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Operationalising Sufficiency in an Organisational Context: A Systematic Literature Review

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ABSTRACT

Efficiency-led sustainability is important but often fails to deliver absolute reductions in resource use, leaving organisations exposed to rebound effects. What remains underexplored is how sufficiency, the strategic limitation of consumption and resource use, is operationalised within organisational contexts. We address this gap through a systematic review of 70 peer-reviewed studies, using the Structure-Conduct-Performance (SCP) framework to connect enabling conditions, organisational practices and sustainability performance. We identify eight thematic clusters reflecting how sufficiency is enacted across domains such as governance and policy, organisational practices, social norms and infrastructural systems. Building on these, we develop a typology of five strategic types through which organisations operationalise sufficiency. This paper (1) adds a system-level perspective that bridges structural, strategic and performance domains; (2) extends the SCP framework as a theory-building lens to expose misalignments that hinder sufficiency transitions; and (3) highlights tensions that challenge dominant assumptions in sustainability-oriented organisational strategy.

1 | Introduction

The increasing urgency of sustainability challenges necessitates organisations to critically re-examine their growth strategies and business models (Bocken et al. 2021; Panigrahi et al. 2025). Traditional paradigms centred on continuous economic expansion and profit maximisation are criticised for driving ecological degradation and deepening social inequities (Jackson 2009). In response, the concept of sufficiency has increasingly gained attention as a deliberate strategy to limit and reduce consumption (Bocken et al. 2016; Bocken and Short 2016; Dyllick and Hockerts 2002; Esposito et al. 2012).

In this paper, sufficiency is defined as a deliberate strategic approach that seeks to operate within ecological and social boundaries by imposing limits on resource use, questioning the necessity of certain activities or growth ambitions, and reframing business success beyond continuous expansion (Bocken et al. 2016; Spangenberg and Lorek 2019). Unlike efficiency-oriented strategies that optimise inputs without necessarily reducing total throughput, sufficiency explicitly targets absolute reductions in resource and energy use (Garnett 2014; Mont and Palgan 2025) and imposes meaningful limits on growth ambitions so that activity remains within ecological and social thresholds (Gossen and Niessen 2024; Spash 2017; Princen 2003).

In contrast to broader sustainability discourses that emphasise sustainable consumption, efficiency or technological innovation (Lorek and Fuchs 2013), sufficiency directly questions the premise that 'doing more with less' is a solution in organisational settings (Esposito et al. 2012; Gough 2023). Sufficiency sets the structural boundary conditions that shape what organisations should prioritise and, crucially, what they should refrain from

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pursuing (Bain 1956; Bocken et al. 2016: Fu 2003). Empirical studies show that efficiency gains frequently trigger rebound effects, whereby increased consumption offsets environmental improvements (Demirel and Danisman 2019). In this regard, a sufficiency orientation reframes the strategic question from how to optimise existing practices to whether specific growth ambitions or resource-intensive activities are necessary at all (Jungell-Michelsson and Heikkurinen 2022; Spangenberg and Lorek 2019; Princen 2003). For organisations, this shifts performance assessment away from relative efficiency metrics toward absolute reductions in resource and energy use, aligned with the sufficiency principles.

By embedding sufficiency principles, organisations can pursue transformative changes that challenge dominant production–consumption logics and support long-term sustainability (Bocken et al. 2022; Niessen and Bocken 2021). Rather than relying on technological tweaks or isolated behavioural interventions, sufficiency requires a holistic view of how structural conditions and resource infrastructures interact with organisational conduct (strategies, routines) to shape performance (outcomes). In line with Spash (2017) and Princen (2003), advancing sufficiency therefore demands both systemic boundaries and deliberate organisational reconfiguration, aligning structures, conduct and performance rather than treating them in isolation.

While sufficiency has been examined at the level of individual lifestyles (Nikou et al. 2025) and consumer behaviour (Bocken et al. 2020; Chamaret et al. 2023; Girod et al. 2014; Gossen et al. 2023), and specific organisational aspects like profitability (Sarokin and Bocken 2024), literature that focuses on the organisational context remains limited. Where organisations are discussed, studies are often conceptual (e.g., business-model principles) (Bocken and Short 2016), or policy- or principle-focused debates (Princen 2003; Spash 2017) and do not systematically connect enabling structures (policy, infrastructure, norms) to the strategies and routines through which firms adopt sufficiency practices and their resultant outcomes. Studies use different units of analysis or definitions and sometimes yield conflicting narratives: e.g., optimisation and efficiency are promoted as solutions, although rebound effects undermine absolute reductions (Demirel and Danisman 2019; Lorek and Fuchs 2013; Garnett 2014).

It remains unclear which organisational strategies are most often employed, what structural conditions initiate them, and at what stages implementation typically faces obstacles. This is an important gap to consider, because without an organisation-centred synthesis that links structures, practices and outcomes, attempts to institutionalise sufficiency risk remaining fragmented and superficial. Moreover, because organisations shape production systems, market norms and policy agendas, overlooking their role limits the prospects for systemic sustainability transitions (Bocken et al. 2025). To address this gap, we ask:

How is sufficiency integrated across organisational structures, conduct, and performance and what strategic types define its implementation in practice?

To answer the RQ, we conducted a systematic literature review (SLR) (Ghobakhloo et al. 2021; Hoang et al. 2020) of 70 peer-reviewed studies. A systematic approach was essential to ensure comprehensive retrieval across disciplinary domains, transparent inclusion criteria and replicable analysis (Ed-Dafali et al. 2025). Given the heterogeneity of study designs and outcome measures, a quantitative meta-analysis was considered not appropriate, while a purely conceptual review would lack empirical grounding (Hoang et al. 2020).

Therefore, in this paper, we adopted a mixed strategy that combines deductive coding based on the theoretical lens of the Structure-Conduct-Product (SCP) framework with inductive thematic synthesis to capture both structured patterns and emergent insights. The SCP framework was deliberately chosen because it provides a multi-level analytical lens to link enabling structures (e.g., institutions, infrastructures, norms and regulations) with organisational conduct (strategies and routines) and performance outcomes (such as environmental or social impact). This systemic perspective makes SCP particularly suitable for examining sufficiency not as a siloed intervention but as a dynamic organisational strategy shaped by institutional constraints, strategic choices and performance contradictions.

We conceptually refine and extend the SCP framework to sufficiency by: (i) introducing a system-level perspective that shows how structural conditions shape organisational practices aimed at absolute, not just relative reductions, (ii) beyond this, the review inductively identifies eight thematic clusters and translates these into a typology of five strategic types, showing how sufficiency is framed and implemented in organisational contexts, how it efforts advance or impede; and (iii) highlighting recurring contradictions such as rebound effects and tensions with growth-oriented logics as manifestations of misalignment across the literature. For managers and policymakers, this paper offers practical insights and guidance on where to intervene and how to align internal strategies with enabling infrastructures and governance processes to embed sufficiency beyond efficiency-led approaches.

This paper is structured as follows: Section 2 presents the conceptual framework, introducing the SCP. Section 3 details the methodology, including the systematic review approach and thematic coding process. Section 4 provides a descriptive analysis of the reviewed studies. Section 5 summarises the core findings across three analytical layers: the SCP mapping, eight thematic clusters and a typology of sufficiency. Section 6 discusses the implications, and Section 7 presents contributions, limitations and future research.

2 | Conceptual Framework

Originally developed in industrial organisation economics (Bain 1956), SCP was designed to analyse how market structures influence firm behaviour and shape industry performance. Its three interlinked dimensions have since been adapted beyond economics and applied to sustainability contexts (Wood et al. 2021; Yuen et al. 2020), demonstrating its conceptual flexibility. Prior adaptations include analysis of stakeholder participation in sustainable business integration (Yuen et al. 2020), and the application of SCP to value chains to assess socio-environmental performance (De Figueirêdo Junior et al. 2014).

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These examples show SCP's conceptual flexibility and its relevance for multi-level analysis.

Existing sufficiency research draws on a wide range of conceptual lenses, from socio-technical transitions (Lage 2022) and behavioural economics (Spangenberg and Lorek 2019) to digital platform theory and market efficiency (Bourai et al. 2024; Panagiotou 2006). While valuable, these studies tend to address either micro-level motivations or macro-level policy instruments in isolation, making it difficult to assess how sufficiency is embedded and operationalised across interconnected system layers. In this paper, we extend the use of SCP to examine how sufficiency is embedded, activated or challenged across structure, conduct and performance domains. Our goal is not to optimise firm performance, an approach that would risk narrowing the principles of post-growth sufficiency, but to use SCP as a mapping tool that reveals systemic misalignments and enabling configurations. The framework helps show why some well-intentioned sufficiency initiatives are hindered in practice, while others generate lasting organisational change. Figure 1 outlines the core SCP dimensions as adapted in this paper.

We acknowledge that applying an economics-rooted framework to a post-growth topic requires critical care. Yet, we argue that appropriating SCP reflexively as a structural lens rather than a normative business model, enables us to reveal contradictions between sufficiency objectives and institutional realities. As Niessen et al. (2025) show, even explicitly post-growth organisations often struggle to realise their transformative ambitions due to systemic constraints embedded in market logic and pressures, and socio-economic expectations. Their findings underline the importance of structural analysis in sufficiency research, supporting our use of SCP to investigate not only organisational strategies but the institutional conditions that enable or hinder them.

3 | Methodology

We follow the structured approach to management and organisational reviews outlined by Tranfield et al. (2003), complemented by sustainability transitions guidance from Post et al. (2020). As outlined in these sources, this approach supports a transparent and replicable process for identifying, screening and analysing relevant literature. A SLR was chosen (Ed-Dafali et al. 2025; Ghobakhloo et al. 2021; Hoang et al. 2020), because sufficiency remains a conceptually fragmented and methodologically under-integrated field (Aagaard and Christensen 2024; Bocken et al. 2022; Hayden 2019; Niessen and Bocken 2021), with contributions across disciplines such as economics (Bocken and Short 2016), design (Nikou et al. 2025), policy (Bocken and Short 2020), and organisational strategy (Persson and Klintman 2022). This disciplinary fragmentation limits the effectiveness of narrative or integrative reviews, which often lack the analytical consistency required to synthesise across system levels.

In contrast, the SLR approach enables structured coding, explicit inclusion criteria and cross-study comparisons, making it especially appropriate for assessing how sufficiency is framed and operationalised in organisational contexts. This logic is consistent with the recent work of Di Vaio et al. (2025, 2024), who combined deductive coding with thematic synthesis to examine institutional, organisational and stakeholder dynamics. Like their study, our approach seeks not only to map literature but also to generate theory-driven insights, identify conceptual patterns (Paul et al. 2021), uncover theoretical gaps, and inform future research and policy development.

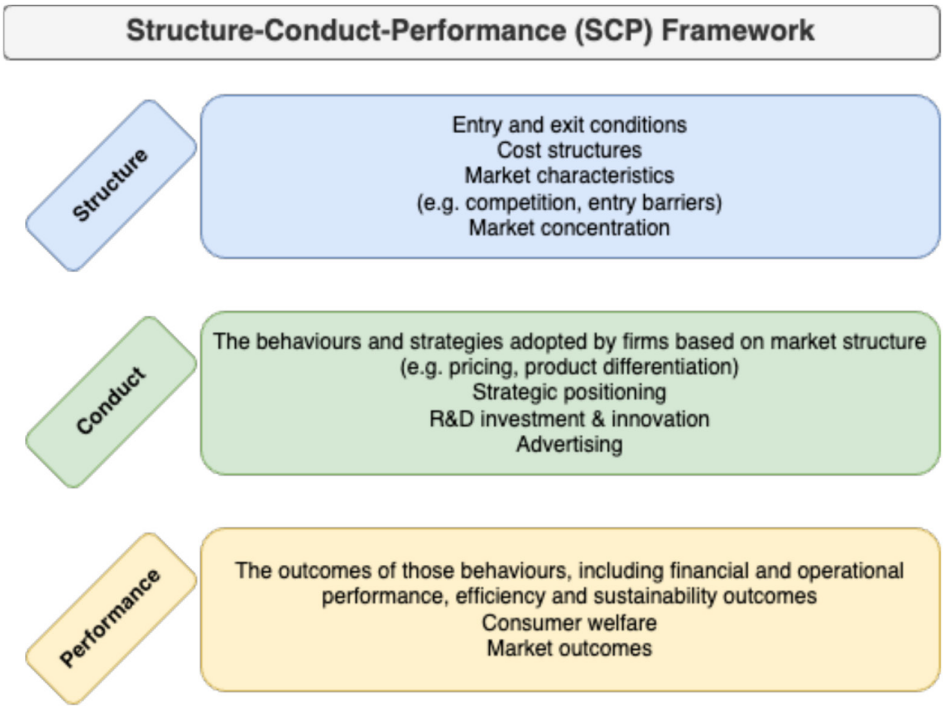

FIGURE 1 | Structure-Conduct-Performance (SCP) framework.

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We also diverge methodologically from prior uses of SCP (Yuen et al. 2020), which typically deploy the model within single case studies or industry analyses. Here, SCP is used as a deductive coding framework in a SLR, helping to locate sufficiency strategies across the three interdependent domains. This is complemented by inductive thematic synthesis, which allowed us to detect thematic clustering and a typology of sufficiency not visible through deductive categorisation alone. In this way, SCP serves as both a categorisation lens and a generative framework, not only classifying existing literature but also supporting theory-building on how sufficiency can be implemented as an organisational sustainability strategy.

3.1 | Identification of Search Terms

Studies were included if they met the following criteria: (i) published in English; (ii) peer-reviewed journal articles, conference papers or book chapters; (iii) published between 2000 and 2025; and (iv) explicitly addressed sufficiency or closely related strategic, organisational or policy-level applications of sufficiency. We excluded studies focusing only on individual consumer behaviour without organisational or systemic context or using sufficiency as a secondary consideration to circular economy, energy efficiency or broad sustainability discussions without a sufficiency framing.

The starting year 2000 was selected to capture the period during which sustainability began to emerge more distinctly in organisational and sustainability literature, reflecting shifts from purely efficiency-driven approaches to broader considerations of limits, rebound effects and degrowth-informed strategies (Jackson 2009; Bocken et al. 2016).

3.2 | Search Strategy and Database Selection

The search was conducted across two major multidisciplinary academic databases: Web of Science (WoS) and Scopus. WoS was selected for its rigorous indexing of high-impact, peer-reviewed contributions in fields such as social sciences, management and environmental studies (Mongeon and Paul-Hus 2016). Next, Scopus was searched to expand the coverage and capture relevant studies that may not be indexed in WoS, particularly from emerging or interdisciplinary journals. As these two platforms are the most acknowledged bibliographic databases (Aria and Cuccurullo 2017), using them helped mitigate selection bias, increasing the comprehensiveness of systematic reviews (Gusenbauer and Haddaway 2020; Newaz and Appolloni 2024). The same search string was used in both databases to maintain consistency, in March 2025 using an extensive combination of sufficiency-related terms and organisational, market structure or strategic keywords, linked with Boolean operators to ensure precision. The final string was:

TS = ((‘Sufficiency Orient*’ OR ‘Sufficiency Mindset’ OR ‘Organisatio* Sufficiency’ OR ‘Sufficiency Economy’ OR ‘Sufficiency Philosophy’ OR ‘Sufficiency-Based Approach’ OR ‘Sufficiency Theory’ OR ‘Sufficiency Well-being’ OR ‘Sufficiency Sustainability’ OR ‘Organisatio* Sustainability’ OR ‘Sufficiency Economic Development’ OR ‘Sufficiency Consumer Behavi*’ OR ‘Sufficiency Transition’ OR ‘Sufficiency Practi*’ OR ‘Sufficiency Approach’ OR ‘Sufficiency Driven’ OR ‘Sufficiency Strate*’ OR ‘Sufficiency-Oriented Practi*’ OR ‘Sufficiency-Oriented Consumption Practi*’ OR ‘Sufficiency-Oriented Consumption Behave*’ OR ‘Sufficiency Lifestyle*’ OR ‘Sufficiency Consumer Practice*’ OR ‘Sufficiency-Promoting Marketing’ OR ‘Sufficiency-Supporting Polic*’ OR ‘Sufficiency-Related Value Creation Process*’ OR ‘Sufficiency-Related Promotion’ OR ‘Sufficiency-Based Circular Economy’ OR ‘Sufficiency-Oriented Marketing and Consumption’ OR ‘Sufficiency-Promoting Marketing Strateg*’ OR ‘Sufficiency-Promoting Activit*’ OR ‘Sufficiency-Oriented Offerin*’) AND (‘market structure’ OR ‘industry concentration’ OR ‘entry barriers’ OR ‘firm behavior’ OR ‘business strategy’ OR ‘competitive behavior’ OR ‘organizational performance’ OR ‘market outcomes’ OR ‘profitability’)) AND PY = (2000–2025) AND LA = (English).

3.3 | Screening Process and Full-Text Review

The initial searches returned 517 records in total: 445 journal articles, 56 conference papers, 11 books and 5 book chapters. After removing duplicates and excluding grey literature records, the dataset was refined to 504 unique publications. Next, a multi-stage screening process was conducted to ensure alignment with the research objectives. In the first stage, titles, abstracts and keywords were screened, resulting in the exclusion of 296 records for not referencing sufficiency beyond general sustainability discussions.

In the second stage, full-text review assessed the in-depth exploration of sufficiency, leading to the exclusion of another 138 records that did not address sufficiency in organisational, strategic, or systemic contexts or focused exclusively on individual consumer lifestyles without broader organisational implications. Studies focused entirely on circular economy, energy efficiency or general climate mitigation were also excluded if they did not explore sufficiency. This process yielded a final sample of 70 studies for in-depth analysis. The literature screening and selection procedure is summarised in Figure 2, via a PRISMA flowchart structure (Moher et al. 2009).

3.4 | Data Analysis and Thematic Synthesis

The analysis began with a theory-informed deductive coding phase, using the SCP framework as the primary lens to classify each article based on how it addressed structural conditions (e.g., infrastructure systems, socio-cultural norms), organisational conduct (e.g., strategies, governance practices, behavioural interventions) and sustainability performance (e.g., resource use reductions, well-being outcomes).

Each article was coded along one or more of the SCP dimensions, forming the basis for a structured map of how sufficiency is embedded across system levels. In cases where studies discussed broader governance regimes, or spatial infrastructures, they were examined through organisational implications, maintaining our focus on organisational practice and transformation. This SCP-based coding established both the unit of analysis and a consistent analytical structure across a fragmented body of literature (Hayden 2019; Niessen and Bocken 2021).

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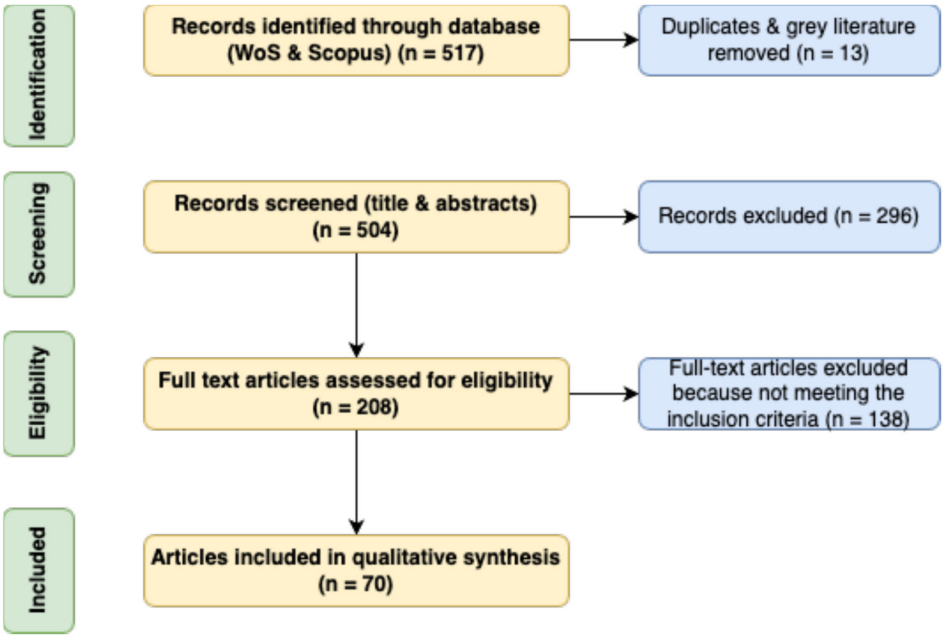

FIGURE 2 | PRISMA flow diagram of the literature identification, screening and inclusion process.

The resulting SCP-coded map was then used to guide the synthesis process. We combined the deductive structure with inductive insight generation by identifying where sufficiency strategies are embedded, activated or challenged across system levels. This systematic mapping enabled us to explore how organisational practices relate to structural conditions, organisational conduct and sustainability outcomes. Building on this, we applied an inductive thematic synthesis across all coded material using principles of content analysis (Elo and Kyngäs 2008) and thematic synthesis (Thomas and Harden 2008) to detect recurring patterns, systemic tensions and conceptual innovations within and across the SCP categories.

Rather than treating SCP as a static classification tool, we used it as a framework for theoretical development, connecting enabling conditions and barriers with organisational responses and sustainability performance. This approach positioned the review not merely as a literature summary but as a process of theory-building through integrative sense-making (Kunisch et al. 2023). Through iterative comparison and aggregation, these codes were clustered into eight cross-cutting thematic groups that span the three SCP dimensions. These clusters highlight how sufficiency is embedded not only within individual organisational practices but also in their interaction with broader structures and performance outcomes. In this way, the SCP framework served as both a categorisation lens and a generative logic, enabling us to identify patterns of sufficiency integration and misalignment that may be obscured in conventional reviews.

In the final layer of analysis, the eight thematic clusters were translated into a typology of five strategic types that represent recurring pathways through which organisations operationalise sufficiency. The typology reflects patterned combinations of structural enablers, organisational responses and outcome orientations that emerged across the SCP dimensions.

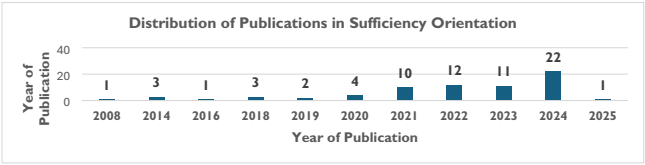

FIGURE 3 | Number of publications per year.

Importantly, this step moves from thematic description toward conceptual abstraction, highlighting how sufficiency transitions are shaped by the alignment or misalignment of systemic conditions and organisational strategies. Rather than treating SCP as a fixed descriptive framework, we use it here as a dynamic lens that enables theoretical integration across empirical findings. The typology offers an interpretive synthesis of how sufficiency is framed, enacted and sustained within organisations.

4 | Descriptive Analysis

Prior to 2021, publication numbers were relatively low, and from 2021 onwards, however, there was a steady increase, followed by a sharp rise between 2021 and 2023 (Figure 3). The peak in 2024 (22 publications) indicates a growing academic and industry interest in sufficiency research. This trend can be attributed to several factors, including: (i) increased regulatory emphasis on sustainability and sufficiency-driven policies such as right-to-repair regulations (Bocken et al. 2025); (ii) greater corporate adoption of sufficiency-based business strategies (Niessen and Bocken 2021); and (iii) growing interdisciplinary interest, as sufficiency gains attention across business, sustainability science and policy research. As of March 2025, the current number of publications remains relatively low. This is likely due to ongoing indexing processes in academic databases, with many recent studies still undergoing peer review and the publication process.

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4.1 | Content Analysis of Selected Articles

Beyond descriptive trends, a content analysis of the 70 selected studies was categorised into the three domains of the SCP framework: Structure (34 studies), addressing institutional, infrastructural and governance-level enablers of sufficiency; Conduct (25 studies), focusing on organisational practices, behaviours, cultural norms and strategic orientations; and Performance (11 studies), examining the empirical outcomes of sufficiency strategies, such as organisational transformation and policy impact (Figure 4).

5 | Results

This section presents the results of our three-stage synthesis to address the research question: 'How is sufficiency integrated across organisational structures, conduct, and performance (outcomes) and what strategic types define its implementation in practice?' We first map how sufficiency is embedded across the SCP dimensions, structure, conduct and performance (Sections 5.1–5.3), responding to the first part of the research question by tracing how sufficiency is integrated across enabling conditions, organisational practices and outcome framings. We then develop eight thematic clusters through inductive synthesis (Section 5.4), which deepen our understanding of the organisational conditions and systemic enablers or barriers shaping sufficiency strategies. Finally, we identify a typology of sufficiency (Section 5.5) based on the thematic clusters, addressing the 'how' dimension of the research question by showing how organisations implement sufficiency in practice.

5.1 | SCP: Structural Level

Structure-level sufficiency literature positions sustainability transitions as inherently political and institutional, advocating systemic transformations that challenge growth dependency, reconfigure governance and reshape infrastructures. The 34 studies in this level, conceptualise sufficiency as a strategic mechanism for post-growth transformation, grounded in justice, redistribution and the redefinition of societal needs. These studies emphasise that sufficiency must become an operational principle in policy design and planning systems. In the following, we elaborate on various sub-levels within the analysis of the structural level.

5.1.1 | Institutionalisation and Policy Reform

A recurring concern is the institutional embedding of sufficiency in public policy frameworks. Grewer et al. (2024) show that while German municipalities acknowledge the importance of sufficiency, they struggle to integrate it beyond symbolic acts within technology-driven climate strategies. Callmer and Bradley (2021), Svenfelt and Bradley (2024), and Lee et al. (2023) propose policy tools such as carbon budgets, work-time reduction and participatory welfare design to mainstream sufficiency. These studies collectively argue that sufficiency must be institutionalised rather than framed as individual moral responsibility. At a broader scale, Hayden (2014a) critiques Canada's climate strategy for sacrificing sufficiency to green growth narratives, while Hayden and Dasilva (2022) analyse how wellbeing economy policies risk becoming symbolic unless sufficiency is embedded through work-time reduction and preventative investment.

In the European Union (EU) context, Fleischmann et al. (2024), examine the marginalisation of sufficiency in EU bioeconomy debates, and Ertelt (2024) challenges the dominance of techno-centric paradigms in freight planning and calls for sufficiency-oriented transport policy. Aagaard and Christensen (2024) offer a participatory perspective, exploring how Danish stakeholders envision sufficiency in food, housing and mobility through community-led reorganisation of provision systems.

5.1.2 | Social Justice and Equity Dimensions

Several studies suggest that sufficiency must be grounded in social justice and equity, positioning sufficiency as a tool for

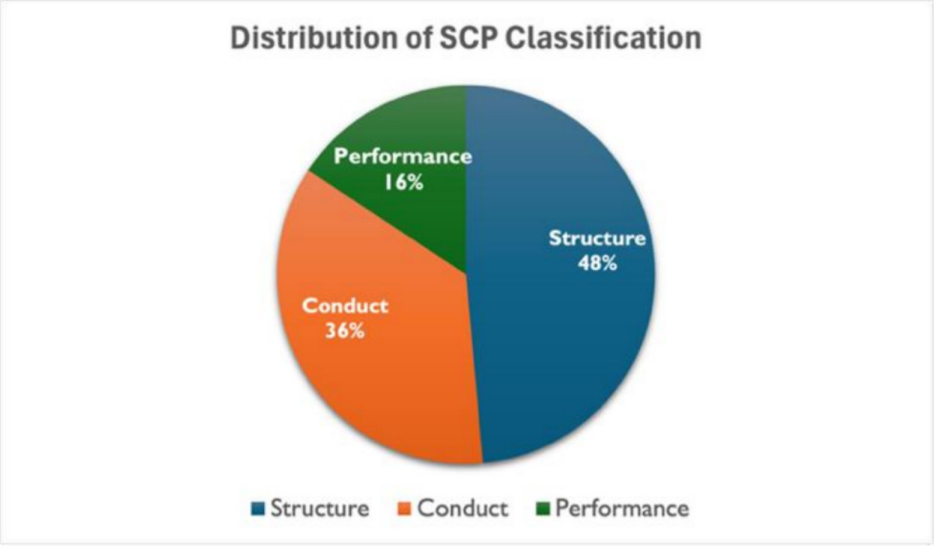

FIGURE 4 | Distribution of SCP classification.

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systemic redistribution and social transformation, rather than merely a lifestyle choice. For example, Darmon (2024) links sufficiency to de-accumulation and self-limitation, arguing that structural inequality drives unsustainability. Mölders et al. (2014) adopt a feminist political economy approach, showing how sufficiency intersects with basic needs, unpaid labour and social autonomy. Sahakian and Rossier (2022) explore how misrecognition and exclusion shape who can access voluntary sufficiency, while Guilbert (2024) documents exclusionary dynamics during Switzerland's energy crisis, urging inclusive policy frameworks. Eversberg and Fritz (2022) examine how social and economic conditions affect people's ability to engage in sufficiency practices and draw attention to the risk of attributing moral value to frugality that stems from structural constraints rather than voluntary commitment.

Moreover, Zsolnai (2018) brings an ethical and spiritual dimension, arguing that sufficiency must rest on intrinsic values like frugality and care, and reframes sufficiency as a moral commitment beyond instrumental logic. Similarly, Tröger and Reese (2021) and Lage (2022) and Lage et al. (2023) offer conceptual frameworks that bridge sufficiency with social movements and transdisciplinary transformation, emphasising its normative and political foundations.

5.1.3 | Infrastructure and Environment

Infrastructural studies highlight the spatial and material enablers of sufficiency. For instance, Biloria (2021) challenges smart cities for privileging efficiency over equity, advocating for empathic cities built around participatory governance and regenerative design. Bohnenberger (2021) explores how housing policy can operationalise sufficiency, showing that legal frameworks and redistributive tools are essential for aligning environmental and social objectives. Moreover, Christ et al. (2024) and Christensen et al. (2024) examine how small-scale interventions in environmental planning and mobility can catalyse sufficiency-oriented behaviour, especially when it is supported by justice-sensitive design. Malik et al. (2024) focus on decarbonisation, emphasising behavioural and policy integration to ensure sufficiency and justice for low-income households. These studies call for structural transformation of environments to embed sufficiency into everyday life.

5.1.4 | Modelling, Economic Systems and the Role of Business

The studies in this group, provide empirical legitimacy to sufficiency's potential as a structural solution, and argue that quantitative and systemic analyses strengthen the empirical basis for sufficiency. For example, Soergel et al. (2024) model sufficiency scenarios and find they outperform efficiency-focused pathways in meeting climate and biodiversity goals. Neumann and Hirschnitz-Garbers (2022) similarly show that sufficiency-induced lifestyle changes are crucial for achieving 1.5°C targets, especially when combined with equity measures.

From an economic systems perspective, Alcott (2008) challenges the rebound effect, arguing that voluntary frugality is insufficient without structural measures like mandatory restrictions on supply and emissions. Mathis (2018) echoes this concern, framing sufficiency as a strategy for absolute reductions in material throughput. Schmidhäuser et al. (2024) develop a typology of sufficiency in industrial design, frugality and longevity, linking corporate sustainability to systemic transformation.

Moreover, Bocken et al. (2022) propose the sufficiency-based circular economy, outlining how business models can embed sufficiency principles and tackle the root causes of unsustainable consumption (and production) patterns. Villalba-Eguiluz et al. (2023) focus on the social and solidarity economy, showing how sufficiency is implemented through local enterprise, cooperation and stakeholder inclusion.

5.1.5 | Narratives, Movements and Strategic Framing

Studies in this group argue that narrative framing and movement alliances are critical to sufficiency's strategic potential. For example, Hayden (2014b), through the case of Heathrow airport's expansion, shows how sufficiency arguments can be politically persuasive when aligned with the legal climate mandates. Yet, Hayden (2024) challenges the concept of the wellbeing economy for failing to institutionalise sufficiency, highlighting the gap between narrative and structural change.

Collaborations and agreements—potentially on a global scale—are needed for sufficiency transformations. Spanier et al. (2024) explore alliances between grassroots movements and degrowth actors and find that sufficiency gains attention when it bridges local practice and systemic challenges. In another article, Higgins-Desbiolles (2018) focus on a tourism sector and argue that sufficiency requires global institutional reform and the reorientation of sustainability governance toward equity and ecological limits.

5.1.6 | Conclusion: Sufficiency as a Transformative Governance Paradigm

Collectively, these 34 studies claim that sufficiency is not merely a behavioral or cultural ideal, but a structural imperative and show that sufficiency must be integrated into governance, infrastructure, economic systems and social systems to drive meaningful sustainability transitions. Whether through participatory policy, ethical foundations, system modeling or institutional reform, sufficiency offers a multidimensional pathway toward post-growth futures rooted in equity and resilience.

5.2 | SCP: Conduct Level

The conduct-level sufficiency literature reframes how consumption, work and organisational processes align with the principle of sufficiency. Drawing from 25 studies, this body of literature emphasises that sufficiency is not simply about personal moderation; it is embedded in routines, technologies, social norms and institutional strategies that together shape everyday conduct and systemic transformation. In the

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following, we elaborate on various sub-levels within the analysis of the conduct level.

5.2.1 | Practices, Emotions and Identity

A central theme is the relational and emotional character of sufficiency practices. For example, Kropfeld (2023) and Suski et al. (2023) challenge individualist models of behaviour change and use practice theory to show how sufficiency can be realised through shared routines, material arrangements and evolving norms, in domains such as fashion and urban gardening. Moreover, Callmer and Boström (2024) extend this by framing consumption reduction as a care-based process, grounded in emotional commitments toward the self and others. In addition, emotions, risk and autonomy also shape sufficiency identities. For instance, Ford (2019, 2021), through ethnographic studies of US self-sufficiency movements, shows how sustainable living enthusiasts adopt sufficiency as a cultural response to institutional distrust and social uncertainty. The author concludes that these identities often promote individualist logics, while challenging mainstream consumption, highlighting the duality within sufficiency approaches to sustainability.

Other studies focus on internal drivers and behavioural reflexivity. For example, Tröger et al. (2021) and Iran et al. (2024) explore psychological interventions such as reflective writing and organising, as entry points into sufficiency. While these studies show promise in shifting attitudes, they also note structural and motivational barriers to long-term change. Likewise, Habermehl et al. (2024) who further emphasise this tension by examining packaging reduction in the Fast Moving Consumer Goods (FMCG) context. find that consumer willingness to reduce waste is high, but its feasibility depends on contextual infrastructure, calling for better alignment between intention and systemic support.

5.2.2 | Strategic Sufficiency in Business Conduct

The literature also positions businesses as key actors in sufficiency transitions. For example, Bocken and Short (2016) outline how sufficiency can inform business model innovation, shifting firms toward need-based value creation and moderation strategies. Additionally, sufficiency-based studies by Bocken et al. (2020) and Beulque et al. (2023) demonstrate how companies in the food and retail sectors integrate sufficiency through product redesign, repair services and circular models. Similarly, conceptual refinement is provided by Freudenreich and Schaltegger (2020), who identify reuse, extended use and reduced production as core to sufficiency-oriented business logic. Niessen and Bocken (2021) introduce the Business for Sufficiency (BfS) framework, balancing feasibility with transformative potential while acknowledging persistent market barriers.

However, despite these advances, tensions between profit and sufficiency remain. For example, Gossen and Heinrich (2021) find that sufficiency messaging in fashion marketing is more viable for small firms, while Gossen and Kropfeld (2022) reveal how outdoor brands struggle to align marketing with sufficiency values without compromising commercial appeal. Additionally, Schauman et al. (2023) suggest that digital fashion may offer a pathway to dematerialisation, allowing companies to meet consumer desires while reducing material impact.

5.2.3 | Communication, Norms and Participation

Several studies investigate how communication strategies shape sufficiency acceptance. For example, Persson and Klintman (2022) show how NGOs reframe sufficiency through narratives of care and systemic challenges rather than sacrifice. Gossen et al. (2023) find that normative messaging struggles to shift consumption habits in mobile phone purchasing, particularly when convenience dominates and call for deeper cultural strategies that account for entrenched practices and values. Some studies argue that gamified and participatory methods offer more promise toward meeting sufficiency goals. For example, Chamaret et al. (2023) explore energy sufficiency through household-tailored gamification, while Graham et al. (2024) employ design games to engage citizens in discussions of sufficiency, particularly in housing. Both studies emphasise co-creation and engagement as essential tools for mainstreaming sufficiency beyond informational campaigns.

5.2.4 | Organisational Systems and Internal Practices

Beyond consumers and communication, sufficiency is increasingly embedded within organisational cultures and infrastructures. For example, Sanjeev et al. (2024) show how green Human Resource Information Systems (HRIS) can institutionalise sustainability by linking workplace processes to sufficiency values. Hasim et al. (2020) examine university sustainability strategies and emphasise the importance of leadership, collaboration and systemic incentives in realising sufficiency goals.

von Alberti-Alhtaybat et al. (2021) explore how organisational culture shape a 'sustainability habitus', suggesting that long-term sufficiency adoption depends on internal norms and practices. Beyeler and Jaeger-Erben (2022) complement this perspective by exploring sufficiency in small entrepreneurial ventures in fashion and electronics, and identify care, patience and learning as core organisational values, while also highlighting the tension of working against dominant market norms, emphasising the need for supportive policies and enabling environments. Lastly, Toczé and Nadjm-Tehrani (2024) focus on digital infrastructures by applying sufficiency to edge computing. The authors propose defining 'good enough' in technical systems to challenge default expectations of perpetual upgrading, and advocate for community co-design in ICT innovation.

5.2.5 | Conclusion: From Practices to Systems of Sufficiency

Together, 25 conduct-level studies show that sufficiency is not a singular behavioural adjustment but a cross-cutting orientation that informs practices, business strategy, communication and organisational culture. Moreover, sufficiency emerges not only from individual motivation but from the systems, technological, emotional, social and institutional factors that make alternative ways of living and working viable. These studies collectively call

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for aligning personal intention with supportive infrastructures, value-based business models and participatory design to realise sufficiency transitions at scale.

5.3 | SCP: Performance Level

Performance-level studies (11 articles) of sufficiency examine how practices and policies rooted in the principle of 'enough' generate measurable impacts, particularly in carbon reduction, mobility transitions, wellbeing and political support. This growing body of literature evaluates sufficiency not only as an ethical or strategic orientation but as an empirically grounded approach to achieving sustainability goals across social and infrastructural contexts. In the following, we elaborate on various sub-levels within the analysis of the performance level.

5.3.1 | Behavioural Shifts and Subjective Experiences

Several studies highlight the emotional, identity-based and behavioral dimensions of sufficiency. For example, Verfuerth et al. (2019) develop a sufficiency attitude scale, finding strong correlations between sufficiency orientation and reduced CO_2 footprints, outperforming broader environmental metrics. Loy et al. (2021) extend this behavioral link by demonstrating that individuals with strong global identities tend to travel less and show greater support for low-carbon mobility, highlighting the role of identity in advancing sufficiency-aligned behavior.

Some studies also argue that the behavioural outcomes are deeply context sensitive. For example, Hess (2022) examines the psychological effects of car shedding, finding that voluntary reduction enhances wellbeing, while involuntary shedding due to financial stress leads to diminished satisfaction. This finding is also supported by Korsnes and Solbu (2024), whose study of low-income households in Norway reveals how practices like reuse and reduced consumption, often adopted for economic reasons, partly align with sufficiency goals.

5.3.2 | Equity, Access and Infrastructure

Performance-level sufficiency is also applied to infrastructure and access. For example, Martens et al. (2022) propose sufficiency thresholds in transport planning, using minimum access standards to identify structural exclusion and frame sufficiency as a metric of equity. Castro and Bleys (2023) bring a subjective dimension to these thresholds by exploring how income sufficiency affects perceptions of what is 'enough'. The findings indicate that individuals with higher incomes tend to adopt higher sufficiency thresholds, posing challenges for the development of fair and inclusive sufficiency policies.

Similarly, Niessen et al. (2023) investigate the mobility impact of the Swapfiets bike subscription model in the Netherlands. The authors reported that while participants initially shifted away from car use, many discontinued cycling after their subscription ended, suggesting that business-led sufficiency initiatives require supportive infrastructure and long-term policy support to sustain behavioral change. In addition, Frick and Matthies (2020) highlight similar rebound risks in digital consumption, showing how online shopping efficiencies may paradoxically increase resource use through expanded leisure travel and digital dependency.

5.3.3 | Policy Support and Climate Performance

Other studies link sufficiency lifestyles to broader policy preferences and environmental impacts. For example, O'Dell et al. (2025) find that individuals who practice sufficiency are more likely to support eco-social policies such as fossil fuel caps and universal healthcare. The authors argue that the connection between private behaviour and public preference suggests a feedback loop that could reinforce structural transitions toward sustainability. Alexander-Haw and Schleich (2024) show that a sufficiency orientation correlates with lower carbon footprints across consumption categories, or sustainable living does not necessarily entail deprivation (Korsnes and Solbu 2024).

Moreover, Ouanes et al. (2022) explore the role of energy prosumers in emissions reduction. Their analysis of photovoltaic households finds that energy sufficiency, i.e. consuming less, not just producing clean energy, is essential to avoiding rebound effects and achieving true mitigation. This indicates the need for policies integrating behavioural guidance and technological support to prevent sufficiency from being undermined by increased consumption.

5.3.4 | Conclusion: Toward Empirically Grounded Sufficiency Strategies

These 11 studies collectively reveal that sufficiency is measurable, multidimensional and deeply shaped by social, economic and infrastructural contexts. They demonstrate that sufficiency-oriented practices lead to quantifiable sustainability outcomes, but only when supported by relevant policies, meaningful identity shifts and systemic enablers. From reduced travel emissions and subjective wellbeing gains to enhanced policy support and lower household footprints, performance-level sufficiency offers clear evidence that living 'within enough' can yield transformative, scalable outcomes.

Figure 5 illustrates the revised SCP framework, informed by a systematic analysis of 70 articles. Each dimension of SCP framework is expanded through thematic groupings that reflect how sufficiency is conceptualised and operationalised in the literature. Rather than altering the foundational logic of the SCP, the figure builds on it to reveal sufficiency-specific orientations and shows how each category encompasses distinct yet overlapping domains of intervention across system levels.

5.4 | Interpreting Literature Through Thematic Clusters

In this section, a thematic synthesis will be discussed, which identifies eight cross-cutting clusters that go beyond SCP dimensions, presenting dominant research themes, conceptual innovations and recurring conflict across the sufficiency literature. The discussion synthesises insights from the SCP-classified and thematically

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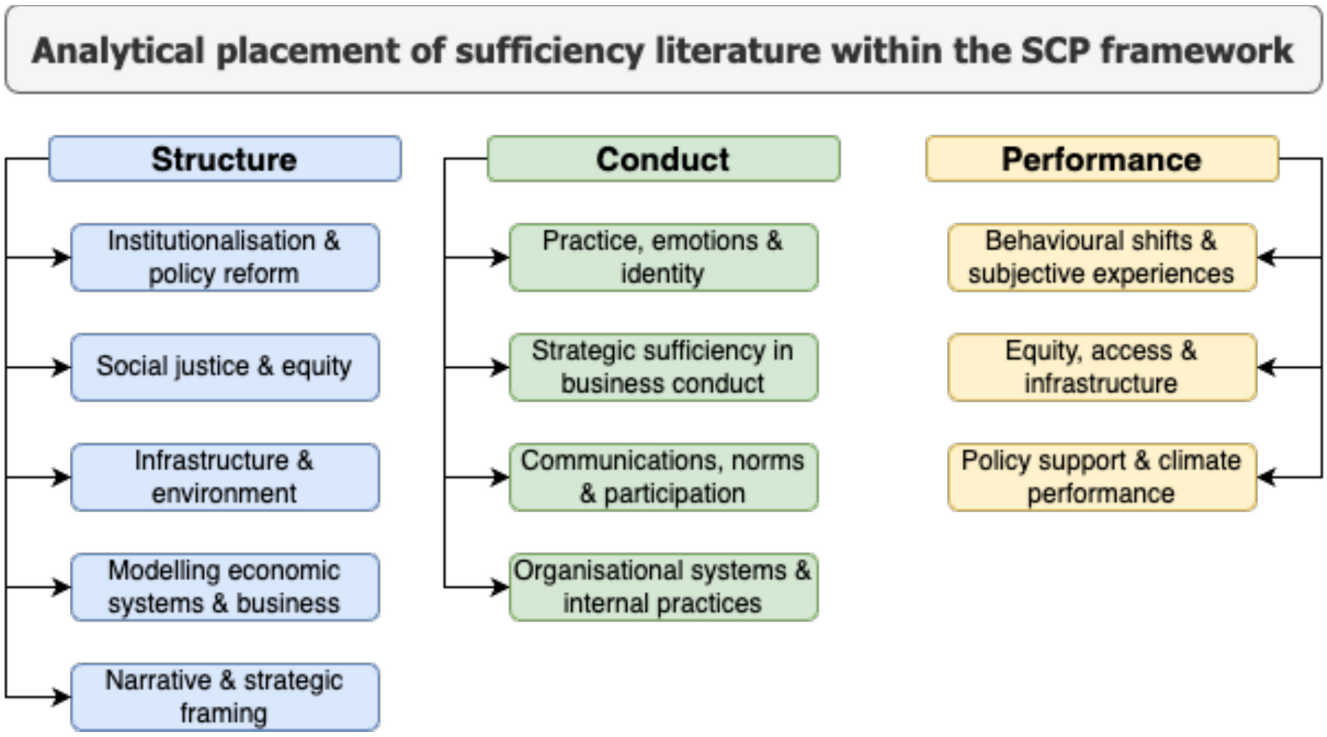

FIGURE 5 | Analytical placement of sufficiency literature within the SCP framework.

clustered analysis of 70 sufficiency studies. The aim of this approach is to extract the patterns, orientations and tensions that emerge from the literature and assess their implications for future research and practice. Each cluster reflects a distinct yet overlapping perspective on sufficiency, capturing how the concept is embedded in policy, culture, infrastructure and everyday life.

5.4.1 | Cluster 1: Governance, Policy and Institutional Change

This cluster examines how sufficiency is framed and implemented within public governance systems, including climate planning, social welfare and institutional infrastructure. Studies highlight that sufficiency must be institutionalised through regulatory instruments, participatory mechanisms and long-term visioning (e.g., Callmer and Bradley 2021; Grewer et al. 2024).

5.4.2 | Cluster 2: Social Justice, Equity and Wellbeing

In this cluster, sufficiency is positioned as a tool for equity and empowerment. Reviewed studies address the moral and political dimensions of sufficiency, warning against the positive framing of frugality and calling for inclusive policies that support voluntary, dignified forms of reduced consumption (e.g., Darmon 2024; Korsnes and Solbu 2024).

5.4.3 | Cluster 3: Behavioural Change, Identity and Psychological Enablers

In this cluster, several studies explore the affective and cognitive dimensions of sufficiency, linking internal motivations, self-identity and psychological needs to sustainable practices. These studies suggest that long-term sufficiency behavior depends on value alignment, autonomy and emotional resonance (e.g., Tröger et al. 2021; Verfuerth et al. 2019).

5.4.4 | Cluster 4: Infrastructure, Mobility and Spatial Planning

Sufficiency transitions are also shaped by the physical and spatial systems that govern housing, transportation and public space. Studies in this cluster focus on structural redesign, such as access thresholds, spatial justice and low-impact infrastructure as preconditions for systemic change (e.g., Christ et al. 2024; Martens et al. 2022).

5.4.5 | Cluster 5: Business Models and Organisational Strategy

This cluster centres on sufficiency in contexts, including product-service innovation, internal governance and strategic decision-making. The reviewed studies illustrate how sufficiency is emerging as a credible business paradigm but constrained by growth-oriented market structures (e.g., Bocken and Short 2016; Sanjeev et al. 2024).

5.4.6 | Cluster 6: Communication, Norms and Participation

In this cluster, sufficiency is viewed as a socio-cultural construct influenced by narratives, language and co-creation. Studies in this cluster show that reframing sufficiency around care,

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participation and shared responsibility improves social acceptability and fosters behavioural change (e.g., Graham et al. 2024; Persson and Klintman 2022).

5.4.7 | Cluster 7: technological systems and digital sufficiency

This cluster examines how digital infrastructures enable or undermine sufficiency. The literature critiques efficiency-driven innovation and explores design strategies that promote intentional limitation and dematerialisation (e.g., Schauman et al. 2023; Toczé and Nadjm-Tehrani 2024).

5.4.8 | Cluster 8: Metrics, Evaluation and Modelling

Studies in this cluster develop methods and tools to measure the impacts of sufficiency. These include scenario modelling, carbon accounting and footprint metrics strengthening the empirical and policy relevance of sufficiency approaches (e.g., Alexander-Haw and Schleich 2024; Soergel et al. 2024).

5.5 | From Thematic Clusters to a Typology

Building on the SCP mapping and thematic synthesis, we propose a typology of five strategic types through which organisations operationalise sufficiency (see Table 1). These types reflect distinct orientations, logics of intervention and leverage points that cut across structure, conduct and performance dimensions. While the eight thematic clusters capture the diversity of sufficiency efforts, this second layer of interpretation integrates these findings into a coherent typology. Rather than being mutually exclusive, these five strategic types may coexist or reinforce one another in practice. Each type represents a distinct pathway for enabling sufficiency transitions, ranging from top-down regulation to participatory routines, internal reconfiguration, value alignment or outcome evaluation.

The typology offers a conceptual bridge between descriptive themes and practical insights. It supports researchers, policymakers and practitioners in identifying which types of interventions are most aligned with their system conditions, design strategies or policy goals. Importantly, it moves beyond narrow behavioral framings by highlighting how sufficiency can be embedded through institutional, relational, organisational, cognitive or performance-driven mechanisms.

6 | Discussion

This section provides an interpretation of the findings and connects them to broader theoretical and practical debates. It first addresses the first part of the RQ 'How is sufficiency integrated across organisational structures, conduct and performance?', by examining the system-level dynamics and contradictions revealed through the SCP framework. It then turns to the second part of the research question, discussing the developed typology through which sufficiency is implemented in practice and reflecting on its conceptual and applied relevance. A framework is introduced, which depicts the analytical progression from the SCP framework to thematic clusters, and to a typology of sufficiency. The discussion concludes with contributions to theory and practice, followed by a reflection on limitations and directions for future research.

6.1 | System-Level Integration of Sufficiency Across Structure, Conduct and Performance

This subsection presents the response to the first part of RQ 'How is sufficiency integrated across organisational structures, conduct and performance?'. Building on the SCP framework and the systematic analysis of 72 studies, we critically interpret the findings through a system-level lens. Rather than reiterating results, we examine the organisational dynamics, structural tensions and performance contradictions that emerge when sufficiency is implemented in real-world organisational contexts.

TABLE 1 | A typology of five strategic types for organisational sufficiency.

Strategic type	Definition
1 Institutional-structural	Focuses on top-down regulation, public planning, and legal frameworks that mandate or incentivise sufficiency (e.g., carbon budgets, transport thresholds) (Grewer et al. 2024; Martens et al. 2022).
2 Relational-practice	Emphasises sufficiency as an emergent feature of shared social practices, community routines, and mutual care embedded in daily life (Callmer and Boström 2024; Kropfeld 2023).
3 Organisational-strategic	Involves integrating sufficiency into organisational systems such as reporting, HR practices, and product-service portfolios, often through hybrid or circular models (Bocken and Short 2016; Sanjeev et al. 2024; Schauman et al. 2023).
4 Behavioural-cognitive	Targets personal values, identity, and intrinsic motivation through reflection, education, or nudging to embed sufficiency in individual and collective behaviour (Verfuerth et al. 2019; Iran et al. 2024).
5 Performance-driven	Relies on empirical evidence, modelling, and data tools to measure sufficiency outcomes and evaluate impact, enabling scenario-based decision support and accountability (Soergel et al. 2024; Alexander-Haw and Schleich 2024).

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The SCP framework enables us to examine how misalignments between structural conditions, organisational conduct and sustainability outcomes can limit the implementation of sufficiency in practice. This analysis connects the findings to broader theoretical debates on post-growth, transition governance and sustainability-oriented business strategy (Bocken et al. 2016; Niessen and Bocken 2021; Spash 2021), while also highlighting conceptual tensions that have received limited attention in the sufficiency literature to date.

The results reveal structural tensions, including institutional lock-ins, growth-driven policy obligations and conflicting governance incentives that hinder the operationalisation of sufficiency. These findings extend earlier conceptualisations of sufficiency as primarily individual or consumption-oriented (Princen 2005; Lorek and Spangenberg 2014) by highlighting the organisational and systemic dimensions that shape, limit or enable sufficiency pathways. In doing so, the paper brings a new perspective to the field: it moves sufficiency out of the personal domain and reframes it as a relational and strategic challenge that organisations must address across structure, conduct and performance dimensions.

Importantly, while the review focuses on organisational contexts, many studies also explore sufficiency through other lenses such as individual behaviours, cultural norms or policy frameworks. These perspectives often intersect with, but do not always align with organisational priorities. This suggests an important theoretical insight: sufficiency operates as a cross-level and debated concept, subject to tensions between top-down structural constraints and bottom-up behavioural practices. The SCP lens helps to reveal how these misalignments are rooted in institutional design, highlighting where well-intentioned organisational strategies fall short due to a lack of supportive frameworks or contradictory performance logics.

This layered perspective also reveals the fragmented nature of sufficiency interventions. The eight thematic clusters show how sufficiency intersects with diverse systemic domains from policy instruments and infrastructural redesign to behavioural enablers and digital systems, yet these often appear as isolated or experimental efforts, rather than integrated transformations.

This insight highlights a fundamental tension: sufficiency is positioned as a corrective to overconsumption, yet organisational context remains governed by incentive structure and market expectations that prioritise throughput and expansion. Even where sufficiency is linked to wellbeing and equity, these values often remain in tension with competitive imperatives, presenting broader debates on the difficulty of embedding post-growth principles within established business and policy paradigms. The absence of systemic coherence across these domains reinforces the idea that sufficiency is not yet embedded as a stable organisational norm. This finding aligns with critiques in the literature that call for more holistic and institutionally grounded models of post-growth transformation such as Spash (2021), and Victor (2008).

From a strategic design and organisational perspective, the findings show that sufficiency-oriented strategies are often not challenged by a lack of innovation or intent, but by misalignments in the enabling environment. For instance, organisations may adopt sufficiency-inspired strategies that promote wellbeing or reduce material throughput, yet remain subject to metrics, market conditions or governance regimes that favour efficiency, productivity and competitive growth. Such contradictions are not only implementation challenges; they are indicative of deeper systemic incoherence. This suggests that sufficiency cannot succeed through isolated organisational action alone, but requires complementary shifts in institutional strategies, policy logics and societal expectations.

This research also builds on a growing body of studies published in relevant literature that explore sufficiency-oriented strategies, business model transformation and sustainability governance (e.g., Bocken et al. 2016; Niessen and Bocken 2021; Di Vaio et al. 2025). While prior studies have highlighted the need for post-growth strategies and sufficiency-informed design, our paper provides a structured system-level analysis that links organisational initiatives to structural constraints and outcome-level contradictions. In doing so, it advances the research agenda by offering a novel framework that supports both diagnostic insight and strategy development for organisations aiming for sustainability transitions.

6.2 | From SCP to Thematic Clusters and to a Typology

This subsection addresses the second part of our RQ 'What strategic types define sufficiency's implementation in practice?' By building on the SCP-based review and thematic clustering, in the following we elaborate on a typology developed in this paper that captures the distinct strategic orientations through which sufficiency is operationalised in organisational contexts.

Using the SCP framework as a theoretical lens revealed that sufficiency is rarely limited to a single dimension of structure, conduct or performance. Instead, it operates across interconnected organisational, cultural and systemic dimensions. Eight thematic clusters were identified, ranging from governance and infrastructural drivers to psychological enablers and digital systems, reflecting the varied domains where sufficiency is being practiced.

Notably, many clusters overlap with multiple SCP dimensions. For instance, 'Social Justice, Equity, and Wellbeing' bridges organisational conduct and broader performance outcomes, while 'Communication, Norms, and Participation' highlights how cultural narratives intersect both strategic practices and societal impacts. This shows the limitations of treating SCP dimensions as discrete silos and highlights the systemic complexity of embedding sufficiency within and around organisations.

Building on the thematic insights, a further synthesis develops a typology of sufficiency that presents different systemic entry points through which sufficiency is practiced within the organisational context. While these are not mutually exclusive, distinguishing them conceptually helps identify leverage points and distinct orientations, and anticipate the tensions that arise when

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sufficiency challenges growth-centric logics. Moreover, they move beyond descriptive themes to capture transforming governance and infrastructures, reshaping social norms and everyday practices, and how to integrate sufficiency into organisational decision-making. Figure 6. shows the analytical progression from the SCP framework (left) to eight thematic clusters (centre), and to a typology of sufficiency (right) that offers higher-order interpretations of sufficiency within the organisational context.

6.3 | Contributions to Theory

This paper contributes to the theoretical development of the SCP framework within the context of sufficiency-oriented organisational transformation. While the SCP model has traditionally been applied in industrial organisation economics to assess market efficiency and firm performance, we reposition it here as a system-level diagnostic lens. This shift enables a critical evaluation of how structural conditions, organisational conduct and performance outcomes interact, and often misalign to constrain the operationalisation of sufficiency. Rather than applying SCP as a prescriptive or normative framework, we use it reflexively to extract systemic contradictions and institutional tensions that challenge sustainability transitions.

Our findings offer three interrelated theoretical contributions. First, we develop a systemic and multi-level perspective on sufficiency that bridges structural enablers, organisational routines and sustainability performance. This responds to and extends the literature by moving beyond individual-level framings of sufficiency (e.g., Coffay et al. 2024; Demirel and Danisman 2019; Lorek and Spangenberg 2014) towards integrated, organisationally embedded approaches. Second, we extend the theory-building potential of the SCP framework by demonstrating how it can be used to reveal dynamic tensions such as those between post-growth goals and growth-driven institutional logics that remain underexplored in sustainability-oriented strategy research (e.g., Bocken et al. 2022; Niessen and Bocken 2021). Third, we advance a typology of five strategic types through which sufficiency is operationalised in organisational contexts, identifying distinct logics of intervention that move across SCP domains (Beulque et al. 2023). This typology reveals the systemic entry points and implementation tensions that are often overlooked within conventional and siloed strategic approaches. In doing so, this paper expands the conceptualisation for theorising sufficiency in business and sustainability scholarship (Bocken and Short 2016).

It positions sufficiency not as an ethical add-on or individual practice, but as systemic and organisationally mediated transformation strategy (Darmon 2024). In contrast to prior BSE literature that often focuses on sufficiency in consumer behaviour, policy design or business model innovation in isolation (e.g., Di Vaio et al. 2024; Huang et al. 2024; Puglieri et al. 2022), this paper offers a synthetic SCP-guided framework that connects these domains and reveals the conditions under which sufficiency may succeed or fail to reshape

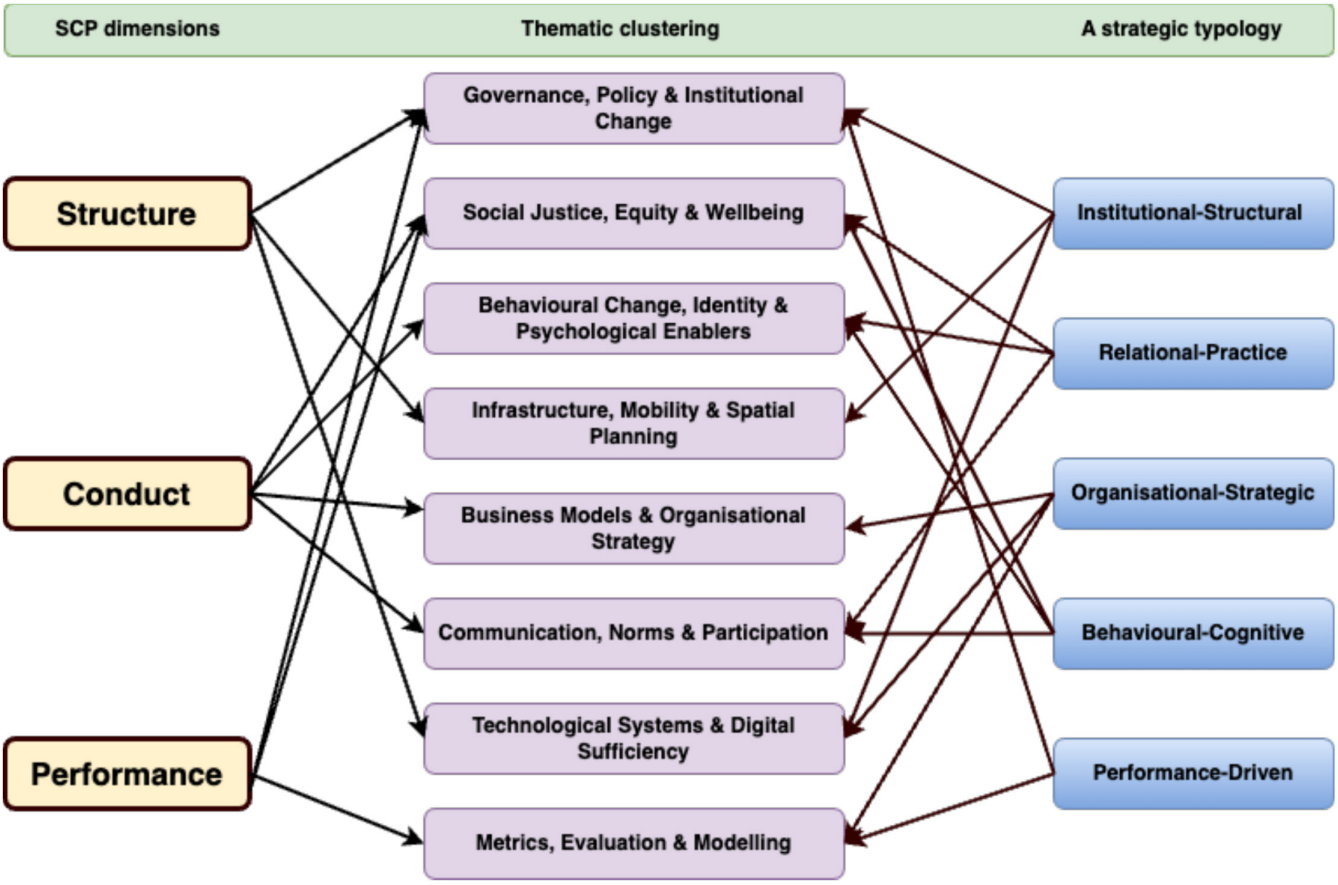

FIGURE 6 | Mapping the relationship between SCP dimensions, thematic clusters and a typology of sufficiency.

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organisational practice. In sum, our theoretical contributions are fourfold:

- We synthesise how sufficiency is framed and operationalised across a fragmented literature, providing a comprehensive system-level perspective.
- We extend the SCP framework beyond its original economic use to serve as a theory-building tool in sustainability transitions research.
- We reframe sufficiency as a cross-level organisational practice, subject to structural, behavioural and performance-based tensions.
- We propose a typology of sufficiency strategies, grounded in empirical evidence that offers insight into how transformation might be operationalised or hindered within organisations.

6.4 | Contributions to Practice and Policy

For practitioners, the key insight is that sufficiency does not negate strategy and innovation, but reorients them toward alternative goals such as wellbeing, equity and ecological integrity. Rather than prescribing a singular path, the findings show that sufficiency emerges through diverse and context-sensitive strategies. These include infrastructural redesign, participatory governance and behavioural alignment, as captured in the eight thematic clusters and five strategic types. In this way, the paper contributes a structured diagnostic lens that practitioners can use to assess how sufficiency aligns or conflicts with their organisational models, decision routines and institutional constraints.

The SCP-guided framework and resulting typology help identify which organisational domains currently enable sufficiency and where tensions might be, particularly where growth-driven metrics, fragmented interventions or narrow behavioural programmes undermine systemic change.

For instance, an organisation focusing on circular product design may strengthen its impact by adopting relational-practice strategies that foster shared responsibility and cultural alignment, while public institutions may need to ensure that behavioural nudges are embedded in supportive infrastructures and governance mechanisms. These practical insights extend earlier calls in the literature (e.g., Song 2020; Treepongkaruna et al. 2025; Weissbrod and Bocken 2017) by offering a more comprehensive perspective that links organisational intention to structural lock-ins and performance contradictions.

For policymakers, the findings highlight that voluntary organisational commitments, though valuable, are unlikely to scale without complementary macro-level support. Institutional fragmentation, lack of policy coherence and evaluation logics that prioritise efficiency over sufficiency pose systemic barriers to implementation. The framework presented in this paper helps identify leverage points for policy design, e.g., in aligning regulatory, infrastructural and behavioural enablers. As such, sufficiency should not be approached as an individual or firm-level choice alone, but as a governance challenge requiring strategic coordination across system levels.

All in all, this paper contributes to practice by offering an actionable typology grounded in empirical patterns and organisational realities, and advances the sufficiency discourse by bridging sustainability strategy, post-growth governance and systemic transformation.

6.5 | Limitations and Future Work

Several limitations should be noted. The review was restricted to peer-reviewed studies indexed in Web of Science and Scopus that, while ensuring quality, may have excluded relevant insights from other sources in the literature. Additionally, the interpretive synthesis relied on thematic clustering and the typology of organisational sufficiency development, which, although systematic, involves researchers' judgment that could influence how patterns were framed and grouped.

These findings also point to important directions for future research. There is a need for more empirical work exploring how sufficiency is enacted within different organisational contexts, particularly under varying institutional and cultural conditions. Future research could deepen the findings of this research by empirically examining how the typology of sufficiency manifests across sectors, governance regimes and cultural contexts, and by exploring the organisational capabilities required to embed sufficiency as a credible alternative to growth.

Comparative studies could also examine which governance mechanisms, strategic alignments or performance metrics most effectively support sufficiency transitions. By addressing these gaps, future research can help advance sufficiency from an emerging concept toward a robust organisational paradigm capable of contributing meaningfully to long-term sustainability goals.

7 | Conclusion

This paper makes a novel contribution to sustainability and organisational research by systematically examining how the principle of sufficiency is operationalised within organisations. Although sufficiency has gained prominence in academic (Coffay et al. 2024; Hayden 2019; Lamberton 2005; Lehtonen and Heikkurinen 2022; Niessen and Bocken 2021) and policy domains (Burger et al. 2019; Callmer and Bradley 2021; Iten et al. 2024), its translation into organisational practice remains insufficiently understood.

By applying the SCP Framework to 70 studies, this review maps how sufficiency is framed, enacted and assessed across system levels, highlighting the interdependencies between structural conditions, organisational strategies and sustainability outcomes for supporting or hindering sufficiency-oriented transformations.

Beyond mapping, the inductive thematic synthesis reveals eight cross-cutting clusters of sufficiency-oriented practice. These

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clusters demonstrate that sufficiency is not limited to individual behaviour or reduced consumption but extends across institutional governance, organisational decision-making and infrastructural redesign. The development of the typology of sufficiency further contributes to the business strategy and sustainability literature by showing how organisations operationalise sufficiency, as structural reformers, internal enablers, normative communicators, performance drivers or behavioural innovators.

Taken together, the findings reposition sufficiency as a systemically embedded organisational strategy rather than a marginal ethical stance. They advance sufficiency research by offering a theory-informed classification of how sufficiency unfolds across multiple domains of action, while also exposing tensions between long-term wellbeing goals and short-term performance expectations. In doing so, the study contributes to the literature by proposing a sufficiency-oriented lens for strategic design, which redefines value creation in line with ecological and social thresholds.

However, the analysis also reveals some critical contradictions. Sufficiency remains structurally undervalued in organisational contexts and is still dominated by efficiency-driven goals. The findings highlight the need for strategic pluralism: while voluntary organisational commitments and individual lifestyle choices such as those captured in the Voluntary Simplicity Lifestyle (VSL) can demonstrate potential for sustainable consumption (Osikominu and Bocken 2020), they remain insufficient in the absence of supportive institutional frameworks. For sufficiency to move beyond experimental practices, alignment is required between micro-level behavioural change, meso-level organisational capabilities and macro-level policy and infrastructure systems. This includes balancing top-down governance instruments with bottom-up participatory initiatives to foster long-term impact.

References

Aagaard, L. K., and T. H. B. Christensen. 2024. "Provide or Prevent? Exploring Sufficiency Imaginaries Within Danish Systems of Provision." *Buildings and Cities* 5, no. 1: 434–450.

Alcott, B. 2008. "The Sufficiency Strategy: Would Rich-World Frugality Lower Environmental Impact?" *Ecological Economics* 64, no. 4: 770–786.

Alexander-Haw, A., and J. Schleich. 2024. "Low Carbon Footprint-A Consequence of Free Will or of Poverty? The Impact of Sufficiency Orientation and Deprivation on Individual Carbon Footprints." *Energy Policy* 195: 114367.

Aria, M., and C. Cuccurullo. 2017. "bibliometrix: An R-Tool for Comprehensive Science Mapping Analysis." *Journal of Informetrics* 11, no. 4: 959–975.

Bain, J. S. 1956. *Barriers to New Competition*. Harvard University Press.

Beulque, R., H. Micheaux, J. Ntsondé, F. Aggeri, and C. Steux. 2023. "Sufficiency-Based Circular Business Models: An Established Retailers' Perspective." *Journal of Cleaner Production* 429: 139431.

Beyeler, L., and M. Jaeger-Erben. 2022. "How to Make More of Less: Characteristics of Sufficiency in Business Practices." *Frontiers in Sustainability* 3: 949710.

Biloria, N. 2021. "From Smart to Empathic Cities." *Frontiers of Architectural Research* 10, no. 1: 3–16.

Bocken, N., M. Coffay, and C. Dalhammar. 2025. "The Brussels and California Effects? Circular Economy Policy Influence Across Borders." *Circular Economy and Sustainability* 5: 1665–1688.

Bocken, N., L. S. Morales, and M. Lehner. 2020. "Sufficiency Business Strategies in the Food Industry - The Case of Oatly." *Sustainability* 12, no. 3: 824.

Bocken, N., I. Weissbrod, and M. Antikainen. 2021. "Business Experimentation for Sustainability: Emerging Perspectives." *Journal of Cleaner Production* 281: 124904.

Bocken, N. M., L. Niessen, and S. W. Short. 2022. "The Sufficiency-Based Circular Economy - An Analysis of 150 Companies." *Frontiers in Sustainability* 3: 899289.

Bocken, N. M., and S. W. Short. 2016. "Towards A Sufficiency-Driven Business Model: Experiences and Opportunities." *Environmental Innovation and Societal Transitions* 18: 41–61.

Bocken, N. M., and S. W. Short. 2020. "Transforming Business Models: Towards a Sufficiency-Based Circular Economy." In *Handbook of the circular economy*, 250–265. Edward Elgar Publishing.

Bocken, N. M. P., S. W. Short, P. Rana, and S. Evans. 2016. "A Literature and Practice Review to Develop Sustainable Business Model Archetypes." *Journal of Cleaner Production* 65: 42–56.

Bohnenberger, K. 2021. "Can 'Sufficiency' Reconcile Social and Environmental Goals? A Q-Methodological Analysis of German Housing Policy." *Journal of Housing and the Built Environment* 36, no. 1: 171–189.

Bourai, S., R. Arora, and N. Yadav. 2024. "Structure-Conduct-Performance (SCP) Paradigm in Digital Platform Competition: A Conceptual Framework." *Journal of Strategy and Management* 17, no. 2: 322–347.

Burger, P., A. Sohre, and I. Schubert. 2019. "Governance for Sufficiency: A New Approach to a Contested Field." In *Sustainability Governance and Hierarchy*, 157–177. Routledge.

Callmer, Å., and M. Boström. 2024. "Caring and Striving Toward a New Consumer Identity in the Process of Consumption Reduction." *Frontiers in Sustainability* 5: 1416567.

Callmer, Å., and K. Bradley. 2021. "In Search of Sufficiency Politics: The Case of Sweden." *Sustainability: Science, Practice and Policy* 17, no. 1: 194–208.

Castro, D., and B. Bleys. 2023. "Do People Think They Have Enough? A Subjective Income Sufficiency Assessment." *Ecological Economics* 205: 107718.

Chamaret, C., M. Guérineau, and J. C. Mayer. 2023. "When Saying 'Enough' Is Not Enough: How Cultivating Households' Mindfulness Through Gamification Can Promote Energy Sufficiency." *Energy Research & Social Science* 105: 103294.

Christ, M., J. Lage, B. Sommer, et al. 2024. "Putting Sufficiency Into Practice: Transdisciplinary Sufficiency Research in Urban Development: The Hafen-Ost Real-World Laboratory in Flensburg, Germany." *GAIA-Ecological Perspectives for Science and Society* 33, no. 1: 26–34.

Christensen, T. H., L. K. Aagaard, A. K. Juvik, C. Samson, and K. Gram-Hanssen. 2024. "Promoting Practices of Sufficiency: Reprogramming Resource-Intensive Material Arrangements." *Buildings & Cities* 5, no. 1: 629–644.

Coffay, M., R. Tveterås, N. Bocken, and M. L. Bogers. 2024. "Sustainable Business Model Innovation, Dynamic Capabilities, and Organizational Design: Insights From Norwegian Aquaculture." *Business Strategy and The Environment* 33, no. 6: 5386–5404.

Darmon, I. 2024. "Equality, Not Sufficiency! Critical Theoretical Perspectives on the Inequality-Unsustainability Nexus." *Sustainability: Science, Practice and Policy* 20, no. 1: 2338588.

De Figueirêdo Junior, H. S., M. P. M. Meuwissen, and A. G. J. M. Oude Lansink. 2014. "Integrating Structure, Conduct and Performance Into

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70347, Wiley Online Library on [16/11/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Value Chain Analysis." *Journal on Chain and Network Science* 14, no. 1: 21–30.

Demirel, P., and G. O. Danisman. 2019. "Eco-Innovation and Firm Growth in the Circular Economy: Evidence From European Small-and Medium-Sized Enterprises." *Business Strategy and the Environment* 28, no. 8: 1608–1618.

Di Vaio, A., M. Chhabra, A. Zaffar, and D. Balsalobre-Lorente. 2025. "Accounting and Accountability in the Transition to Zero-Carbon Energy for Climate Change: A Systematic Literature Review." *Business Strategy and the Environment* 34, no. 5: 5925–5946.

Di Vaio, A., A. Zaffar, M. Chhabra, and D. Balsalobre-Lorente. 2024. "Carbon Accounting and Integrated Reporting for Net-Zero Business Models Towards Sustainable Development: A Systematic Literature Review." *Business Strategy and the Environment* 33, no. 7: 7216–7240.

Dyllick, T., and K. Hockerts. 2002. "Beyond the Business Case for Corporate Sustainability." *Business Strategy and the Environment* 11, no. 2: 130–141.

Ed-Dafali, S., Z. Adardour, A. Derj, A. Bami, and K. Hussainey. 2025. "A PRISMA-Based Systematic Review on Economic, Social, and Governance Practices: Insights and Research Agenda." *Business Strategy and the Environment* 34, no. 2: 1896–1916.

Elo, S., and H. Kyngäs. 2008. "The Qualitative Content Analysis Process." *Journal of Advanced Nursing* 62, no. 1: 107–115.

Ertelt, S. M. 2024. "Beyond Predict and Provide: Embracing Sufficiency Synergies in Road Freight Electrification Across the European Union." *Energy Research & Social Science* 111: 103498.

Esposito, M., A. Kapoor, and S. Goyal. 2012. "Enabling Healthcare Services for the Rural and Semi-Urban Segments in India: When Shared Value Meets the Bottom of the Pyramid." *Corporate Governance: The International Journal of Business in Society* 12, no. 4: 514–533.

Eversberg, D., and M. Fritz. 2022. "Bioeconomy as a Societal Transformation: Mentalities, Conflicts and Social Practices." *Sustainable Production and Consumption* 30: 973–987.

Fleischmann, B., A. Mayer, C. Görg, and M. Pichler. 2024. "Negotiating Biophysical Limits in the European Union's Bioeconomy: A Critical Analysis of Two Conflicts Over Regulating Biomass Use in EU Policy." *Sustainability Science* 19: 1935–1948.

Ford, A. 2019. "The Self-Sufficient Citizen: Ecological Habitus and Changing Environmental Practices." *Sociological Perspectives* 62, no. 5: 627–645.

Ford, A. 2021. "Emotional Landscapes of Risk: Emotion and Culture in American Self-Sufficiency Movements." *Qualitative Sociology* 44: 125–150.

Freudenreich, B., and S. Schaltegger. 2020. "Developing Sufficiency-Oriented Offerings for Clothing Users: Business Approaches to Support Consumption Reduction." *Journal of Cleaner Production* 247: 119589.

Frick, V., and E. Matthies. 2020. "Everything Is Just a Click Away. Online Shopping Efficiency and Consumption Levels in Three Consumption Domains." *Sustainable Production and Consumption* 23: 212–223.

Fu, W. 2003. "Applying the Structure-Conduct-Performance Framework in the Media Industry Analysis." *International Journal on Media-Management* 5, no. 4: 275–284.

Garnett, T. 2014. "Three Perspectives on Sustainable Food Security: Efficiency, Demand Restraint, Food System Transformation. What Role for Life Cycle Assessment?" *Journal of Cleaner Production* 73: 10–18.

Ghobakhloo, M., M. Iranmanesh, A. Grybauskas, M. Vilkas, and M. Petraitė. 2021. "Industry 4.0, Innovation, and Sustainable Development: A Systematic Review and a Roadmap to Sustainable Innovation." *Business Strategy and the Environment* 30, no. 8: 4237–4257.

Girod, B., O. van Vliet, and B. P. Weidema. 2014. "Reducing Environmental Impacts Through Sufficiency-Oriented Consumption." *Sustainability Science* 9, no. 2: 211–225.

Gossen, M., and A. Heinrich. 2021. "Encouraging Consumption Reduction: Findings of a Qualitative Study With Clothing Companies on Sufficiency-Promoting Communication." *Cleaner and Responsible Consumption* 3: 100028.

Gossen, M., and M. I. Kropfeld. 2022. "'Choose Nature. Buy Less.' Exploring Sufficiency-Oriented Marketing and Consumption Practices in the Outdoor Industry." *Sustainable Production and Consumption* 30: 720–736.

Gossen, M., and L. Niessen. 2024. *Sufficiency in Business: The Transformative Potential of Business for Sustainability*, 348. Transcript Verlag.

Gossen, M., J. Tröger, M. Veneny, H. Eichhorn, and J. Bergener. 2023. "Do People Make Sufficiency-Oriented Mobile Phone Choices Based on Dynamic Norms? The Perception and Effectiveness of Sufficiency-Promoting Messages in Online Media." *Frontiers in Sustainability* 4: 1145243.

Gough, I. 2023. "Sufficiency as a Value Standard: From Preferences to Needs." *Ethics, Policy & Environment*: 1–22. https://doi.org/10.1080/21550085.2023.2269055.

Graham, P., P. Nourian, E. Warwick, and M. Gath-Morad. 2024. "'Rightsize': A Housing Design Game for Spatial and Energy Sufficiency." *Buildings and Cities* 5, no. 1: 316–330. https://doi.org/10.5334/bc.443.

Grewer, J., M. Keck, and J. Zscheischler. 2024. "Different Interpretations of Sufficiency in Climate-Protection Strategies: A Typology Based on 40 Pioneering Municipalities in Germany." *Sustainability: Science, Practice and Policy* 20, no. 1: 2350216.

Guilbert, A. 2024. "Energy Sufficiency and Recognition Justice: A Study of Household Consumption." *Buildings & Cities* 5, no. 2. https://doi.org/10.5334/bc.458.

Gusenbauer, M., and N. R. Haddaway. 2020. "Which Academic Search Systems Are Suitable for Systematic Reviews or Meta-Analyses? Evaluating retrieval qualities of Google Scholar, PubMed, and 26 Other Resources." *Research Synthesis Methods* 11, no. 2: 181–217.

Habermehl, T., T. Decker, and K. Menrad. 2024. "An Explorative Study on Packaging-Saving Consumer Practices in the Fast-Moving Consumer Goods Sector." *Sustainability* 16, no. 22: 9983. https://doi.org/10.3390/su16229983.

Hasim, M. S., M. K. A. Jalil, L. S. Safiee, E. I. Khalid, and K. Q. Jie. 2020. "Factors Influencing the Adoption of Sustainability Into University Facilities Management Practices: A Case Study of Universities in South Australia." *International Journal of Environment and Sustainable Development* 19, no. 3: 308–319.

Hayden, A. 2014a. "Enough of That Already: Sufficiency-Based Challenges to High-Carbon Consumption in Canada." *Environmental Politics* 23, no. 1: 97–114.

Hayden, A. 2014b. "Stopping Heathrow Airport Expansion (for Now): Lessons From a Victory for the Politics of Sufficiency." *Journal of Environmental Policy & Planning* 16, no. 4: 539–558.

Hayden, A. 2019. "Sufficiency." In *Routledge Handbook of Global Sustainability Governance*, 151–163. Routledge.

Hayden, A. 2024. "The Wellbeing Economy in Practice: Sustainable and Inclusive Growth? Or a Post-growth Breakthrough?" *Humanities and Social Sciences Communications* 11, no. 1: 1–15.

Hayden, A., and C. Dasilva. 2022. "The Wellbeing Economy: Possibilities and Limits in Bringing Sufficiency From the Margins Into the Mainstream." *Frontiers in Sustainability* 3: 966876.

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70347, Wiley Online Library on [16/11/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Hess, A. K. 2022. "The Relationship Between Car Shedding and Subjective Well-Being." *Transportation Research Interdisciplinary Perspectives* 15: 100663.

Higgins-Desbiolles, F. 2018. "Sustainable Tourism: Sustaining Tourism or Something More?" *Tourism Management Perspectives* 25: 157–160.

Hoang, T. H. V., W. Przychodzen, J. Przychodzen, and E. A. Segbotangni. 2020. "Does It Pay to be Green? A Disaggregated Analysis of US Firms With Green Patents." *Business Strategy And The Environment* 29, no. 3: 1331–1361.

Huang, Y. C., L. T. Shih, and Z. H. Cheng. 2024. "A Multi-Level Analysis of Individual Green Entrepreneurial Orientation: Evidence From Taiwan's Environmental Protection Sectors." *Business Strategy and the Environment* 33, no. 4: 3440–3462.

Iran, S., C. J. Martinez, and L. S. Walsleben. 2024. "Unravelling the Closet: Exploring Reflective Decluttering and Its Implications for Long-Term Sufficient Clothing Consumption." *Cleaner And Responsible Consumption* 15: 100230.

Iten, T., I. Seidl, and M. Pütz. 2024. "Sufficiency Policy: A Definition, Conceptual Framework, and Application to Municipalities." *Sustainability Science* 19, no. 5: 1709–1734.

Jackson, T. 2009. *Prosperity Without Growth: Economics for a Finite Planet*. 1st ed. Routledge.

Jungell-Michelsson, J., and P. Heikkurinen. 2022. "Sufficiency: A Systematic Literature Review." *Ecological Economics* 195: 107380.

Korsnes, M., and G. Solbu. 2024. "Can Sufficiency Become the New Normal? Exploring Consumption Patterns of Low-Income Groups in Norway." *Consumption and Society* 3, no. 3: 235–253.

Kropfeld, M. I. 2023. "Lifestyles of Enough Exploring Sufficiency-Oriented Consumption Behaviour From a Social Practice Theory Perspective." *Journal of Consumer Culture* 23, no. 2: 369–390.

Kunisch, S., D. Denyer, J. M. Bartunek, M. Menz, and L. B. Cardinal. 2023. "Review Research as Scientific Inquiry." *Organizational Research Methods* 26, no. 1: 3–45.

Lage, J. 2022. "Sufficiency and Transformation-A Semi-Systematic Literature Review of Notions of Social Change in Different Concepts of Sufficiency." *Frontiers in Sustainability* 3: 954660.

Lage, J., M. Boecker, and M. Christ. 2023. "How Can Sufficiency Policy Succeed? Planning and Implementation of Sufficiency-Oriented Urban Development by Municipal Administrations." *Gaia-Ecological Perspectives for Science and Society* 32, no. 4: 368–376.

Lamberton, G. 2005. "Sustainable Sufficiency–An Internally Consistent Version of Sustainability." *Sustainable Development* 13, no. 1: 53–68.

Lee, J., M. Koch, and J. Alkan-Olsson. 2023. "Deliberating a Sustainable Welfare-Work Nexus." *Politische Vierteljahresschrift* 64, no. 4: 825–844.

Lehtonen, T., and P. Heikkurinen. 2022. "Sufficiency and Sustainability: Conceptual Analysis and Ethical Considerations for Sustainable Organisation." *Environmental Values* 31, no. 5: 599–618.

Lorek, S., and D. Fuchs. 2013. "Strong Sustainable Consumption Governance–Precondition for a Degrowth Path?" *Journal of Cleaner Production* 38: 36–43.

Lorek, S., and J. H. Spangenberg. 2014. "Sustainable Consumption Within a Sustainable Economy–Beyond Green Growth and Green Economies." *Journal of Cleaner Production* 63: 33–44.

Loy, L. S., J. Tröger, P. Prior, and G. Reese. 2021. "Global Citizens-Global Jet Setters? The Relation Between Global Identity, Sufficiency Orientation, Travelling, and a Socio-Ecological Transformation of the Mobility System." *Frontiers in Psychology* 12: 622842.

Malik, J., T. Hong, M. Wei, and S. Rotmann. 2024. "Prioritize Energy Sufficiency to Decarbonize Our Buildings." *Nature Human Behaviour* 8, no. 3: 406–410.

Martens, K., M. E. Singer, and A. L. Cohen-Zada. 2022. "Equity in Accessibility: Moving From Disparity to Insufficiency Analyses." *Journal of the American Planning Association* 88, no. 4: 479–494.

Mathis, K. 2018. *Sustainability Strategies and the Problem of the Rebound Effect*, 3–17. Springer International Publishing.

Moher, D., A. Liberati, J. Tetzlaff, and D. G. Altman. 2009. "Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement." *BMJ (Clinical Research Ed.)* 339: b2535–b2535. https://doi.org/10.1136/bmj.b2535.

Mölders, T., A. Szumelda, and U. Winterfeld. 2014. "Sufficiency and Subsistence–On Two Important Concepts for Sustainable Development." *Problems of Sustainable Development* 9, no. 1: 21–27.

Mongeon, P., and A. Paul-Hus. 2016. "The Journal Coverage of Web of Science and Scopus: A Comparative Analysis." *Scientometrics* 106, no. 1: 213–228.

Mont, O., and Y. V. Palgan. 2025. "The Sharing Economy and Sufficiency." In *Understanding the Urban Sharing Economy*, 230–246. Edward Elgar Publishing.

Neumann, K., and M. Hirschnitz-Garbers. 2022. "Material Efficiency and Global Pathways Towards 100% Renewable Energy Systems-System Dynamics Findings on Potentials and Constraints." *Journal of Sustainable Development of Energy, Water and Environment Systems* 10, no. 4: 1–20.

Newaz, M. S., and A. Appolloni. 2024. "Evolution of Behavioral Research on E-Waste Management: Conceptual Frameworks and Future Research Directions." *Business Strategy and the Environment* 33, no. 2: 477–503.

Niessen, L., and N. M. Bocken. 2021. "How Can Businesses Drive Sufficiency? The Business for Sufficiency Framework." *Sustainable Production and Consumption* 28: 1090–1103.

Niessen, L., N. M. Bocken, and M. Dijk. 2023. "The Impact of Business Sufficiency Strategies on Consumer Practices: The Case of Bicycle Subscription." *Sustainable Production and Consumption* 35: 576–591.

Niessen, L., M. Gossen, L. Beyeler, H. Strobel, and J. Königs. 2025. "How to Survive in a Growth-Oriented Economy: Findings of a Semi-Systematic Literature Review on the Role of Growth for Sufficiency-Oriented Businesses." *Zeitschrift Für Wirtschafts- Und Unternehmensethik* 26, no. 2: 234–267.

Nikou, S., L. Magnier, and H. S. Sinnige. 2025. "Sufficiency in the Kitchen: Intention to Reuse Food Leftovers and Associated Design Strategies." *Food Quality and Preference* 131: 105571. https://doi.org/10.1016/j.foodqual.2025.105571.

O'Dell, D., D. Contu, and G. Shreedhar. 2025. "Public Support for Degrowth Policies and Sufficiency Behaviours in the United States: A Discrete Choice Experiment." *Ecological Economics* 228: 108446.

Osikominu, J., and N. Bocken. 2020. "A Voluntary Simplicity Lifestyle: Values, Adoption, Practices and Effects." *Sustainability* 12, no. 5: 1903.

Ouanes, N., J. Kegel, J. Wiesenthal, et al. 2022. "Prosuming–Energy Sufficiency and Rebound Effects: Climate Impact of Changing Household Consumption Patterns in Germany." *TATuP-Zeitschrift für Technikfolgenabschätzung in Theorie und Praxis* 31, no. 2: 18–24.

Panagiotou, G. 2006. "The Impact of Managerial Cognitions on the Structure-Conduct-Performance (SCP) Paradigm: A Strategic Group Perspective." *Management Decision* 44, no. 3: 423–441.

Panigrahi, A., S. Nikou, and G. Calabretta. 2025. "The Sustainability Scale-Up Framework: A Tool to Design Scale-Up Strategies for

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70347, Wiley Online Library on [16/11/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Sustainable Businesses." *Sustainable Production and Consumption* 59: 375–393. https://doi.org/10.1016/j.spc.2025.08.021.

Paul, J., W. M. Lim, A. O'Cass, A. W. Hao, and S. Bresciani. 2021. "Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR)." *International Journal of Consumer Studies* 45, no. 4: O1–O16.

Persson, O., and M. Klintman. 2022. "Framing Sufficiency: Strategies of Environmental Non-Governmental Organisations Towards Reduced Material Consumption." *Journal of Consumer Culture* 22, no. 2: 515–533.

Post, C., R. Sarala, C. Gatrell, and J. E. Prescott. 2020. "Advancing Theory With Review Articles." *Journal of Management Studies* 57, no. 2: 351–376. https://doi.org/10.1111/joms.12549.

Princen, T. 2003. "Principles for Sustainability: From Cooperation and Efficiency to Sufficiency." *Global Environmental Politics* 3, no. 1: 33–50.

Princen, T. 2005. *The Logic of Sufficiency*. MIT Press. https://books.google.nl/books?id=hL5NEAAAQBAJ.

Puglieri, F. N., R. Salvador, O. Romero-Hernandez, et al. 2022. "Strategic Planning Oriented to Circular Business Models: A Decision Framework to Promote Sustainable Development." *Business Strategy and the Environment* 31, no. 7: 3254–3273.

Sahakian, M., and C. Rossier. 2022. "The Societal Conditions for Achieving Sufficiency Through Voluntary Work Time Reduction: Results of a Pilot Study in Western Switzerland." *Frontiers in Sustainability* 3: 956055.

Sanjeev, R., N. S. Natrajan, and S. Dash. 2024. "Organisational Sustainability Through Human Resource Information System." *International Journal of Knowledge Management Studies* 15, no. 1: 70–92.

Sarokin, S. N., and N. M. P. Bocken. 2024. "Pursuing Profitability in Slow Fashion: Exploring Brands' Profit Contributors." *Journal of Cleaner Production* 444: 141237.

Schauman, S., S. Greene, and O. Korkman. 2023. "Sufficiency and the Dematerialization of Fashion: How Digital Substitutes Are Creating New Market Opportunities." *Business Horizons* 66, no. 6: 741–751.

Schmidhäuser, P., M. Inhofer, A. Buchholz, F. Mais, and R. Miehe. 2024. "Industrial Sufficiency: A Conceptual Methodological Framework." *Sustainability* 16, no. 24: 11121. https://doi.org/10.3390/su162411121.

Soergel, B., S. Rauner, V. Daioglou, et al. 2024. "Multiple Pathways Towards Sustainable Development Goals and Climate Targets." *Environmental Research Letters* 19, no. 12: 124009.

Song, H. C. 2020. "Sufficiency Economy Philosophy: Buddhism-Based Sustainability Framework in Thailand." *Business Strategy and the Environment* 29, no. 8: 2995–3005.

Spangenberg, J. H., and S. Lorek. 2019. "Sufficiency and Consumer Behaviour: From Theory to Policy." *Energy Policy* 129: 1070–1079.

Spanier, J., L. Guerrero Lara, and G. Feola. 2024. "A One-Sided Love Affair? On the Potential for a Coalition Between Degrowth and Community-Supported Agriculture in Germany." *Agriculture and Human Values* 41, no. 1: 25–45.

Spash, C. L. 2017. *Routledge Handbook of Ecological Economics*. Routledge.

Spash, C. L. 2021. "Apologists for Growth: Passive Revolutionaries in a Passive Revolution." *Globalizations* 18, no. 7: 1123–1148.

Suski, P., A. Palzkill, and M. Speck. 2023. "Sufficiency in Social Practices: An Underestimated Potential for the Transformation to a Circular Economy." *Frontiers in Sustainability* 3: 1008165.

Svenfelt, Å., and K. Bradley. 2024. "Mainstreaming Sustainable Consumption: Lessons Learned From a Four-Year Research Program." *Sustainability: Science, Practice and Policy* 20, no. 1: 2411041.

Thomas, J., and A. Harden. 2008. "Methods for the Thematic Synthesis of Qualitative Research in Systematic Reviews." *Bmc Medical Research Methodology* 8: 1–10.

Toczé, K., and S. Nadjm-Tehrani. 2024. "The Necessary Shift: Toward a Sufficient Edge Computing." *IEEE Pervasive Computing* 23, no. 2: 7–16.

Tranfield, D., D. Denyer, and P. Smart. 2003. "Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review." *British Journal of Management* 14, no. 3: 207–222.

Treepongkaruna, S., P. Sarajoti, and V. Korphaibool. 2025. "Unlocking Synergies: Sufficiency Economy Philosophy for Sustainability." *Business Strategy and the Environment* 34, no. 3: 3446–3468.

Tröger, J., and G. Reese. 2021. "'Talkin' bout a Revolution: An Expert Interview Study Exploring Barriers and Keys to Engender Change Towards Societal Sufficiency Orientation." *Sustainability Science* 16: 827–840.

Tröger, J., M. C. Wullenkord, C. Barthels, and R. Steller. 2021. "Can Reflective Diary-Writing Increase Sufficiency-Oriented Consumption? A Longitudinal Intervention Addressing the Role of Basic Psychological Needs, Subjective Well-Being, and Time Affluence." *Sustainability* 13, no. 9: 4885.

Verfuerth, C., L. Henn, and S. Becker. 2019. "Is It Up to Them? Individual Leverages for Sufficiency." *GAIA-Ecological Perspectives for Science and Society* 28, no. 4: 374–380.

Victor, P. A. 2008. "Managing Without Growth: Slower by Design, Not Disaster." In *Managing Without Growth*. Edward Elgar Publishing.

Villalba-Eguiluz, U., M. Sahakian, C. González-Jamett, and E. Etxezarreta. 2023. "Social and Solidarity Economy Insights for the Circular Economy: Limited-Profit and Sufficiency." *Journal of Cleaner Production* 418: 138050.

von Alberti-Alhtaybat, L., Z. Alhatabat, and K. Al-Htaybat. 2021. "Investigating the Sustainability Habitus: Insights From Aramex's Sustainability Practices and Reports." *Meditari Accountancy Research* 29, no. 3: 477–501.

Weissbrod, I., and N. M. Bocken. 2017. "Developing Sustainable Business Experimentation Capability – A Case Study." *Journal of Cleaner Production* 142: 2663–2676.

Wood, B., O. Williams, P. Baker, V. Nagarajan, and G. Sacks. 2021. "The Influence of Corporate Market Power on Health: Exploring the Structure-Conduct-Performance Model From a Public Health Perspective." *Globalization and Health* 17: 1–17.

Yuen, K. F., X. Wang, Y. D. Wong, and K. X. Li. 2020. "The Role of Stakeholder Participation and Sustainability Integration in Maritime Transport: A Structure-Conduct-Performance Analysis." *Transport Policy* 99: 44–53.

Zsolnai, L. 2018. "Franciscan Spirituality and Economics." *Religions* 9, no. 10: 288.

10990836, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/bse.70347, Wiley Online Library on [16/11/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Appendix A

Overview of Structure-Level Sufficiency Articles and Thematic Contributions

Author(s)	Key insight/contribution
1. Aagaard and Christensen (2024)	Explores stakeholder visions for sufficiency in food, housing, mobility.
2. Alcott (2008)	Critiques voluntary sufficiency and advocates systemic constraints like quotas.
3. Bocken et al. (2022)	Proposes sufficiency-based circular economy principles through dematerialisation and regeneration.
4. Biloria (2021)	Critiques smart cities and promotes empathic, sufficiency-aligned urban planning.
5. Bohnenberger (2021)	Demonstrates how housing policy can align environmental and social goals.
6. Callmer and Bradley (2021)	Suggest institutional tools like carbon budgets and work-time reduction.
7. Christensen et al. (2024)	Explores how spatial interventions enable sufficiency behaviours among youth.
8. Christ et al. (2024)	Emphasises redesign of urban form for sufficiency and equity.
9. Darmon (2024)	Links structural inequality to sustainability and calls for redistribution.
10. Ertelt (2024)	Critiques techno-fix freight planning and proposes sufficiency logistics.
11. Eversberg and Fritz (2022)	Warns against involuntary frugality and structural exclusion.
12. Fleischmann et al. (2024)	Shows how sufficiency is sidelined in dominant growth-centred EU policies.
13. Grewer et al. (2024)	Typologies how German cities frame and apply sufficiency in climate planning.
14. Guilbert (2024)	Reveals exclusionary dynamics and calls for inclusive sufficiency frameworks.
15. Hayden (2014a)	Argues for post-growth sufficiency instead of green growth.
16. Hayden (2014b)	Uses Heathrow case to show political traction of sufficiency arguments.
17. Hayden (2024)	Highlights gap between wellbeing rhetoric and sufficiency practice.
18. Hayden and Dasilva (2022)	Warns that sufficiency must be central in wellbeing-oriented strategies.
19. Higgins-Desbiolles (2018)	Critiques growth-oriented tourism and proposes sufficiency-based reform.
20. Lage (2022)	Synthesises grassroots and policy approaches to sufficiency.
21. Lage et al. (2023)	Explores community organisation around housing and mobility.
22. Lee et al. (2023)	Proposes participatory sufficiency in labour and welfare systems.
23. Malik et al. (2024)	Advocates sufficiency-integrated energy justice for low-income households.
24. Mathis (2018)	Positions sufficiency as robust against rebound effects of efficiency.
25. Mölders et al. (2014)	Links sufficiency to unpaid work, subsistence, and autonomy.
26. Neumann and Hirschnitz-Garbers (2022)	Shows 1.5°C pathways require lifestyle change and equity.
27. Sahakian and Rossier (2022)	Highlights social constraints on access to voluntary sufficiency.
28. Schmidhäuser et al. (2024)	Defines sufficiency typology: frugality, longevity, and specificity.
29. Soergel et al. (2024)	Models show sufficiency outperforms techno-efficiency in sustainability goals.
30. Spanier et al. (2024)	Links sufficiency to grassroots coalitions and political influence.
31. Svenfelt and Bradley (2024)	Call for sufficiency tools like income caps and carbon budgeting.
32. Tröger and Reese (2021)	Link sufficiency to transformation through movement dynamics.
33. Villalba-Eguiluz et al. (2023)	Show sufficiency via minimalism, cooperation, and dematerialisation.
34. Zsolnai (2018)	Frames sufficiency as moral-economic practice rooted in frugality.

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Appendix B

Overview of Conduct-Level Sufficiency Articles and Thematic Contributions

Author(s)	Key insight/contribution
1. Kropfeld (2023)	Highlights sufficiency as emerging from shared routines, material arrangements, and social norms.
2. Suski et al. (2023)	Uses practice theory to show sufficiency through everyday shared routines and social practices.
3. Callmer and Boström (2024)	Frames sufficiency as emotionally grounded and relational, linked to care and reduction.
4. Ford (2019)	Explores emotional and ideological motivations in US prepper communities.
5. Ford (2021)	Reveals how sufficiency intersects with institutional distrust and resilience narratives.
6. Tröger et al. (2021)	Tests reflective diary interventions to enhance sufficiency orientation.
7. Iran et al. (2024)	Links sufficiency behaviour to intrinsic motivation and psychological need satisfaction.
8. Habermehl et al. (2024)	Finds willingness to reduce plastic waste depends on contextual feasibility and support.
9. Bocken and Short (2016)	Defines sufficiency strategies as proactive levers in sustainable business design.
10. Bocken et al. (2020)	Examines Oatly's use of sufficiency in product simplification and packaging.
11. Niessen and Bocken (2021)	Introduces BfS model balancing feasibility, innovation, and market constraints.
12. Freudenreich and Schaltegger (2020)	Explores sufficiency via reuse, longevity, and reduced production.
13. Beulque et al. (2023)	Analyses how firms implement sufficiency via repair and durability.
14. Gossen and Heinrich (2021)	Finds small firms better navigate sufficiency-profit tensions in communication.
15. Gossen and Kropfeld (2022)	Shows challenges of aligning sufficiency values with profit in large firms.
16. Schauman et al. (2023)	Proposes virtual products as sufficiency strategies to reduce material throughput.
17. Persson and Klintman (2022)	Highlights framing sufficiency through care rather than sacrifice.
18. Gossen et al. (2023)	Finds normative messaging struggles to shift habitual consumption practices.
19. Chamaret et al. (2023)	Evaluates gamified tools to shift energy practices toward sufficiency.
20. Graham et al. (2024)	Uses participatory tools to co-create spatial sufficiency ideas.
21. Sanjeev et al. (2024)	Links digital HR systems to sufficiency-aligned employee practices.
22. Hasim et al. (2020)	Emphasises management commitment and stakeholder collaboration for sufficiency.
23. von Alberti-Alhtaybat et al. (2021)	Explores how reporting norms shape a sufficiency-oriented habitus.
24. Toczé and Nadjm-Tehrani (2024)	Proposes good-enough tech and co-design to reduce ICT overconsumption.
25. Beyeler and Jaeger-Erben (2022)	Identifies care, patience, and learning as core values in sufficiency-aligned SMEs.

Appendix C

Overview of Performance-Level Sufficiency Articles and Thematic Contributions.

Author(s)	Key insight/contribution
1. Korsnes and Solbu (2024)	Shows alignment between economic necessity and sufficiency, warns against romanticising deprivation.
2. Castro and Bleys (2023)	Finds higher-income groups set higher thresholds for 'enough', complicating equity in sufficiency policy.
3. Verfuerth et al. (2019)	Develops sufficiency scale strongly correlated with lower CO_2 emissions.
4. Loy et al. (2021)	Links global identity to support for low-carbon mobility and reduced travel emissions.
5. Martens et al. (2022)	Proposes minimum access standards as sufficiency-based equity measures.
6. Hess (2022)	Finds voluntary car reduction improves wellbeing; involuntary leads to dissatisfaction.
7. Niessen et al. (2023)	Swapfiets users reduce car use temporarily; long-term behaviour needs policy and infrastructure support.

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Author(s)	Key insight/contribution
8. Frick and Matthies (2020)	Shows digital efficiencies can increase total consumption through leisure travel and device use.
9. O'Dell et al. (2025)	Practicing sufficiency predicts support for eco-social policies (e.g., healthcare, fuel caps).
10. Alexander-Haw and Schleich (2024)	Sufficiency orientation lowers emissions, but deprivation ≠ sustainability.
11. Ouanes et al. (2022)	Prosumption alone insufficient, energy reduction essential to avoid rebound and maximise mitigation.

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