanding the scope beyond consumers to other micro actors, broadening the geographical and cultural scope of studies, conducting more field studies and natural experiments that assess the real-world impact, particularly in high-impact domains such as transportation, food, and fashion. By systematically addressing these gaps, retailing scholarship can maximize its contribution to advancing environmental sustainability goals and ensure its continued relevance in tackling one of the most defining challenges of the 21st century.

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