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Waste Prevention and Minimisation in Western Consumer Behaviour: Is It Attainable?

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Abstract

By delving into the waste crisis in Western hyperconsumerist societies as an analytical case study, this study advances an actionable theory of minimalism to address systemic overproduction and overconsumption. Drawing on the interdisciplinary literature, the study analyses the structural, cultural, and psychological drivers of waste generation, synthesising critiques of hypercapitalism and hyperhedonism into a unified theoretical framework that exposes systemic lock-ins and the conflation of wants with socially legitimised needs. In response, the study develops a minimalist ethics framework that repositions sufficiency as a guiding principle for systemic transformation. Minimalism is conceptualised not as an individual restraint but as a multidimensional governance strategy capable of informing economic, technical/technological, regulatory, ecological, and cultural interventions to effectively tackle the waste crisis in Western hyperconsumerist societies.

Keywords: consumption; environmental ethics; minimalism; needs and wants; sustainability; waste prevention and minimisation; systems approach

1. Introduction

Waste is growing at an alarming rate, reflecting structural patterns of overproduction and overconsumption, particularly within Western consumer societies. While technological innovation, circular economy strategies, and waste management interventions have received considerable attention in addressing this major global challenge, less focus has been placed on the behavioural foundations of waste generation. In particular, the ways in which socio-economic structures and institutionalised value systems shape the transformation of wants into perceived needs remain underexplored. This dynamic perpetuates excessive production and consumption, ultimately undermining waste prevention efforts. These issues highlight the urgent need to address waste as a systemic challenge; one that requires not only technical or economic solutions but also a coherent ethical framework capable of reorienting consumption practices. Such an approach should be grounded in interdisciplinary insights such as philosophical anthropology, environmental ethics and sustainability theory [1–3].

Although calls for minimalism are not new [4], the existing literature has largely approached minimalism through lifestyle studies [3,5,6], sufficiency metrics [7], and degrowth perspectives [8,9]. What remains underdeveloped is a unifying framework that formalises minimalism as a normative waste reduction ethic grounded in a reconceptualisation of human needs and the ethical mediation of wants. Moreover, critiques of hypercapitalism and

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hyperhedonism, understood here as structural conditions of continuous socio-economic growth and culturally ingrained consumption behaviours, respectively, have rarely been systematically integrated to examine how their reinforcing dynamics institutionalise overproduction and overconsumption, thereby underpinning waste generation. This study addresses these gaps by linking structural and cultural dynamics with patterns of consumption and waste generation, while developing a minimalism ethics framework as a multidimensional governance strategy.

To explore this paradigm shift, Section 3 examines the structural drivers of Western consumer behaviour and their relationship to waste generation, with emphasis on hypercapitalism. Section 4 analyses how structural overproduction and globalised supply chains institutionalise overproduction and cultivate hyperhedonistic consumption, using empirical evidence across material-intensive systems, including food, plastics, textiles, and electrical and electronic equipment (EEE). Moving forward, Section 5 draws on Maslow's hierarchy of needs and Max-Neef's human scale of needs to expose how contemporary consumer systems have systematically reframed wants into perceived necessities and unveil their role in fostering or hindering an ethic of minimalism. Led by this integrated approach, the study presents a minimalism ethics framework for catalysing change in consumer behaviour and even, perhaps, challenges and redefines the very concept of needs itself. Finally, Section 6 outlines systemic strategies for fostering behavioural change, focusing on mindset shift, education, regulatory reform, economic realignment, and technological design. This positions minimalism not solely as an individual lifestyle choice but as a multidimensional governance strategy capable of informing economic, technological, regulatory, ecological, and cultural interventions.

Ultimately, the study reframes waste prevention as a systemic transformation challenge that requires alignment between structural reform and behavioural reorientation. By grounding minimalism in an ethical and multidimensional framework, it seeks to harmonise upstream (pre-consumer, with lower demand and thereby lower production) and downstream (post-consumer waste generation) parts of the value chain.

2. Methodology

This study adopts an interdisciplinary narrative, literature review, and conceptual synthesis to examine the structural and cultural drivers of overconsumption. To achieve a comprehensive understanding of these dynamics, the study identifies systemic patterns across key material systems within high-income Western societies, namely, food, plastics, textiles and EEE. The objective is not to provide exhaustive empirical coverage but to develop analytical depth and support theory building, which involves integrating empirical, theoretical, and normative perspectives. This approach enables the development of a minimalism-based ethical framework for waste prevention.

2.1. Search Strategy and Eligibility Criteria

A targeted and iterative search strategy was employed to identify the relevant literature. The search was conducted using Web of Science, Scopus, and Google Scholar, complemented by targeted searches to capture both empirical and conceptual contributions. Keyword combinations included terms related to overconsumption trends, material throughput, waste generation, market dynamics, consumption patterns, and environmental externalities, alongside conceptual themes such as consumer behaviour, hypercapitalism, hyperhedonism, circular economy, minimalism, environmental ethics and sustainability transitions. The search primarily focused on the literature published from 2000 onwards, with earlier seminal works included where relevant.

Both peer-reviewed and grey literature were included to capture interdisciplinary perspectives and up-to-date empirical evidence. Grey literature, including reports and datasets from organisations such as the United Nations Environment Programme (UNEP), Food and Agriculture Organization (FAO), Organisation for Economic Co-operation and Development (OECD), and World Bank, was incorporated to support the analysis of material flows, market dynamics, and waste-associated trends.

Eligibility criteria were applied to ensure analytical focus and consistency. The review prioritised studies addressing high-income and Western contexts, where patterns of over-consumption and waste generation are most prevalent. The sources included comprised empirical and conceptual works examining the relationships among production, consumption, and waste, as well as the structural (i.e., socio-economic) and cultural drivers shaping consumption patterns. Sector-specific evidence was also incorporated across food, plastics, textiles, and EEE to identify recurring systemic patterns. Studies focused exclusively on low-income contexts were excluded, unless used for comparative purposes. Similarly, the literature addressing only downstream waste management without consideration of upstream considerations was not prioritised.

2.2. Analytical Procedure and Synthesis

The analysis followed a thematic and interpretive synthesis approach, enabling the integration of heterogeneous evidence across disciplines and sectors. A hybrid coding strategy was applied, combining deductive categories related to structural and cultural drivers (hypercapitalist production systems and hyperhedonistic consumption norms, respectively) with inductive identification of recurring themes emerging from the literature.

Evidence was synthesised across sectors (food, plastics, textiles, and EEE) to identify common trends, systemic lock-ins and trade-offs related to material throughput, waste generation, market structures, and consumption practices. A cross-sector synthesis (Table 1) was first developed to capture overarching patterns, followed by sector-specific syntheses (Tables 2–5). These tables provide illustrative indicators rather than exhaustive datasets, supporting comparative interpretation.

Finally, insights from the literature were integrated with normative perspectives to develop a conceptual minimalism ethics framework. Particular attention was given to how structural and cultural dynamics shape the construction and expansion of human needs and wants within high-consumption systems, which informed the development of the framework. The synthesis moved iteratively between empirical evidence and normative analysis, enabling the identification of systemic relationships between production, consumption, and waste and supporting a multidimensional governance perspective on waste prevention.

3. Structural Dimensions of Systemic Waste Generation in Western Societies

A substantial body of scholarship links production, consumption, and disposal (waste) processes to the structural imperatives of capitalism. These studies demonstrate that material throughput is embedded within systems oriented toward continuous economic growth and profit maximisation, rendering waste generation an externality of sustaining economic momentum. Nyberg and Wright foreground the structural dimensions of waste by analysing how corporations actively shape regulatory, political, and economic aspects to sustain and normalise a carbon- and waste-intensive economic order [10,11]. Similarly, [12] unravels the deeply entrenched economic mindset that prioritises growth and profit over environmental safeguarding, equality, and well-being. Ref. [13] (p. 149) further notes "*an intensification and an expansion of consumption which has now come to permeate the rhythms of everyday life, as well as the interior spaces of individuals, more profoundly than ever before*".

As ecological macroeconomic research demonstrates, sustained economic growth has historically been associated with rising material throughput and energy use [14,15]. In this context, waste generation is not accidental but a systemic outcome of growth-dependent economic models reliant on accelerating production, circulation, and replacement cycles [16].

3.1. Hypercapitalism

When capitalism prioritises unchecked financial gain for a select few over broader societal and environmental well-being [17], this is termed "hypercapitalism" and is particularly evident in high-income Western societies. Hypercapitalism persists because of the influence and vested interests of the elite, who actively maintain structures that maximise growth and profit, often at the expense of environmental and social welfare. Embedded within this system is a pervasive marketing and advertising machinery that encourages consumption, well beyond necessity, creating high material throughput and accelerating waste generation [11,12].

Within consumer theory, there are two opposing perspectives. On one end, there is the neo-liberal concept of free choice, which advocates for individual rationality and responsible purchasing [13] (p. 2). On the other end, empirical and theoretical research highlights structural constraints imposed by hypercapitalist marketing systems and mechanisms [17,18]. While individual choice remains relevant, it is shaped and constrained by these structural conditions, which influence preferences, availability, and perceived needs. This structural system drives overconsumption, environmental degradation, inequality, and systemic waste [19] (p. 618).

To move beyond conceptual critique, Section 3.2. presents the structural dimensions of overconsumption in high-income Western hypercapitalist systems, illustrating how these dimensions shape production, consumption, and disposal patterns that lead to broader environmental and social impacts.

3.2. Macro-Structural Drivers of Overconsumption in High-Income Hypercapitalist Systems

Table 1 synthesises key empirical patterns on material throughput, trade externalisation, waste intensity, and market concentration in high-income systems, particularly Western societies. These metrics depict the structural dimensions of hypercapitalism that sustain high levels of consumption and wastage. The evidence is drawn from international datasets and market analyses and is included to illustrate key features of high-income consumption systems rather than to provide an exhaustive dataset. Timeframes vary according to data availability.

Table 1. Observed trends and indicators of overconsumption in high-income economies. High-income countries are defined according to the United Nations income classification based on World Bank GNI per capita thresholds (≥$12,696 in 2020 values).

Structural Dimension	Metric	Empirical Pattern	Relevance to Hypercapitalism
Material throughput intensity	Material footprint per capita [1]	High-income countries use 6× more materials than low-income countries (based on 1970–2020 data) [20].	Persistent structural overconsumption dominated by high-income systems.
	Resource-related climate impacts per capita [2]	High-income countries responsible for 10× more climate impacts than low-income countries (based on 1970–2020 data) [20].	Disproportionate ecological burden associated with high-income systems' consumption patterns.

Table 1. *Cont.*

Structural Dimension	Metric	Empirical Pattern	Relevance to Hypercapitalism
Trade dependence	Physical trade balance [3]	High-income countries are persistent net importers of materials from lower-income countries (based on 1970–2020 data) [20].	Structural reliance of high-income systems on external resource extraction.
	Trade-displaced environmental impacts [4]	Environmental impacts displaced to lower-income countries (observed trends since 1995 until 2020) [20].	Externalisation of environmental impacts from high-income to low-income systems.
Waste generation intensity	Municipal waste generation per capita	Western countries far above global average (≈280 kg [21], e.g.: EU ≈ 782 kg (2023); Austria ≈ 782 kg (2023) [22]; USA ≈ 951 kg (2022); Canada ≈ 694 kg (2022) [23]).	Waste disposal intensity linked with high-income systems [24].
Market expansion, segmentation, and concentration	Fast-moving consumer goods (FMCG) market growth (%)	Global FMCG market valued at USD 171.9 billion in 2023, projected to reach USD 671.5 billion by 2033 (CAGR 15%) [25].	Rapid market expansion for accumulation of financial gain.
	FMCG segmentation	Food and beverage sector accounts for ~55% of total market value, while grocery stores represent ~40% of sales distribution [25].	Institutionalised segmentation to products that support food (survival) needs.
	FMCG market concentration	Dominated by a small group of multinational corporations (e.g., Coca-Cola Company, Atlanta, GA, USA; Pepper Snapple Group, Inc., Plano, TX, USA; Johnson & Johnson, Kimberly-Clark Corporation, Irving, TX, USA; Nestle, Patanjali Ayurved Ltd., Haridwar, India; PepsiCo, Inc., Harrison, NY, USA; Procter and Gamble, Revlon, Inc., Cincinnati, OH, USA; and Unilever Group), operating across food, beverage, personal care, and household segments [25].	Financial and corporate concentration in high-income systems.

[1] Quantity of materials that are extracted and processed globally to meet the consumption of an individual country; [2] lifecycle climate impacts associated with material extraction, processing, manufacturing, and trade; [3] net imports minus exports of materials and goods in physical tonnes; [4] per capita resource use and related environmental impacts through trade per income group.

Table 1 shows that high-income Western countries display material footprints per capita several times higher than those of low-income countries. While overproduction is not always directly quantified or explicitly referenced in the table, it is reflected through indicators such as material throughput intensity, surplus generation, rapid market expansion, and shortened product lifecycles, which collectively signal production levels exceeding effective demand. A net import dependence on those systems drives these high material footprints, which, in turn, leads to disproportionate resource-related climate impacts and intense waste generation. These patterns align with the broader literature on affluence-driven ecological pressure [26] and highlight that environmental burdens are not evenly distributed but are structurally externalised through global supply chains.

Simultaneously, fast-moving consumer goods (FMCG) markets exhibit rapid expansion, segmentation, and corporate concentration, reflecting growth-oriented dynamics

aligned with high-consumption patterns observed in Western economies. Market concentration among multinational corporations reinforces standardised high-throughput production systems, while marketing infrastructures normalise frequent product turnover. These dynamics create structural lock-ins that stabilise high consumption and disposal rates.

Importantly, Table 1 supports the central argument: poor waste prevention outcomes are systematically associated with growth imperatives, globalised extraction chains, concentrated market power, and short product lifecycles. Therefore, waste generation cannot be seen as a policy failure alone but as a predictable outcome of economic systems organised around throughput expansion.

4. Cultural Dimensions of Overconsumption in Western Societies and Interplay with Structural Dimensions

While structural dimensions reveal what drives overconsumption in high-income Western societies, cultural and psychological factors explain why these patterns persist. Hawkins' seminal work (2006) on the cultural dimensions of waste highlights the urgency of shifting values and behaviours, particularly in relation to distance, disposability, and denial [27] (p. 16). Extending this analysis, several studies show that consumption and waste prevention behaviour [28], including reuse, repair, redistribution [29–32], and "precycling" [33,34], is heavily shaped by values and norms [30–32,35,36].

Notwithstanding, behavioural approaches alone cannot fully explain persistent overconsumption and waste generation. The growing field of "discard studies" [37,38] situates waste within the wider socio-economic and normative structures, emphasising how systems of production, distribution, and consumption create systemic reinforcement of overconsumption and material throughput. Within this perspective, increased consumption is not only the result of individual choice, but also institutionally structured and culturally reinforced practices. Some authors emphasise the structural resilience of capitalism and question the feasibility of transformative change [18], while others advocate more radical systemic alternatives, beyond market-based reforms [39]. In navigating these debates, we follow [40], who recognise the interplay between socio-economic structures and socio-cultural dimensions in enabling systemic change.

This is often described in the literature as a structure of excess and addiction [13] (p. 154), where satisfaction is continually deferred, and desire is repeatedly reactivated. In this context, the pursuit of pleasure is socially organised in ways that sustain high levels of material throughput and normalise disposability.

4.1. Hyperhedonism

Western societies are characterised by hyperhedonism, a culture where the pursuit of the greater and newer pleasures becomes central to identity, social belonging and everyday life [30–32,35,36]. This phenomenon is reinforced by the proliferation of pervasive advertising and digital technologies, which create artificial desires, normalise excess and entrench unsustainable consumption [13,19].

As pointed out by [41] (p. 745), advertising is the *"creation of consumer needs which, in turn, suppress political expression and participation, create stereotypes and recreate social stratification, while it spearheads environmental damage"*. In this manner, consumption becomes linked to self-expression, convenience, status, and fulfilment, enticing consumers into a realm of endless, continuously renewed desires, hijacking rationality and modesty, and losing sight of how such behaviours and practices progressively replace sufficiency. This process contributes to widening patterns of waste generation [42], inequality [13], and environmental degradation, creating a co-evolved relationship between hypercapitalist growth imperatives and hyperhedonistic consumption norms [43].

To further clarify how these cultural dynamics translate into persistent consumption patterns, it is important to examine the underlying motivational mechanisms that mediate between structural conditions and individual behaviour. These mechanisms help explain why consumption practices persist even when material needs are satisfied and why behavioural change alone has a limited effect in reducing overall material throughput.

A first mechanism relates to status signalling and identity formation, where material goods function as markers of social status, success, and belonging. Consumption becomes symbolic, where ownership of goods serves as a form of social validation [44,45]. A second mechanism is convenience maximisation, driven by time scarcity and efficiency-oriented lifestyles [46,47]. The expansion of convenience-based markets and service infrastructure reduces the friction of consumption decisions, whether in terms of resources, time, and effort, while embedding higher throughput, with notable examples found in the literature [48–50]. Convenience thus operates as a stabilising behavioural logic that aligns individual decision-making with high-intensity production systems. Another mechanism is novelty seeking, whereby satisfaction derived from consumption is inherently temporary [51,52]. This leads to recurring cycles of desire, acquisition, and replacement, as previously purchased goods lose perceived value over time. This dynamic is reinforced by continuous product differentiation and marketing strategies that sustain perceptions of novelty and improvement.

Perceived obsolescence, shaped by technological change and market narratives, also serves as an underlying motivational mechanism of consumption. Products are frequently viewed as outdated or insufficient despite remaining functional. The interplay between intended functionality and perceived value becomes blurred by accelerated innovation cycles and design features that reinforce premature replacement and accelerate disposal. Finally, the normative reproduction of consumption practices, whereby high consumption is embedded in everyday social practices and customs such as reward, gifting, celebration (e.g., birthday, wedding, new job, graduation, new baby, etc.), and care practices, reinforces expectations of material provision.

Building on these insights, motivational mechanisms illustrate how hyperhedonistic cultural conditions institutionalise overconsumption, leading to high levels of waste generation. Rather than operating independently, they emerge through the interaction of hypercapitalist production systems and culturally embedded expectations, which together stabilise continuous material throughput. The following subsections synthesise sectoral evidence to reveal persistent lock-ins in Western economies.

4.2. The Food System Within High-Income Consumption Patterns

Food systems in high-income Western societies combine globalised production networks, industrial processing, advanced logistics, and culturally embedded norms of convenience and abundance. Food waste research has extensively examined behavioural aspects and consumer attitudes in terms of surplus redistribution, sharing platforms, and prevention of food waste at source [53–58]. The Food and Agriculture Organization (FAO) estimates that one-third of "*all food produced for human consumption is lost or wasted worldwide each year*" [59] (p. 92). In high-income countries, a disproportionately large share of this waste occurs at the consumer level, predominantly within households [56,60–63].

To examine the interaction between structural and cultural drivers of food waste generation more closely, Table 2 synthesises empirical patterns relevant to high-income Western food systems to illustrate systemic tendencies. Where Western-specific data are lacking, global indicators are included to illustrate systemic trends. The data provided are indicative in support of argumentation and do not represent an exhaustive list of structural and cultural dimensions.

Table 2. Structural dimensions (linked to hypercapitalism) and cultural dimensions (linked to hyperhedonism) in food systems of Western countries and their systemic lock-ins and trade-offs.

Structural (S) and Cultural (C) Dimensions	Metric	Empirical Pattern	Systemic Lock-Ins and Trade-Offs
S1: Trade expansion and dependence	Agricultural commodity exports and imports	Selected high-income Western economies (EU27, USA, and Canada) persistently possess large shares of global agricultural exports and imports (based on 1970–2020 data) [64,65].	Deep integration into global supply chains sustains year-round availability and externalises environmental pressures.
S2: Logistical infrastructure expansion	Refrigerated warehouse capacity [1]	Selected high-income Western economies * exhibit substantially higher refrigerated warehouse capacity (based on 2014–2018 data) [66].	Stabilises surplus production, long-distance trade, extended distribution, and high throughput, which reduces incentives to align supply with demand.
S3: Industrial processing intensity	Share of processed food in total imports [2]	~50% of total food imports in developed economies, compared to 30–35% in developing economies ** (based on 2000–2020 data); steady growth [67].	Reflects value-added commodification, packaging intensity, and industrial supply chain expansion.
S4: Convenience market expansion C1: Reliance on convenience goods	Packaged food and ready-meals market size and projected growth	Global packaged food market valued at USD 2.44 trillion in 2024 and projected to reach USD 4.61 trillion by 2034 (CAGR 6.6%), with North America holding the largest regional share, followed by Europe [68]. Global ready-meals market projected to grow from USD 236.8 billion in 2025 to USD 328.4 billion by 2030 (CAGR 6.76%), with North America identified as a leading market [69].	Normalises purchasing beyond immediate need, shorter product cycles, packaging reliance, and growth-oriented production, which reduces temporal discipline in consumption.
C2: Household consumption practices	Avoidable household food waste generation	Mainly driven by food not used in time (≈39%), over-preparation or serving excess (≈25%), and consumer preferences (≈22%) in the UK [70].	Reflects planning norms, portion expectations, date-label misunderstandings, and convenience-oriented practices [71].
C3: Consumer-level waste	Post-retail household food waste per capita	In 2017, global post-retail avoidable food waste averaged ≈47 kg/person/year, compared to ≈83 kg in Europe and ≈96 kg in USA/Canada/Oceania [72]; in 2022, 73% of UK household food waste (4.4 Mt) was edible, equivalent to ~11% of food purchases [70].	Persistent high disposal patterns aligned with abundance norms and purchasing beyond immediate need.
S5: Supply chain losses	Food Loss Index (from post-harvest to retail) [3]	In 2016, food losses averaged ~14% globally and ~15–16% in Europe and Northern America [66]. 2015–2023 index trend: By 2023, the index (2015 = 100 index for trend comparison) reached 102 globally, 101 in Europe, and 110.3 in Northern America, indicating stagnation globally and a marked increase in Northern America [73].	Structural inefficiencies embedded in production and distribution systems.
S6: Environmental externalities	Share of food loss and waste to greenhouse gas (GHG) emissions	Estimated at 8–10% of annual global GHG emissions and contribute to substantial biodiversity loss, using up almost a third of the world's agricultural land [74].	Demonstrates climate and ecological consequences of surplus-oriented food systems.

[1] Market Development Index—cubic metres per urban resident, proxy for cold-chain development relative to urban demand; [2] % of import value, USD based; [3] percentage of the physical quantity of food lost before retail relative to the amount produced, aggregated using economic weights so that higher-value commodities contribute proportionally more to the regional estimate; * includes the Netherlands, Denmark, Germany, Sweden, Switzerland, UK, USA, Canada; ** developed economies are defined according to the UNCTAD country classification and include Europe and developed Americas (USA and Canada).

Table 2 reveals that food waste in high-income Western societies emerges from the interaction between highly industrialised food supply chain systems and the culturally embedded

consumption practices. The environmental consequences of food waste are significant [55], and they are compounded by the social and economic paradox of widespread food waste in a world where billions of people experience food insecurity. Specifically, in 2022, approximately 1.05 billion tonnes of food were wasted, even as 783 million people experienced hunger and nearly one-third of the world's population faced food insecurity [74]. While a large fraction of food waste is technically preventable, it persists because the organisation of modern food systems encourages surplus production, over-purchasing, and disposal, not only individual carelessness. This is supported by the existing literature highlighting the role of retail practices, consumption norms, and systemic supply chain dynamics in shaping food waste patterns [53–58,71]. The expansion of cold-chain infrastructure, together with the growing share of processed and packaged foods and the rapid expansion of ready-meal markets, reflects an entrenched reliance on convenience, time saving, and value-added processing.

Particularly notable is the substantial share of avoidable waste in high-income contexts, where surplus purchasing, over-preparation, and planning failures contribute to edible food being discarded. These patterns indicate that downstream waste is not solely attributable to individual behaviour but is influenced by upstream system design, retail practices (e.g., bulk promotions and aesthetic standards), and norms of abundance, which have been shown to increase the likelihood of surplus purchasing and food discard.

These structural–cultural dynamics suggest that food waste in Western societies is driven by the high-throughput food systems. Consequently, effective waste reduction requires systemic interventions spanning production, retail governance, infrastructure design, and regulatory frameworks, rather than relying exclusively on behavioural change at the household level [75].

4.3. The Plastic System Within High-Income Consumption Patterns

A growing body of research is on plastic consumption, especially packaging and its links to consumer practices and waste generation [76–79]. Given the central role of consumers in waste generation and management issues, behavioural change is often emphasised in plastic reduction strategies [76]. However, current trajectories of plastic production and disposal suggest that behavioural approaches alone are insufficient. Substantial reductions would require the elimination or redesign of many forms of packaging and single-use plastics. Plastic waste also reflects what Hawkins encapsulated as the "three Ds" of distance, disposability, and denial [27] (p. 16). Plastic consumption often operates through an "out of sight, out of mind" logic, reinforced by global trade and waste export practices [80,81]. To situate these behavioural dimensions within broader production and trade systems, Table 3 presents empirical evidence on trends in plastic production, use, waste generation, recycling, trade, and climate impacts.

Table 3. Structural dimensions (linked to hypercapitalism) and cultural dimensions (linked to hyperhedonism) in plastic systems in Western countries, including production, use, waste generation, and trade.

Structural (S) and Cultural (C) Dimensions	Metric	Empirical Pattern	Systemic Lock-Ins and Trade-Offs
S1: Plastics production expansion and regional dominance	Regional share of global plastics production	Global plastics production increased from ca. 2 Mt in 1950 to 390–460 Mt by 2019–2021 [82,83]. In 2020, EU27 + 3 accounted for ca. 15% and North America for ca. 18% of global output, i.e., one-third of global primary plastics [84].	Long-term production growth reflects embedded growth imperatives and capital investment in large-scale petrochemical infrastructure. While regional shares in some high-income Western economies have stabilised or declined, these systems remain structurally dependent on high-throughput production and consumption patterns.

Table 3. *Cont.*

Structural (S) and Cultural (C) Dimensions	Metric	Empirical Pattern	Systemic Lock-Ins and Trade-Offs
S2: Consumption intensity C1: Reliance on plastic-based products	Plastic use per capita	Per capita use substantially higher in OECD countries than global average, particularly in North America and Europe (in 2019). Projected to rise by 2060 under current trajectories [82,83].	Higher consumption patterns normalise material-intensive lifestyles and increase downstream waste volumes.
S3: Packaging dominance in plastics applications	Share of packaging in total plastics use	Packaging accounts for ~44% of global plastics use; packaging consumption patterns: EU (ca. 39.1%) [84]; USA (ca. 44–45%) (data from 2017–2018 (USA) [85].	Short product lifecycles and single-use applications structurally embed rapid discard cycles and high waste turnover.
C2: Normalisation of single-use convenience packaging	Packaging intensity in FMCGs	Packaging represents the dominant plastics application across consumer sectors, particularly in food, beverage, and retail systems [84].	Reinforces cultural expectations of hygiene, convenience, portioning, and disposal, aligning consumer norms with single-use formats.
S4: Plastic waste accumulation	Historic plastic production and waste generation	1950–2017: Ca. 9.2 billion tonnes, of which ca. 7 billion tonnes became waste; around three-quarters was landfilled, incinerated, or mismanaged [83]. 2019: 49% of plastic waste was landfilled and 22% mismanaged globally. Projections: Mismanaged waste to reach ca. 153 Mt by 2060, with landfill remaining dominant [82]. Note: OECD countries show lower mismanagement rates but substantially higher per capita waste generation [82].	Material persistence combined with linear disposal pathways generates legacy pollution and environmental impacts.
C3: Disposal-oriented consumption patterns	High per capita plastic waste generation	OECD countries exhibit substantially higher per capita plastic waste generation than global averages [82].	Higher disposal rates reflect embedded norms of disposal over repair and disposability as routine practice.
S5: Trade externalisation in plastic waste	International plastic waste trade and exports for recycling	Globally: <10% recycled [82,83]; OECD Europe higher but insufficient to offset rising production and consumption [82]. OECD countries are historically major exporters of plastic waste for recycling; e.g., trade balance (2020): the European plastics industry recorded a positive trade balance of EUR 15.8 billion, with the USA, UK, and China among its main trade partners [86]. Policy restrictions (e.g., import bans) shift flows geographically without significantly reducing global mismanaged waste [82].	Recycling capacity expands more slowly than production, creating persistent linear material flows, undermining circular transition effectiveness, and externalising waste management burdens. Plastic waste trade reduces domestic visibility of disposal pathways and delays systemic reduction of production volumes.
S7: Environmental impacts	Lifecycle GHG emissions from plastics	Baseline: Emissions estimated at ~1.7 (2015 [83])–1.8 (2019 [82]) $GtCO_2e$. Projections: Emissions to more than double to ~4.3 $GtCO_2e$ by 2060 [82], with alternative estimates reaching ~6.5 $GtCO_2e$ by 2050 (15–19% of the remaining global carbon budget) [83].	Links fossil-based production expansion directly to climate targets, creating tension between decarbonisation commitments and continued petrochemical growth.

Table 3 demonstrates the rapid and sustained expansion of plastic-intensive production systems, with high-income regions accounting for a substantial share of both production

and per capita consumption. Packaging—predominantly short-lived—constitutes the largest application, directly linking everyday consumption practices to high material throughput and rapid waste generation. An increased plastic production throughput translates directly into an increased waste accumulation, especially as recycling rates remain low relative to production volumes. Trade in plastic waste further illustrates the geographical redistribution of environmental burdens to lower-income regions, echoing the "distance" dynamic identified by [27]. Plastics are increasingly linked to long-term climate pressures due to the substantial GHG emissions that are projected to rise significantly under business-as-usual scenarios. Therefore, the plastics system represents not only a waste challenge but also a carbon-intensive growth trajectory embedded within high-consumption hypercapitalist economies.

Table 3 suggests that while behavioural change remains relevant, addressing production growth, packaging dominance, and structural market incentives is crucial [87]. The use of substitution strategies (biobased, biodegradable, or edible plastics) as technological solutions is likely to continue normalising the hypercapitalist growth imperatives and disposability practices, reinforcing cultural lock-ins and maintaining the reliance on single-use components [88]. Moreover, such strategies risk maintaining high throughput while shifting material composition rather than reducing overall demand.

4.4. The Textiles System Within High-Income Consumption Patterns

Fast fashion and premature disposal are not merely behavioural phenomena but are embedded in nested production–consumption systems shaped by growth-oriented economic paradigms while simultaneously reinforced by hedonic consumption practices and well-being narratives that normalise high material throughput [89–91]. The textile industry has long been associated with substantial resource use and pollution, but these pressures have intensified under the fast fashion epidemic. In Europe, for example, it is estimated that clothing is often discarded while still retaining at least 70% of its useful life [91], reflecting shortened product lifespans and accelerated turnover cycles.

To examine these dynamics more closely, Table 4 synthesises empirical evidence on textile production, trade, consumption growth, supply chain restructuring, environmental impacts, utilisation rates, and recycling performance.

Table 4. Structural dimensions (linked to hypercapitalism) and cultural dimensions (linked to hyper-hedonism) in textile systems of Western countries, including production, consumption, environmental impacts, and circularity.

Structural (S) and Cultural (C) Dimensions	Metric	Empirical Pattern	Systemic Lock-Ins and Trade-Offs
S1: Overproduction and inventory expansion	Excess garment stock and inventory accumulation	Estimated 2.5–5 billion excess garments produced in 2023 (USD 70–140 billion value). Luxury inventories increased by 2% in the first half of 2024 compared to the same period in 2023 [92].	Indicates systemic overproduction and a surplus demand, which becomes normalised within retail models.
S2: Retail growth	Non-luxury fashion retail sales growth	In the US, non-luxury fashion declined by 1% in 2023 before returning to moderate growth of 2–4% in 2024–2025 [92].	Indicates that growth remains the dominant strategic objective, reinforcing volume-based production models.
S3: Production reconfiguration and nearshoring investment	Share of apparel foreign direct investment (FDI) directed to nearshoring	Increased share of apparel FDI toward nearshoring manufacturing by 20% points in the USA and 8% points in Europe over 2019–2024 [92].	Supply chain restructuring improves speed to market and responsiveness, enabling accelerated production cycles rather than reducing volumes.

Table 4. *Cont.*

Structural (S) and Cultural (C) Dimensions	Metric	Empirical Pattern	Systemic Lock-Ins and Trade-Offs
S4: High externalised environmental impacts	Resource consumption and GHG emissions	Textile sector accounts for ca. 215 trillion litres of water consumed annually and 2–8% of global GHG emissions; GHG projected to rise to ca. 2.7 billion tonnes CO_2e annually by 2030, under business as usual [93]. In the EU, GHG is estimated at 270 kg CO_2e per person; 75% of GHG emissions and roughly 80% of primary raw material extraction occurred outside Europe [94].	Demonstrates resource- and emissions-intensive production embedded within current fashion systems, of which impacts are geographically displaced, reducing domestic visibility and weakening accountability mechanisms.
S5: High material throughput per capita	Textile consumption per capita and raw material input	15 kg textile consumption per capita requiring ca. 391 kg primary raw materials across value chain [94].	Highlights disproportionate upstream resource extraction relative to final consumption weight, embedding high material intensity in apparel systems.
C1: Declining garment utilisation	Clothing utilisation rate (wears per garment) [1]	Global clothing utilisation declined by ca. 36%; lower utilisation rate in USA and EU than global average [95].	Short garment lifespans accelerate replacement cycles and normalise frequent purchasing.
C2: Underutilised consumer garment stock	Unused garment stock [2] and repair participation rate [3] (UK)	In 2022, UK households own on average 56.9 home textile items, of which 21% were unused in the previous year [96].	Reflects purchasing beyond immediate need and symbolic or aspirational consumption patterns.
C3: Garment repair practices	Garment repair participation rate [3] (UK)	Ca. 7% of UK respondents reported repair activity [96].	Indicates cultural preference for replacement over repair.
S6: Limited circular recovery	Fibre-to-fibre textile recycling rate	Less than 1% of discarded textiles recycled into new fibres [94].	Recycling systems remain technologically and economically constrained, reinforcing linear production and disposal pathways.

[1] Indicates the average number of wears per garment before disposal and expressed in % change over time; [2] % of items unused; [3] % of respondents reporting repair.

Table 4 depicts a textile system characterised by structural overproduction and accelerating turnover. The large volume of excess inventory reflects a persistent misalignment between production volumes and effective consumer absorption, where supply systematically exceeds actual demand, resulting in discounting, stock accumulation, and eventually waste. Concurrently, declining garment utilisation, geographically externalised impacts, and low fibre-to-fibre recycling reinforce a linear, high-throughput model of production and disposal. These patterns suggest that textile waste cannot be reduced to individual consumer irresponsibility. While behavioural interventions, such as encouraging donation, repair, or recycling clothing, may contribute to improvements, they do not address these structural drivers of overproduction. Without deliberate reductions in production volumes and systemic efforts to extend garment lifetimes, material throughput in the textile system is likely to remain high. In this context, hypercapitalist growth imperatives and hyperhedonistic consumption norms mutually reinforce shortened lifecycles and frequent purchasing, stabilising the dynamics that generate textile waste.

4.5. The EEE System Within High-Income Consumption Patterns

Electrical and electronic equipment (EEE) represents one of the fastest-growing material streams globally. E-waste generation is rapidly growing since digitalisation, device turnover, and consumer demand for upgraded technologies remain strong.

The dominance of small and fast-moving electronic products reflects accelerated turnover and the normalisation of disposable digital goods markets [97]. Rapid innovation

cycles and frequent upgrading contribute to shortened use phases, increasing material throughput and waste volumes [97]. Many electronic devices and smartphones are designed with planned obsolescence and marketed to create a perceived need for constant upgrades, promoting premature disposal of functioning devices. This overconsumption depletes precious metals, exploits vulnerable communities in economically disadvantaged regions, and contributes to conflicts and harm [80]. The pervasive issue of "planned obsolescence", where appliances and devices are intentionally designed and programmed to degrade and fail [37], is often hidden from consumers who rely heavily on technology for their daily activities [98].

Initiatives like the "right to repair" movement [31,99] and policies addressing planned obsolescence, such as the EU's recent law mandating a single type of charger by 2024, signal a process [100]. Some businesses now view sustainability as both ethical and financially beneficial. However, many consumers continue to prioritise cheap and convenient options, emphasising the persistent challenge of shifting consumption habits. To examine these dynamics empirically, Table 5 presents trends in EEE placement on the market, waste generation, recycling performance, and transboundary flows.

Table 5. Structural dimensions (linked to hypercapitalism) and cultural dimensions (linked to hyperhedonism) in EEE systems of Western countries, including placement, e-waste generation, recycling, and trade.

Structural (S) and Cultural (C) Dimensions	Metric	Empirical Pattern	Systemic Lock-Ins and Trade-Offs
S1: Expansion of EEE market volumes	EEE placed on the market (POM)	Global EEE POM increased by ca. 55%, from 62 Mt (2010) to 96 Mt (2022); projected to reach 120 Mt by 2030 [97]. Europe and the Americas account for ca. 38–40% (2019) of global EEE demand [101]. EU placed 14.4 Mt (2023) on the market [102].	Reflects persistent volume growth in electronics markets, reinforcing production expansion and material throughput.
S2: Rising e-waste generation	Total and per capita e-waste generation	Global e-waste reached 54 Mt in 2019 [101] and 62 Mt in 2022 (~7.8 kg per capita), projected to reach 82 Mt by 2030 [97]. Per capita generation is substantially higher in Western countries: Europe 17.6 kg; USA 21 kg; UK 24 kg; Norway 27 kg; Switzerland 23 kg; France 22 kg [97].	High consumption intensity combined with short product lifecycles produces structurally increasing waste streams.
C1: Rapid turnover of small electronics	Share of small equipment and IT devices in total e-waste	Small equipment (20.4 Mt) and small IT and telecommunication equipment (4.9 Mt) account for ca. 40% of total global e-waste (≈62 Mt). Rapid expansion of small format, short-lifecycle electronics, e.g., e-cigarettes rapidly expanding (844 million units sold in 2022) [97].	Normalisation of frequent upgrading and disposable small electronics accelerates product obsolescence and fragmentation of waste streams.
C2: Embedded upgrade and innovation cycle	Market-driven replacement dynamics (implied by POM growth and small-device waste share)	Persistent increase in EEE placed on market alongside high share of short-lifecycle devices (2010–2022) [97].	Cultural normalisation of upgrading, novelty seeking, and perceived technological obsolescence reinforces shortened use phases.

Table 5. *Cont.*

Structural (S) and Cultural (C) Dimensions	Metric	Empirical Pattern	Systemic Lock-Ins and Trade-Offs
S3: Recycling capacity lagging behind waste growth	Formal e-waste collection and recycling rate	Global e-waste increased from 34 Mt in 2010 to 62 Mt in 2022, while formally recycled volumes rose from 8 Mt to 13.8 Mt; the recycling rate remained static at ca. 20–23% [97,101]. E-waste generation is rising by ca. 2.3 Mt/year, compared to ca. 0.5 Mt/year growth in formal recycling; under business as usual, projected stagnation by 2030 [97]. In 2022, global average 22.3%; Europe 42.8% (highest globally); and Americas ~30% [97]. In 2023, EU collection rate averaged 37.5%, equivalent to 11.6 kg per capita [102].	Recovery systems expand more slowly than waste generation, reinforcing linear extraction–production–disposal dynamics. Even in high-performing regions, significant shares remain uncollected or informally treated, limiting circular transition effectiveness.
S5: Trade externalisation in e-waste	E-waste trade and exports for recycling	5.1 Mt shipped across borders, ca. 65% moved from high-income to middle- and low-income countries through uncontrolled or undocumented flows [97]. High-income regions are typically net exporters, while lower-income regions are net importers of used or near end-of-life equipment [101].	Externalises environmental and health burdens, reducing domestic visibility of disposal impacts and weakening accountability.

Table 5 shows an expanding EEE system characterised by rising placement volumes and accelerating waste generation. High-income regions account for a disproportionate share of demand, while production and environmental burdens are geographically displaced [101], reflecting globalised supply chains and externalisation of manufacturing impacts. At the same time, e-waste generation is increasing substantially faster than formal recycling capacity (five times faster) [97], indicating a structural mismatch between market expansion and material recovery systems. Although Europe and North America report higher collection rates than the global average, recovery remains well below total generation levels, and transboundary waste flows continue to shift end-of-life burdens to lower-income regions.

These patterns suggest that e-waste growth is not reducible to individual consumer behaviour but is embedded in a hypercapitalistic growth model that prioritises continual device replacement, innovation-driven turnover, and globalised production efficiencies. Concurrently, hyperhedonistic consumption norms (normalising frequent upgrading, novelty seeking, and short use phases) reinforce accelerated replacement cycles. These dynamics, while stabilising high material throughput, outpace circular e-waste management practices.

Under such conditions, waste prevention is required to not only address increased e-waste generation but also to re-evaluate consumption, intensity, device longevity, and purchasing norms [103]. To this end, a minimalist ethic centred on sufficiency and moderated wants offers a potential counter-response to growth-dependent and diminished ownership of consumption choices. This mindset shift represents an essential step towards empowering consumers to make sustainable decisions.

4.6. A Unifying Analytical Framework

The empirical evidence presented in Tables 1–5 reveals consistent patterns linking structural drivers (e.g., production expansion, globalised supply chains, and shortened product lifecycles) with cultural dynamics (e.g., convenience, status signalling, and novelty seeking). Waste generation is not an unintended by-product but rather a systemic outcome

of the interaction between hypercapitalist production structures and hyperhedonistic cultural norms. These dynamics expand and normalise consumption by transforming socially constructed wants into perceived necessities.

These findings form the basis of an integrated analytical framework (Figure 1), which conceptualises waste generation as the outcome of reinforcing structural and cultural dynamics within high-consumption systems.

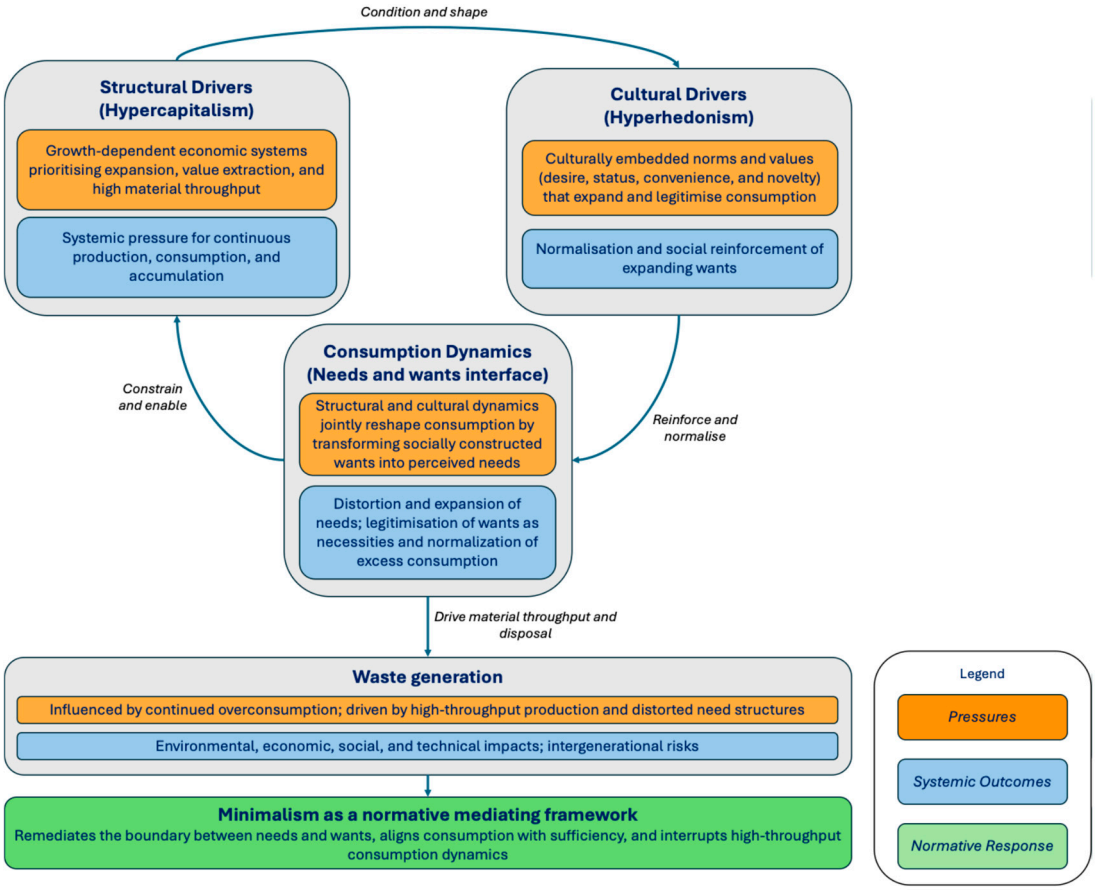

Figure 1. An integrated analytical framework illustrating the interaction between structural (hypercapitalist production systems) and cultural (hyperhedonistic consumption norms) drivers in shaping consumption dynamics, whereby wants are transformed into perceived necessities, leading to overconsumption and systemic waste generation. The framework highlights minimalism as a normative response mechanism for remediating consumption.

As illustrated in Figure 1, the structural–cultural–consumption dynamics operate as a reinforcing feedback loop, where structural pressures (e.g., growth imperatives and market expansion) shape cultural norms (e.g., convenience and status-based consumption), which, in turn, normalise and legitimise increased consumption. These, in turn, stabilise and institutionalise the structural conditions that generate waste. Addressing waste, therefore, requires not only end-of-pipe technical, regulatory, or behavioural interventions but a normative reconfiguration of production and consumption itself.

5. Needs, Wants, and the Quest for an Ethic of Minimalism

Building on the patterns identified in the preceding synthesis, this study advances the literature by developing a minimalism-based ethical framework for waste prevention that explicitly integrates the interplay between structural drivers (hypercapitalism: growth-dependent, high-throughput economic regime) and cultural drivers (hyperhedonism: culturally institutionalised expansion of wants) of overconsumption.

While existing work on sufficiency and degrowth has highlighted the need to reduce material throughput, these approaches have often been examined either at the macroeconomic level or through lifestyle-oriented perspectives. In contrast, this study provides a systemic and interdisciplinary synthesis that connects production–consumption dynamics with the ethical mediation of needs and wants. If waste generation is driven by these dynamics, then effective waste prevention requires an ethical framework capable of remediating needs and wants. Minimalism is therefore viewed not as an individual lifestyle choice but as a normative mechanism that re-establishes sufficiency by critically interrogating and constraining the expansion of wants.

A key dynamic within hypercapitalist systems of overconsumption is the continual expansion and redefinition of what counts as a "need". Through marketing, design innovation, and competitive market logics, products and services are frequently framed as essential to well-being, status, or participation in social life. Over time, this blurring of needs and wants contributes to increased material demand and normalises high levels of consumption. As [104] notes (p. 286), "*in the face of escalating consumption, debt, and environmental degradation, minimalists' calls for rethinking "needs" is timely*". Re-evaluating needs requires exploring the intricate interrelationship between needs, wants (desires), values, and material throughput within broader socio-economic structures. This expansion of needs is closely intertwined with hyperhedonistic cultural norms that equate well-being with novelty, abundance, and continuous acquisition.

To that end, at the policy level, waste prevention has long been recognised as a priority, notably through the Waste Hierarchy, embedded in the EU Waste Framework Directive 2008. However, implementation has placed attention downstream on management rather than upstream reductions in material throughput, potentially reinforcing rather than challenging overconsumption [105]. As [29] (p. 3) captures: "*waste generation is a huge business and numerous stakeholders are not interested to reduce waste. More sophisticated incentives are required to decouple economic growth from waste generation*". Moreover, the concept of "waste prevention" itself has suffered from limited conceptual clarity and inconsistent interpretation [91]. Following [32] (p. 12), this study defines "prevention" as actions taken "*before products or materials are identified or recognized as waste*", thereby shifting attention upstream to reductions in material demand and throughput.

While extensive research addresses efficiency, product design, production processes, and behavioural interventions, comparatively little attention has been given to minimisation, i.e., reducing overall material demand, through a reconceptualisation of what constitutes enough. Building on this gap, the following sections lay the groundwork for an ethics of minimalism, centred on the ethical mediation of wants. Such an ethic seeks to challenge prevailing norms surrounding production, consumption, and disposal while acknowledging the structural dynamics that shape them.

5.1. Two Theories of Needs

The concept of minimalism emerges as a guiding principle, rooted in the distinction between needs and wants. Amongst the most influential theories of needs are Maslow's hierarchy and Max-Neef's theory of fundamental needs.

Maslow's seminal work (1943: 370) notes that humans are "*perpetually wanting animal[s]*"; their motivation is structured in hierarchical levels, ranging from physiological needs to self-actualisation [106]. All levels are described as "needs", encompassing necessities like food and water and higher-order aspirations, formulated in his world-famous "*hierarchy of needs*", shown in Figure 2. In the hierarchy, there are five main categories, ranging from the most fundamental (physiological) to self-actualisation, which is the most advanced.

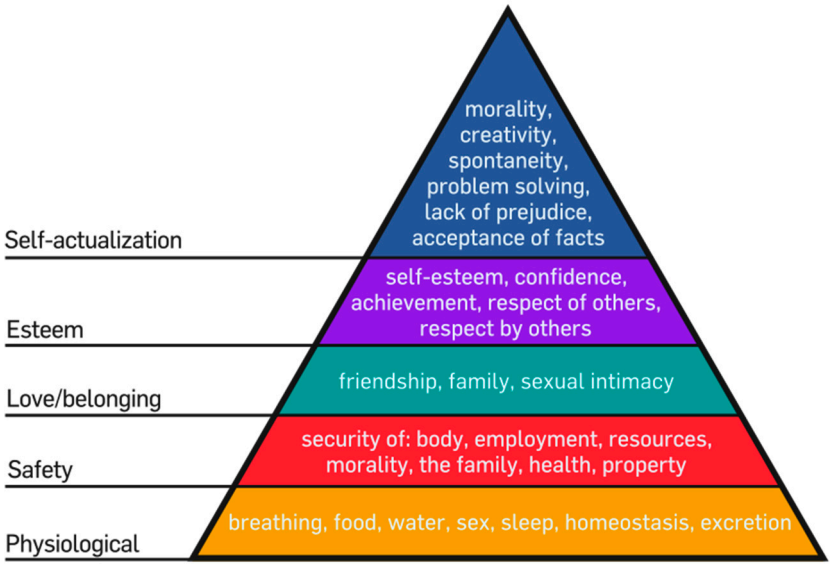

Figure 2. Maslow's hierarchy of needs.

While analytically influential, Maslow's hierarchy risks expanding "needs", presumably in the sense of acquiring materials, as specified in the physiological and safety states. Although only the physiological and safety levels explicitly reference material conditions, in the current consumerist society model, the hierarchy could be misinterpreted as allowing higher-order needs such as esteem and self-actualisation to be pursued through material acquisition. In socio-cultural contexts where identity, status, social belonging, and everyday life are increasingly expressed through consumption [30–32,35,36], the self-actualisation state can become closely tied to goods and services. Under such conditions, the boundary between psychological needs and consumption-driven wants becomes blurred. However, empirical research challenges the assumption that material consumption enhances well-being. Lloyd and Pennington (2020) posit that voluntary "simplicity" can lead to higher levels of happiness and life satisfaction [5].

Max-Neef's theory (1992), by contrast, identifies nine fundamental and non-hierarchical "needs"—subsistence, protection, affection, understanding, participation, leisure, creation, identity, freedom—arguing that these are universal across cultures [107]. Crucially, he distinguished needs and "satisfiers", e.g., food is not itself the need but a satisfier of subsistence. This distinction is analytically important because satisfiers can vary historically and culturally without altering the underlying need.

Both theories provide valuable insights and could, in principle, be linked to ecosystem services. Physiological and safety needs in Maslow's hierarchy and subsistence and protection in Max-Neef's framework correspond closely to provisioning and supporting services, while higher-order needs may be supported by regulating and cultural services. Such a linkage would underscore the dependence of human need fulfilment on ecological systems. However, this connection remains underdeveloped in the literature, and the scope and content of higher-order needs continue to be debated. Considering this, there are also two chief criticisms:

(1) Either theory makes a sufficiently strict distinction between needs and wants, in the context of contemporary hyperconsumerist societies.
(2) In systems characterised by hypercapitalistic growth imperatives and hyperhedonistic cultural norms, the notion of "need" is used to entrench patterns of material acquisition and consumption.

A more precise conceptual boundary is therefore needed.

5.2. A New Minimalist Theory of Needs and Wants

To align with a minimalist spirit, akin to Ockham's famous razor—to strip away anything superfluous—an environmental ethic must focus on what is strictly necessary. The argument here is for three main categories of human needs that all take "need" in a stricter meaning, as necessary for the following:

(1) Survival needs: conditions necessary for biological survival and growth (e.g., food, water, shelter, healthcare, medical care, basic clothing, and safety).
(2) Well-being needs: conditions necessary for psychological and social functioning, as well as the development of identity, competence, and meaningful participation in social life (e.g., safety and security beyond shelter, freedom, self-determination, and choice; family and education; secure employment; and sociality, including love and relationships).
(3) Contextual needs: instrumentally necessary means, within specific socio-economic settings, for fulfilling survival and well-being needs (e.g., transport to work, electrical and electronic equipment for household management, communication, and leisure); depends on circumstances (geographical, financial, etc.).

Contextual needs recognise that some goods may be necessary within a given institutional context without being intrinsically required for survival. This aligns with approaches that distinguish objective human needs from subjective well-being, where external contextual conditions enabling their fulfilment are described in terms of social, human, built, and natural capital [1,108,109]. Quality of life is then a function of both the extent to which needs are met and individuals' satisfaction with that level. As a result, contextual needs derive their necessity from survival and well-being needs but vary across individuals and societies. Wants, by contrast, are expressions of preference (e.g., type of food eaten; organic quinoa bowl vs. cheeseburger vs. luxury dining), personal and living status signalling (e.g., alone vs. family vs. friends or a partner; apartment vs. detached house vs. mansion), aesthetic taste (e.g., functional goods vs. luxury premium goods), and convenience and vary based on desires, values, and choices, both past and present. While emotionally mediated and culturally amplified due to entrenched values, circumstances, beliefs, thoughts, and reflections, they are also legitimate as expressions of individuality. This highlights that they are not strictly necessary for survival or well-being. The distinction between needs and wants is inherently context-dependent and culturally mediated, shaped by socio-economic conditions, infrastructure, social norms, and individual circumstances. It is not intended here as a fixed or universal classification but as a reflective tool for examining consumption in relation to sufficiency and waste generation. Rather than treating needs and wants as binary categories, this study conceptualises consumption along a continuum between sufficiency-oriented practices (meeting survival and well-being needs) and excess-oriented practices (driven by status signalling, convenience, or novelty seeking). Within this continuum, the same category of goods may function differently depending on context. For example, food acts as a satisfier of survival needs, yet variations in type, quantity, and provisioning practices may reflect either sufficiency or the expansion of wants. This perspective avoids rigid classifications (e.g., "need food" versus "want food") and instead emphasises how consumption patterns shift in relation to underlying motivations and system conditions.

Hypercapitalist and hyperhedonistic systems systematically conflate wants with needs, particularly where market expansion depends on normalising upgrade cycles, normalising novelty seeking, upgrade cycles, and overconsumption. For example, a mobile phone is arguably necessary for social and professional functioning in contemporary society, but the perceived "need" for a new one every 6 to 12 months, or a particular brand, is a socially manufactured want. Similarly, many goods, from fast fashion to luxury holidays,

are marketed as essential but primarily serve to expand consumption rather than meet fundamental needs.

Some products not only fail to fulfil basic needs but can also be damaging to them. Smoking, for instance, may be associated with autonomy or freedom, identity expression, rebelliousness, and self-determination, yet it also illustrates how such practices, particularly shaped by addiction and social norms, can undermine health and finances while generating environmental externalities (e.g., cigarette butts littered in our environmental compartments), which illustrates the broader ecological impact of manufactured wants. In this light, tackling the waste crisis is not just about finding ways to make products more durable or circular but about reconceptualising societal needs and identifying ways to consume better and less. This would, in turn, help identify products, services, and activities that may undermine health, well-being, or sustainability, especially where they are driven by wants instead of the fulfilment of fundamental needs.

One prevailing argument is the notion that people are entitled to, and will always be entitled to, their wants, which are inherently varied, diverse, and multicultural. It is widely accepted that no two people's constellations of needs and wants are going to be the same. One may feel like they need to go on a few holidays per year for their mental and social well-being, while another never travels; one may be able to give up eating meat easily, while another might not; and one may be dependent on a car and other expensive items, while some can do with very little indeed. Notwithstanding, empirical studies suggest that individuals practising voluntary detachment from materials report higher levels of happiness and life satisfaction, achieved through autonomy, competence, and reduced material dependence [108,110,111]. Therefore, achieving a reconceptualisation of needs requires a reflection on what individuals truly need to survive and be happy, balanced against ecological and social constraints.

This leads to the concept of "consumption corridors", defining minimum standards of material access necessary for a dignified life and maximum standards beyond which additional consumption diminishes others' ability to meet their needs [1]. Encouraging people to reflect upon what they need to be well and happy, and not just what is forced upon them, is critical for instigating behavioural change towards minimalist mediation. The recurring question—"Do I really need this?"—can help reassess priorities, values, and material throughput while supporting personal well-being, ecological integrity, and social justice.

5.3. Linking Theory to a New Framework

Building on the categories of human needs—survival, well-being, and contextual—and the role of wants in mediating material use, we propose a minimalist ethics framework to guide sustainable consumption (Figure 3).

In this framework, needs are filtered on the premise that individuals should own and consume what sufficiently supports their survival, well-being, and meaningful participation in their socio-economic context without creating unnecessary dependency, identity distortion, and eventually waste. Motivations entice individuals to consider the values linked to their needs as influenced by their personal values. The decision can then be based on the interplay of intended functionality and perceived material, component, and product value, used in systems thinking approaches to determine the necessity of goods in the open market. The indicative prompts are only added as triggers to help individuals initiate the process of reflection, and other considerations should be used to support their decision regarding the acquisition of goods.

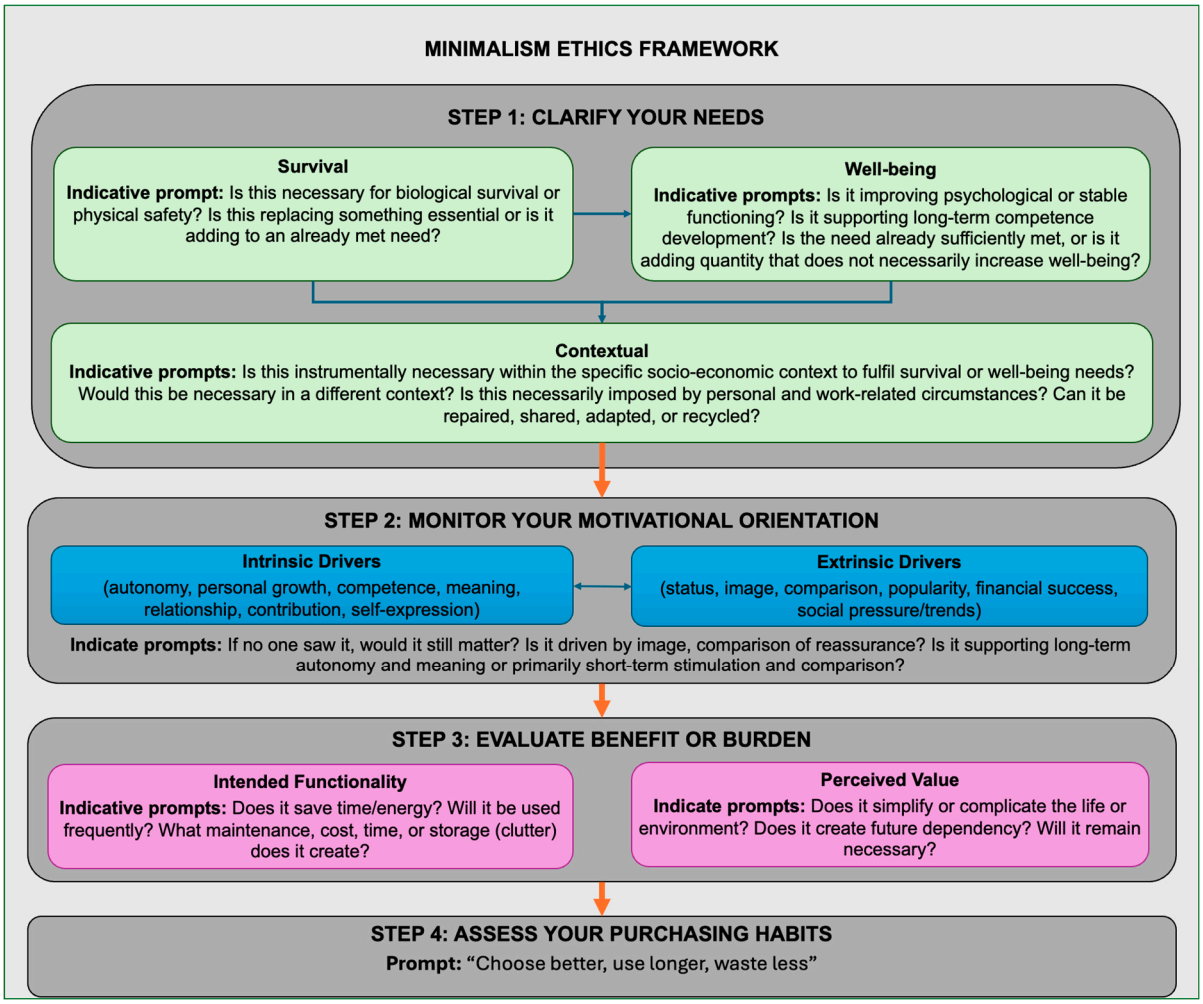

Figure 3. A conceptual framework for operationalising minimalism as an ethical approach to waste prevention and reduction. Blue arrows represent internal relationships within the framework, whereas orange arrows indicate the sequence of process steps.

Minimalist mediation operates at the level at which a need is reliably met without creating dependency, prompting critical reflection on wants and guiding consumption toward fulfilling needs without generating waste. By embedding this reflection, the minimalism framework encourages conscious decision-making, optimising consumption while reducing waste. It makes abstract ethical considerations actionable in everyday consumption. The framework is not intended to prescribe or constrain individual choices but to function as a reflective and heuristic tool to support awareness of consumption practices, recognising that motivations, cultural contexts, and personal values influence how needs and wants are interpreted and acted upon. It is important to note that individuals may still rationalise want-based consumption, where social norms, identity considerations, or structural constraints reinforce such a decision.

6. Towards an Ethic of Minimalism: Systemic Actions for Multidimensional Governance

Unsustainable production and consumption and associated waste generation and (mis)management underpin the interconnected crisis of climate change, biodiversity loss, and pollution [93]. Transforming material-intensive value chains to address these challenges requires not only resource efficiency and process optimisation but a reorientation of the underlying norms that govern consumption itself. In this regard, a minimalism

ethics that prioritises the reliable satisfaction of essential needs while reducing unnecessary and resource-intensive wants reframes well-being away from overconsumption and towards durability, stability, and long-term value retention. This reorientation reduces production and waste upstream and downstream of the value chain, respectively, while challenging the current economic systems structured around hypercapitalistic imperatives of overconsumption and associated hyperhedonistic cultural forces.

Achieving such a systemic impact requires moving toward coordinated interventions across value chains. To this end, the complex value optimisation for resource recovery (CVORR) framework provides a systemic lens for translating minimalism into a multidimensional governance strategy [75]. CVORR conceptualises sustainability as the optimisation of value recovery across four interconnected domains: environmental, economic, technical/technological, and social, embedded within political and cultural contexts. While used to evaluate the circularity potential in material, component, and product value chains and to identify intervention points, the framework can also function as a systemic analytical lens [75]. Herein, CVORR is applied to examine how a minimalism ethic can contribute to reorienting consumption patterns and reducing waste.

Within this context, minimalism is not confined to individual behavioural change but constitutes a cross-cutting intervention principle. Its systemic operationalisation requires coordinated environmental, technical, infrastructural, policy, economic, and communication measures that collectively reduce material throughput, extend product lifecycles, and realign incentives with sufficiency-oriented outcomes. The following subsections outline key actions across ecological, economic, technological, regulatory, and cultural dimensions.

6.1. Ecological Rebalancing: Reducing Throughput and Restoring Regenerative Capacity

Regenerative transformation recognises ecological limits as structural boundaries within which economic activity must operate [112]. In this context, minimalism can support a shift towards sufficiency over continued accumulation. By reducing consumption and promoting short-lived, functional, and high-value materials, components, and products rather than short-lived or energy-intensive ones, regenerative capacity can be restored [20].

In terms of action, this implies setting material throughput reduction targets in high-consumption economies and integrating ecosystem conservation measures into sustainability strategies. This includes expanding protected areas, safeguarding biodiversity hotspots, and investing in reforestation [113]. In addition, protecting and restoring biodiversity- and carbon-rich ecosystems through land-use regulation, reducing biomass overexploitation, and maintaining ecological regeneration capacity are additional mechanisms for achieving long-term resilience [20,113]. Simultaneously, renewable energy deployment and sustainable agricultural practices [113] need to be prioritised to shift toward low-impact diets and reduced food loss and waste to relieve pressure on land, water, and ecosystems while maintaining nutritional adequacy [20]. Eliminating hazardous substances in product design is equally critical to prevent toxic leakage across production and end-of-life stages [101], thereby safeguarding ecosystem integrity within circular systems.

Crucially, ecological value optimisation must address trade-related externalisation and reduce environmental pressures associated with imports of resource-intensive products manufactured in low-income systems and the export of waste [20]. Operationally, this transition requires investments in safe disposal infrastructure [114] and the development of measurable waste performance metrics [115].

6.2. Economic Realignment: Incentivising Sufficiency Over Volume Growth

Empirical applications of the CVORR framework across material, component, and product value chains demonstrate that prevailing economic systems systematically favour

linear throughput [114,116–118]. This is manifested via short product lifespans, rapid capital turnover, and persistent structural lock-ins. However, these barriers to circularity are not primarily technical but embedded in institutional arrangements, dominant value propositions, and power asymmetries that govern how resources are priced, exchanged, and valorised [114]. Under such conditions, profitability remains closely coupled to material expansion, even when environmental and social externalities are formally acknowledged.

Within this context, proposals for responsible and ethical capitalism, often framed around the Triple Bottom Line (TBL) framework, seek to integrate economic, social, and environmental considerations into corporate decision-making. However, growth persists under "green" and "sustainable" rebranding, allowing capital accumulation [18]. Ref. [39], therefore, advocates for a fundamental restructuring alongside related concepts like degrowth [11], which call for embedding an ethics of minimalism within existing socio-economic systems. Such an approach could function as a corrective mechanism by constraining hypercapitalist dynamics and reorienting incentives towards sufficiency.

In practical terms, this requires correcting distorted price signals that favour virgin material and short production cycles [20] and the externalisation of environmental and social costs. Instruments such as carbon pricing, material taxation, and extended producer responsibility schemes can help to partially rebalance relative cost structures. Similarly, reforming or redirecting public subsidies that support material-intensive production is also necessary to remove perverse incentives embedded in existing fiscal systems that reinforce linear throughput. Beyond price correction, private capital must be mobilised through investment criteria, risk-adjusted lending, and capital allocation strategies that reward durability, repairability, resource efficiency, and lifecycle responsibility [20]. Financial instruments that reduce investment risk, such as public–private guarantees, dedicated circular investment plans, and venture capital support, can further enable business models based on product-as-a-service, leasing, repair, and sharing systems [101]. In parallel, economic modelling tools that quantify the cost of inaction, ecosystem degradation and loss of provisioning services, and the fiscal burdens of waste pollution can render environmental damage economically visible [115]. This strengthens the need for investment in durability, reuse systems, and improved waste management infrastructure.

By embedding lifecycle responsibility and reducing financial risk for circular enterprises, the above action-oriented mechanisms begin to decouple value creation from material expansion and align revenue generation with long-term value retention.

6.3. Technological Redesign: Durability, Repairability, and Circular Infrastructure

Technological systems shape material flows through value chains and influence the extent to which material value is retained [75]. Empirical evidence (Sections 3 and 4) shows that material expansion and circularity transitions are constrained by infrastructure gaps, limited technological maturity, and underdeveloped secondary material markets alongside the continued prioritisation of virgin material processing. A minimalism-driven technological strategy, therefore, requires upstream and downstream redesign.

Upstream, product design must prioritise durability, repairability, and compatibility with reuse and recycling and embed design-for-reuse principles into standards and manufacturing practices [94,115]. Downstream, investments are needed to expand reliable collection coverage, improve material recovery, address infrastructure gaps and support the stabilisation and growth of secondary material markets. Simultaneously, strengthening traceability across value chains, alongside investment in refurbishment and remanufacturing infrastructure, is essential to retain material value locally. Importantly, innovation pathways must move away from end-of-pipe optimisation towards system-level redesign. Technological–social experimentation spaces, such as Living Labs, should be prioritised.

These enable reuse systems, packaging redesign, and waste reduction strategies to be co-developed, tested, and refined in alignment with user practices before being scaled out.

6.4. Regulatory Transformation: Embedding Prevention and Responsibility

Regulatory systems influence the production and consumption dynamics significantly. Existing frameworks often prioritise waste management over waste prevention and allow for the externalisation of environmental costs. In contexts where consumption is normalised through marketing logics [119], hedonic value [56], and systemic overproduction [57], policy inertia and greenwashing become structural features rather than isolated failures. Regulatory transformation, therefore, requires sustained political commitments and accountability.

In practice, this transformation can be instrumented across three areas of action:

1. Establish waste prevention as the new norm: This requires binding targets for waste prevention, material reduction, and improved resource management. A fundamental shift from downstream waste management toward upstream production control is essential.
2. Embed lifecycle responsibility across the value chain: This necessitates extended producer responsibility (EPR) schemes that integrate upstream producers with downstream waste stakeholders. Complementary measures such as the right-to-repair legislation, binding durability and reuse standards, and transparent disclosure of product composition and environmental performance should be developed to advance progress. In parallel, consumers can exercise economic and electoral agency through purchasing choices and civic engagement, compelling governments and firms to respond. However, individual action is not sufficient in the presence of concentrated corporate power and institutional fragmentation. Behavioural change must be achieved in tandem with structural reform, including shared ownership models.
3. Strengthen enforcement and governance: Effective regulation requires clear mandates across governance levels, detached from broader political and institutional reform, strong enforcement mechanisms, and transparent compliance monitoring and penalty systems. Anti-corruption safeguards and robust action towards misleading environmental claims and greenwashing are critical to maintaining regulatory credibility and achieving reduced production and improved resource management.

Regulatory optimisation should serve not only to reduce material throughput but also to redistribute responsibility, internalise environmental costs, and ensure that sustainability transitions repair systemic injustice.

6.5. Cultural Reorientation: Shifting Norms from Accumulation to Sufficiency

Cultural transformation requires attention to the interaction between human behaviour, (perceived) needs, everyday practices, and the societal norms that shape purchasing, use, and disposal patterns [75]. Within the minimalism ethics framework, cultural change functions as a mechanism for aligning well-being and sufficiency with context-specific sustainability goals. Its operationalisation, therefore, depends on strengthening sustainability literacy and enhancing decision-making.

In practice, behavioural shifts can be supported by embedding sustainability and circular economy principles within national curricula [101], hence introducing lifecycle thinking and environmental externalities into early education. In parallel, the development of accessible and locally adapted waste sorting communication tools and user-oriented technologies can address immediate disposal practices. Trusted community influencers, religious leaders, educators, and youth networks could be mobilised to disseminate new practices and diffuse norms. Targeted awareness and advocacy initiatives can make global

supply chain realities visible to consumers, e.g., regarding misleading environmental claims, promotional strategies that encourage disposability, and transparency on environmental and social externalities [101], contributing to institutional accountability. Finally, fostering a "precycling" mentality, where care and repair are viewed as socially valued practices, is equally essential. However, such a mentality flourishes and persists when such sustainable practices are feasible and convenient. Cultural transformation must therefore be aligned with infrastructural provision and policy frameworks to avoid individualising responsibility for structurally embedded consumption [33].

Communication functions as a key enabling mechanism in cultural transformation processes. In digitally interconnected societies, where information flows significantly influence norm formation, identity construction, and status signalling, consumption practices are affected. Communication infrastructures, currently used to stimulate material demand expansion, can be strategically repurposed to enhance transparency, strengthen sustainability literacy, and make systemic interdependencies visible. Civil society organisations, youth-led movements, and transnational advocacy networks are increasingly utilising physical and virtual resources to disseminate sustainability-oriented narratives and mobilise collective action. When aligned with educational reform, tools, and regulatory oversight, such communication processes can help legitimise and normalise minimalism.

7. Conclusions

The waste crisis, particularly within hypercapitalistic Western societies, exposes the need for a fundamental re-evaluation of systemic, structural, and cultural conditions that shape patterns of production and consumption, alongside distinctions between human needs and socially structured wants. A minimalism ethics approach offers a potential pathway for change by intervening at the midstream level of the value chain and disrupting the reinforcing feedback loop that sustains excessive production (hypercapitalism) and consumption (hyperhedonism). As upstream power asymmetries continue to drive material throughput, they generate a structural overflow that overwhelms midstream and downstream interventions, while creating negative environmental and social externalities. This persistent cycle continues to undermine transformative change, highlighting the need to challenge our current socio-economic and political system.

Advancing an ethic of minimalism, grounded in a renewed distinction between needs and wants, can reposition sufficiency as a guiding principle for transforming entrenched behaviour norms and economic incentives. However, waste prevention cannot be achieved through behavioural change alone; it requires sustained collective action and systemic reform. Operationally, this entails embedding lifecycle responsibility across the value chain and redirecting investment toward durability, repair, refurbishment, reuse, product–service systems, and second-hand markets, rather than reliance on virgin material processing. Strengthened by regulatory oversight and corrective pricing instruments and supported by sustained political accountability, minimalism and sustainability transitions can repair systemic injustice and help decouple value creation from material expansion. In turn, this structural shift can enable broader cultural transformation by avoiding the individualisation of responsibility for structurally embedded consumption patterns. When supported by educational reform, tools and communication processes, minimalism can gain social legitimacy.

While this study is conceptual in nature and does not seek to provide exhaustive empirical validation or causal modelling of the relationships discussed, the synthesis of the existing literature and the use of illustrative indicators help uncover systemic patterns and interconnections across production, consumption and waste generation, even if not quantifying their relative contributions. In doing so, the study highlights the importance of

reorienting societal values and consumption practices toward sufficiency-oriented principles. Future research could further operationalise the proposed minimalism framework and explore its application across different socio-cultural and economic contexts. Ultimately, minimalism is not defined by consuming less, per se, but is about wanting more deliberately, choosing more carefully, using more responsibly, and importantly, wasting less.

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