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Review Article

Reducing without losing: Reduced consumption and its implications for well-being

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ABSTRACT

Consumption is often considered important for achieving and maintaining well-being, particularly in current market societies. However, overconsumption is a significant driver of climate issues as it results in material scarcity and carbon emissions. Reduced consumption is one possible solution to environmental problems associated with climate change, as it lowers resource use and prevents waste creation. However, reductions in consumption may be perceived as a threat to human well-being. In this paper, we systematically review the literature to provide an overview of empirical studies that investigate the relationship between reduced consumption and well-being at the individual level. The majority of selected studies suggest that reduced consumption is associated with higher levels of well-being or that there is not a significant relationship. Others indicate potential negative effects. The results suggest that reducing consumption does not typically have a negative association with the well-being of consumers in wealthy nations. Reported increases in well-being may be due to supporting consumers' autonomy, environmental mastery, and social relationships. Societal norms and the consumption behavior of our peers likely influence the relationship. By conducting the first systematic literature review on the relationship between reduced consumption and well-being, we provide a more integrated understanding of consumption's role in well-being and in what contexts reduced consumption can be beneficial. Reduced consumption seems achievable from a well-being perspective, but more research is needed regarding practical implications for marketers, government, and consumers.

1. Introduction

Consumers in high-income nations may be able to relate to Madonna's 'Material World' as these nations are responsible for 74 % of global excess material use. Global material use has increased markedly over the past half-century, and it is more than what is considered to be the sustainable limit (Hickel et al., 2022). Global consumption is driven primarily by the United States (27 %) and Europe's twenty-eight high-income countries (25 %) (Hickel et al., 2022). Due to industrialization during the 20th century, production times and costs were reduced, stimulating consumption and economic growth (Krausmann et al., 2009). This, in turn, contributed to overconsumption, especially in the developed world. Overconsumption is a widely used term, but here, it means the use of natural resources beyond environmental limits, which are determined by the rate at which resources regenerate (Daly and Townsend, 1993; Ehrlich and Ehrlich, 2004). These limits can be seen on Earth Overshoot Day when humanity has exhausted nature's budget for the year (Global Footprint Network, n.d.). The current removal of forests, animals, minerals, and water is too rapid for the Earth to replenish; by 2050, when there are 9.6 billion people on Earth, it will take almost three planets' worth of natural resources to allow high-income nations to continue "living in a material world" (United Nations Western Europe, 2020). Changes in climate and scarce resources will disrupt supply chains and displace millions of people (IPCC, 2022); natural resources are limited, and by overconsuming them, human existence is threatened.

Consumption can enhance well-being by alleviating material hardship and making life easier (Wang et al., 2019). However, ever-growing material consumption is not necessarily associated with increased well-being (Tsurumi et al., 2020). Previous research suggests that consumption could be significantly reduced in wealthy countries without impacting objective well-being; physical needs (i.e., nutrition,

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sanitation, access to energy, and elimination of poverty) could likely be met without significantly transgressing sustainable limits (O'Neill et al., 2018; Arto et al., 2016; Steinberger and Roberts, 2010). These predictions suggest that primarily affluent societies need to scale down their current consumption patterns, but it is necessary to understand how reductions in consumption may affect well-being.

Sustainable consumption is a broad concept emphasized as a solution to material and waste issues. It aims to meet present needs without jeopardizing the need fulfillment of future generations by using resources at their natural production rate. It also aims to produce less waste and emissions than can be naturally absorbed (Fischer et al., 2023). Descriptions of sustainable consumption include green buying (e.g., electric cars, reusable straws, clothing made from recycled textiles) and reduced consumption, but they also include the sharing economy, second-hand purchases, and waste behavior such as recycling (Carrero et al., 2020; Micheletti, 2003; Mont and Plepys, 2008). Substitutions are also a part of sustainable consumption; this can include taking the train instead of taking a flight or eating a vegetarian option instead of a meat-based meal. Sustainable consumption behaviors can be considered pro-environmental or ecological behaviors, as these behaviors are defined as actions that minimize the negative impact on the environment. Other terms with the same definition include green, eco-friendly, and environmental behavior (Tian and Liu, 2022).

Sustainable consumption behaviors, such as recycling and using green products, have been found to have a positive relationship with well-being (Kasser, 2017; Tezer and Bodur, 2020; Welsch and Kühling, 2011; Zawadzki et al., 2020). However, resource use and waste creation have not reduced because of these behaviors. For example, consumers were found to use more eco-detergent than regular detergent because they perceived the green product to be less effective (Lin and Chang, 2012). Individuals also chose a plastic bottle more frequently than a reusable cup when a recycling option was available, suggesting that the good feelings of recycling override the guilt of wasting materials (van Doorn and Kurz, 2021). Sustainable consumption can result in a licensing effect where consumers allow themselves self-indulgent behavior (i.e., longer showers) after first doing something altruistic (i.e., using a water-saving showerhead) (Lasarov et al., 2022). Certain sustainable consumption behaviors, especially waste behaviors (i.e., recycling) and green purchasing (i.e., driving an electric car), may make consumers feel they are doing their part for the environment. However, they do not challenge overconsumption (Lorek and Spangenberg, 2014). Reductions in consumption, such as decreasing the quantity of products (e.g., clothing, durables), services (e.g., streaming platforms), or utilities (e.g., energy), are the focus of this review because they are objectively effective in decreasing resource use and waste creation.

Reductions in consumption are needed to prevent future environmental crises (Chenavaz et al., 2021; Hofstetter et al., 2006), but reductions may be perceived as a threat to well-being (Jackson, 2004). Market capitalism is the dominant economy throughout much of the world today and relies on the buying and selling of goods and services. The basic logic is that the more that is produced, the more that is purchased, the more prosperous a society becomes. A market economy demands a consumer society where personal success, happiness, and well-being are associated with purchasing material possessions (Pérez and Esposito, 2010). Because consumer culture is so ingrained in affluent societies, suggestions to reduce purchases may be perceived as threats to well-being, making it necessary to explore how consumption reductions affect individual consumers' well-being.

1.1. Conceptual overview

1.1.1. What is reduced consumption?

Absolute reductions and reduced consumption are often used interchangeably and are a key part of sufficiency (Sandberg, 2021). Sufficiency aims to limit consumption to only a level of necessity through absolute reductions, modal shifts, product longevity, and sharing practices. It requires change from both the production and consumption sides (Sandberg, 2021). Sufficiency strives to provide a minimum level of resources for all people; the idea is that basic needs of food and water, sufficient rest, clothing, shelter, overall health, and reproduction can be met with a much lower level of resource use (Jungell-Michelsson and Heikkurinen, 2022). Our review focuses on reductions in consumption rather than sufficiency as they are objectively effective and may be more widely applicable. Affluent societies seem to adequately meet basic needs (Social Progress Imperative, 2022). However, individuals in affluent nations would need to drastically change their behavior to achieve sufficiency as it focuses on limiting consumption to a level of necessity. Sufficiency is still regarded as a niche and radical approach to sustainability (Speck and Hasselkuss, 2015). It may not be feasible in Western societies where consumers are accustomed to over-consumption; a minimum consumption level may be subjective, and a maximum consumption level may seem overly prescriptive to consumers. Reductions in consumption can be used as an intermediary step.

Reduced consumption includes resource-saving behaviors and implies an overall reduction in the volume of consumption (e.g., repairing broken goods and avoiding unnecessary acquisitions) (Gilg et al., 2005). Measures can include specific footprint reductions such as material, energy, or water footprints, and the analysis is usually based on consuming less than the average (Buhl et al., 2017; Li and Chen, 2022; Suárez-Varela et al., 2014). Other measures focus on reduced lifestyles or outlooks, such as voluntary simplicity, minimalism, and anti-consumption, and usually ask consumers to compare the reduction to their own consumption (Kang et al., 2021; Martin-Woodhead, 2022; Rich et al., 2017). Voluntary simplicity, minimalism, and anti-consumption have significant overlap, making it difficult to delineate one from the other (Martin-Woodhead, 2022). Voluntary simplicity is a lifestyle that intentionally minimizes consumption and maximizes the independence of uncontrollable institutions. It can also be described as politically motivated as it initially was a response to environmental concerns (Kang et al., 2021). Minimalism is undoubtedly rooted in voluntary simplicity, but it is less about opposing or ending consumption and focuses more on individual benefits (Kang et al., 2021); it is defined as voluntarily limiting and maintaining the number of possessions owned to a bare minimum. Individual morality is placed at the center of consumption decisions in place of opposition to general consumer society (Kang et al., 2021). Anti-consumption is the voluntary and intentional avoidance of consumption, which can be general or selective. People who choose to reject, reduce, or reclaim certain goods, services, or brands are anti-consumers (Lee and Ahn, 2016). They decide to make consumption choices consistent with one's values. Anti-consumption values can be seen in both voluntary simplicity and minimalism as the rejection of consumption can be due to several reasons: a negative previous experience with a product or business, incongruence with a brand, poor product quality, or simple avoidance of the mainstream consumption practices (Iyer and Muncy, 2016). Frugality or frugal purchasing is another lifestyle related to reduced consumption; it limits consumption expenditure to prevent excess and is not typically done for environmental reasons but does result in lower resource use (Dhandra, 2019). These lifestyles are considered reduced consumption as they limit their purchases, use of services, and ownership of material goods.

1.1.2. What is well-being?

Well-being is multifaceted and encompasses different metalevel concepts, such as consumer quality of life, subjective well-being, overall happiness with life, interpersonal well-being, societal well-being, and financial well-being (Balderjahn et al., 2020). Well-being is not measured consistently, and various measures can be found in the literature (see Table 1 for an overview). Well-being is often divided into eudaimonic and hedonic (Ryan and Deci, 2001; Waterman et al., 2008). Eudaimonia can be traced back to Aristotle and proposes that the goal of human functioning is to live in a manner consistent with one's true self or best potential (Norton, 1976). The Eudaimonian view of well-being,

Table 1
Commonly used well-being concepts and measures.

	Well-being concept	Description	Common scale
Hedonic	Happiness	A global, subjective assessment of whether a person is happy or unhappy.	Subjective Happiness Scale (Lyubomirsky and Lepper, 1999)
	Life satisfaction	Narrowly focuses to assess global life satisfaction and does not include related constructs such as positive affect or loneliness.	Satisfaction With Life Scale (Diener et al., 1985)
	Pleasure Orientation	A measure of life satisfaction by maximizing positive emotions and minimizing negative emotions.	Orientation to Happiness Scale (Peterson et al., 2005)
	Positive and negative affect	A measure of positive and negative emotions.	Positive and negative affect schedule (Watson et al., 1988)
Eudaimonic	Flourishing	Measures the respondent's self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism.	Flourishing Scale (Diener et al., 2010)
	Personal well-being	Measures satisfaction with standard of living, health, achievement in life, relationships, safety, community-connectedness, and future security.	Personal Well-being Index (Cummins et al., 2003)
	Psychological distress	A global measure of distress based on questions about anxiety and depressive symptoms.	Kessler Psychological Distress Scale (Kessler et al., 2003)
	Psychological well-being	Includes six aspects of well-being and happiness: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance.	Psychological Well-being (PWB) Scale (42 items) (Ryff, 1989)
	Social well-being	Development and maintenance of positive interactions with other people and with local and global communities.	Social Well-being Scale (Keyes, 1998)
	Vitality	The state of feeling alive and alert.	Subjective Vitality Scale (Ryan and Frederick, 1997)

as presented in the well-being literature, underscores the personal perception of mastering life's challenges. This conceptualization of well-being does not focus on situational happiness or pleasure but rather on individuals' meaningful and self-realized lifespan growth (Norton, 1976; Ryff, 1989; Ryff, 2013). It is often measured with the Flourishing Scale and refers to aspects of human actualization like autonomy and environmental mastery (Diener et al., 2010; Ryff and Keyes, 1995). Psychological well-being is another common eudaimonic measure comprised of six markers: self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and autonomy (Ryff and Keyes, 1995). Psychological well-being goes beyond hedonism and the pursuit of happiness or pleasurable experience and beyond life satisfaction (Ruggeri et al., 2020). Less used eudaimonic measures include social psychological distress, social well-being, personal well-being, and vitality. Psychological distress is a measure of emotional suffering, and variables that are associated positively with psychological well-being are associated negatively with psychological distress and vice versa. However, psychological well-being and psychological distress are not exact opposites of each other (Winefield et al., 2012). Social well-being and personal well-being focus on relationships but personal well-being also measures physical, mental, and emotional health factors (Cummins et al., 2003; Keyes, 1998). Vitality is the possession of positive energy and it can be a more immediate and direct indicator of well-being as an energic state has a physical basis (Ryan and Frederick, 1997; Stephan et al., 2020).

The hedonic concept of well-being generally refers to feelings of immediate pleasure and enjoyment (Waterman et al., 2008). It is often measured with the life satisfaction and subjective well-being scales (Deci and Ryan, 2008) but positive and negative affect and pleasure orientation are two other common hedonic measures. 'Happiness' is often used interchangeably with well-being and typically refers to the hedonic concept. Subjective well-being is the most common measure when studying hedonic outcomes (Ryan and Deci, 2001). It consists of three components: life satisfaction, the presence of positive mood, and the absence of negative mood, together often summarized as happiness, but life satisfaction is often used as a stand-alone measure. These measures assess people's life experiences and provide a broader assessment of individuals' happiness.

Eudaimonic and hedonic well-being are often seen as two distinct visions of what well-being entails, but the two are not mutually exclusive (Waterman et al., 2008). Achievement of purely hedonic well-being may prevent people from a eudaimonic life. However, a behavior may contribute to a general feeling of well-being because it is both pleasurable and meaningful (Waterman et al., 2008). When discussing results, this paper uses "well-being" followed by the indicator in brackets to represent the measure used in the respective paper. For example, if discussing life satisfaction, well-being (life satisfaction) will be used.

1.2. Contribution

Previous literature reviews have studied the relationship between well-being and sustainable consumption, moral consumption, pro-environmental behaviors, minimalism, voluntary simplicity, and anti-consumption (Kasser, 2017; Komarova Loureiro et al., 2016; Zawadzki et al., 2020; Hook et al., 2023; Maseeh et al., 2022; Hoffmann and Lee, 2016). However, sustainable consumption and pro-environmental behaviors may not include reduced consumption behaviors. Furthermore, lifestyles such as minimalism and anti-consumption are generally deliberate. They can even be considered drastic decisions, potentially making the results of these reviews too niche for 'ordinary' consumers. Sufficiency has been reviewed as a concept, but reductions in consumption and their relation to well-being have not yet been focused on (Jungell-Michelsson and Heikkurinen, 2022).

This literature review aims to understand how and why reductions in the volume of consumption affect well-being at the individual level. Some consumers may be incapable of reducing their consumption because of infrastructure limitations or because they already consume minimally due to financial limits, but it is also possible that consumers in wealthy nations can reduce their consumption without harming their well-being. This understanding has practical relevance for policymakers, as they can use it to regulate marketing practices that play a role in overconsumption. This synthesis will illustrate the gaps in the literature and provide a roadmap for future research.

The article is structured as follows. First, the methodological approach will be described in detail. Next, the findings regarding reduced consumption and well-being will be presented. Finally, the findings and their broader implications will be discussed, ending with concluding remarks about the study and reduced consumption and well-being in general.

2. Materials and methods

Systematic reviews use a planned and structured approach to review published academic research; organized and replicable methods are used to identify, select, and critically assess literature searches (Tranfield et al., 2003). The methodology followed for the literature review included two main phases: selection and analysis (Jungell-Michelsson and Heikkurinen, 2022; Luo et al., 2023). The selection phase comprised gathering a comprehensive set of publications in the desired areas, while the analysis phase consisted of a careful and critical examination of the publications to identify patterns and recurrent themes. Specifically, the systematic review followed a five-step scheme based on recommendations by Paul and Criado (2020 and Tranfield et al. (2003) that included (i) problem definition, (ii) selection of journals, (iii) selection of studies, (iv) critical appraisement and evaluation; and (v) synthesis. These steps are described next, and the key information concerning the method is summarized in Table 2.

2.1. Research objective and search terms

The overall objective of the research was to understand how reductions in consumption affect well-being, and the Web of Science was used to answer this. The following search terms were used in a pilot search in May 2022: (well-being) AND (reduced consumption OR sufficiency consumption). Significant papers were missing from these results because they used specific well-being measures, a different spelling of well-being, or specific consumption terms (anti-consumption or minimalism). A second search was performed in June 2022 using the following search terms: (wellbeing OR well-being OR life satisfaction OR happiness OR meaning in life OR positive emotions OR positive affect) AND (consumption). A final search was performed in February 2023 to ensure the results were current. The same search was performed on Google Scholar to avoid database bias.

2.2. Journal and article selection

Article selection was limited to peer-reviewed journals, as they can be considered established and validated knowledge elaborated through rigorous scientific method. The search was not limited to a specific time period, and English was the selected language. These searches resulted in a sample of 23,045 publications. Using the publishing journal and research topic, studies that were clearly off-topic (e.g., medicine, engineering) were eliminated. After this filtering, 8289 publications remained. All papers' titles, abstracts, and keywords were then analyzed for an indication of reduced consumption and well-being. A total of 261 studies passed the initial screening. Of the 261 papers, 68 studies passed the second screening and were read in full. This second screening checked whether the paper was empirical and whether reduced consumption and well-being were investigated. The references of the selected articles were screened for other relevant sources, also known as a cited search or snowball sampling. Previous literature reviews were also reviewed to identify any remaining relevant studies. 38 articles made it to the final selection (Fig. 1). The whole sample was selected by one researcher and reviewed by three other researchers.

Table 2
Basic information about the systematic literature review adapted from Callahan's (2014) framework.

Who conducted the review?	The authors of this paper
When were the data collected?	From May 2022 to March 2023
Where were the data collected?	Articles in peer-reviewed, scholarly journals
How were the data found?	Database searches (Web of Science); Google Scholar; snowball sampling
What was found?	Final data set of 38 articles
Why were certain works included (selection criteria)?	Search word found in title, abstract, or keyword; English; includes measures of reduced consumption and their relation to well-being

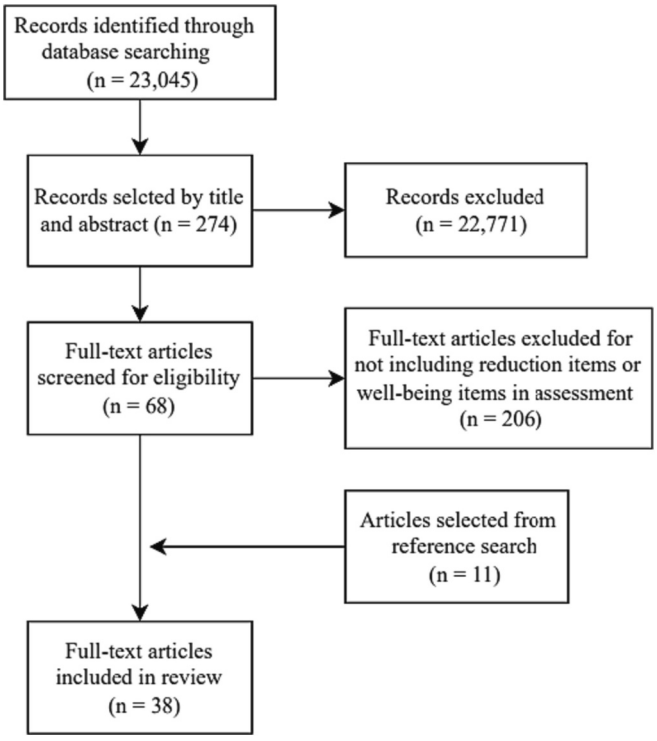

Fig. 1. Overview of the search and review process.

2.2.1. Inclusion criteria

Selected articles explicitly discussed the relationship between reductions in consumption and well-being at the individual consumer level. Absolute reductions in consumption, such as decreasing the quantity of products (e.g., clothing), services (e.g., streaming platforms), or utilities (e.g., energy), were chosen because of the behavior's efficacy in reducing resource use and waste creation and, secondly, because of the common belief that reduced consumption equates to decreased well-being. Because reduced consumption is a part of sustainable and pro-environmental behavior and can be measured in various ways, articles were included if terms such as pro-environmental, ecological, or sustainable behavior/consumption/lifestyle were used. Well-being also had to be referred to in the title or abstract, which could be expressed with various terms (i.e., happiness, positive emotions, psychological health).

Selected articles studied the pre-purchase, purchase, and use phases of consumption. Examples include when a consumer chooses not to purchase an item, reduces the purchase quantity, or keeps a product to avoid buying a replacement. The disposal phase, such as recycling and waste sorting, was not included to emphasize the most efficient behaviors regarding material use and waste prevention. Whether these concepts included reduction was checked in the methods of the article. Thirty papers were excluded after a full reading of the text because the paper was conceptual, the measure and analysis did not take place at the individual level, or reduced consumption items were not measured. Examples of exclusion related to green products or alternatives, sharing, second-hand, DIY, recycling, and waste sorting, as they do not necessarily result in reduced consumption. Substitutions such as taking the train instead of a flight were also excluded because while flying was reduced, the number of trips was not reduced, thereby representing broader sustainable consumption. Studies focused on carbon footprint were also excluded as it was not possible to tell if consumption was reduced; if only carbon impact is considered, global warming may be averted, but material shortages and pollution issues would remain.

2.3. Data analysis and synthesis

After selecting the articles, the list was exported from the Web of Science platform into Microsoft Excel for critical evaluation. The analysis was focused on what reduction behaviors were reported and how they related to the well-being measure. From the papers, the following information was obtained: (i) publishing journal, (ii) research design and level, (iii) reduction concept/measure, (iv) well-being measure, (v) mediator, moderator, and control variables, and (vi) main findings. Finally, the papers were grouped by their reduction concept/measure. An aggregative approach was used to summarize the findings.

3. Results

This section presents and evaluates the main findings obtained in the selected studies. First, the operationalizations of reduced consumption and well-being are presented. The results of selected studies are then presented based on the reduction concept/measure. The details of each study can be found in Table 3.

3.1. Operationalization of key concepts

3.1.1. Reduced consumption operationalization

Reduced consumption implies an overall reduction in the volume of consumption through resource-saving behavior. This was measured in various ways and included pro-environmental behavior, ecological behavior, ethical consumption, voluntary simplicity, minimalism, anti-consumption, frugality, consumption expenditure, material footprint, and water and energy footprints. Many studies grouped reduction behaviors with green behaviors, such as driving an electric vehicle, activism, or recycling. Reduction behaviors were found within ecologically responsible behaviors, sustainable consumption, ethical consumption, and pro-environmental behaviors (Binder et al., 2020; Binder and Blankenberg, 2017; Brown and Kasser, 2005; Ganglmair-Wooliscroft and Wooliscroft, 2019; Ibáñez-Rueda et al., 2020; Tiwari, 2016). Scales for these concepts varied, but they included multiple reduced consumption items, such as conserving water or energy, repairing damaged goods, or avoiding unnecessary acquisitions and impulsive purchases. These measures either asked respondents whether they participated in the selected behaviors or the frequency of the behavior. For example, a green behavior index was created by summing self-reported participation in eleven green behaviors (Binder and Blankenberg, 2017). Five of these behaviors were reduction behaviors. A similar index was created by asking participants to rate the frequency of their participation in twenty pro-environmental behaviors, nine of which were reduction behaviors (Binder et al., 2020). Similar indexes were created for ethical behavior (Ganglmair-Wooliscroft and Wooliscroft, 2019) and general ecological behavior (Tiwari, 2016). These two studies included reduced consumption items in their scales but did not measure them as a separate dimension and included fewer reduction behaviors. Ganglmair-Wooliscroft and Wooliscroft (2019) had seven reduction behaviors out of thirty ethical consumption behaviors, and Tiwari (2016) had fourteen reduction behaviors out of sixty-five pro-environmental behaviors. Other studies included reduction behaviors in their index and also measured them as separate dimensions, making it possible to differentiate between reduced consumption and more general environmental behaviors (i.e., recycling) (Kaida and Kaida, 2016; Ortiz and Sarrias, 2022; Schmitt et al., 2018).

In the studies where the focus was more specific, the consumption reduction measure was more pronounced, i.e., resource footprint calculations and voluntary simplicity or frugality scales. One study used objective water use measurements (Chenoweth et al., 2016), but the remaining studies relied on self-reported measures such as “I try to buy fewer products,” “I turn the tap off while brushing my teeth,” or “I turn the lights off when I leave a room.” A voluntary simplicity scale was usually used when reduced lifestyles were studied (anti-consumption, voluntary simplicity, and minimalism). Anti-consumption and minimalism both have roots in voluntary simplicity, explaining their use. Other self-reported measures included consumption expenditure, material footprint, water conservation, and energy conservation.

3.1.2. Well-being operationalization

The measurements of well-being varied, but the most common measures were life satisfaction, subjective happiness, positive and negative feelings (PANAS), depression, and flourishing (see Table 3). Measures of well-being were both hedonic and eudaimonic, but hedonic measures were more frequent. Many studies used Diener et al.’s (1985) single-item version of the Satisfaction with Life Scale to measure subjective well-being, but some used a combination of measures. The subjective Happiness Scale (Lyubomirsky and Lepper, 1999) was another common measure. Eudaimonic measures, such as flourishing and psychological well-being, were also seen in the selected studies but were not as frequent. Next, the results of the selected articles will be discussed.

3.2. Voluntary simplicity, minimalism, anti-consumption and frugality

A large portion (37 %) of the selected papers focused on lifestyles that aimed to reduce consumption through simplified behaviors. These included voluntary simplicity, minimalism, anti-consumption, and frugality. Frugality was always measured with a frugality scale, but the others were often measured with a voluntary simplicity scale. Ten out of these seventeen found a positive and significant correlation between reduced consumption and well-being, and the remaining did not find a significant relationship.

Voluntary simplicity was the most used measure of reduction (Balderjahn et al., 2020; Balderjahn et al., 2023; Balderjahn et al., 2021; Boujbel and d’Astous, 2012; Brown and Kasser, 2005; Hüttel et al., 2020; Rich et al., 2017; Seegebarth et al., 2016; Tosun and Sezgin, 2021). Some of these studies did not find a significant relationship. Seegebarth et al. (2016) found no significant relationship between well-being (psycho-social well-being) and voluntary simplicity in their sample of German university students. They suggest that the lack of association may be related to the sample. Because students already think carefully about how to spend their money and what to consume, they may not be significantly affected by a reduced lifestyle (Seegebarth et al., 2016). Alternatively, reducing further may be a more significant challenge for a sample already reducing. If a consumer is already cutting back, further reduction may affect basic needs. Balderjahn et al. (2020) and Hüttel et al. (2020) also did not find a statistically significant relationship between voluntary simplicity and well-being (flourishing and subjective happiness, respectively). One possible explanation for why there was not a negative association was that consumers did not consider voluntary simplicity to be a sacrifice (Balderjahn et al., 2020).

Financial well-being was also an important benefit for voluntary simplifiers; living without debt significantly increased consumers’ well-being (flourishing and subjective happiness) by increasing freedom and control (Balderjahn et al., 2020). Boujbel and d’Astous (2012) compared the well-being (life satisfaction) of voluntary simplifiers to non-simplifiers and found that voluntary simplifiers had higher well-being (life satisfaction). They suggested that increased control was responsible, but this was shown to be the case only among consumers with limited financial resources. High-income voluntary simplifiers may feel that they are more satisfied with life because their lifestyle allows them to develop a more gratifying self-image. However, less wealthy consumers may derive this increased well-being from being able to support themselves with limited means (Boujbel and d’Astous, 2012).

Three studies focused on minimalism and found positive results (Kang et al., 2021; Martin-Woodhead, 2022; Lloyd and Pennington, 2020). Through a questionnaire, Kang et al. (2021) identified minimalism factors of clutter removal, cautious shopping, longevity, self-sufficiency, and desire for simplicity. Their analysis revealed a positive association between minimalism and flourishing and a negative

Table 3
Overview of selected papers, grouped by the reduced consumption type.

	Author and year	Location of study and sample	Research method and analysis	Reduction item/s	Well-being measure	Relationship with well-being	Correlational or causal
Voluntary simplicity, anti-consumption, and minimalism	Balderjahn et al. (2021)	United States (n = 1017), Germany (n = 1030)	Structural equation modelling of online questionnaire data	Voluntary simplicity	Choice satisfaction	Positive	Correlational
	Balderjahn et al. (2020)	Germany (n = 450)	Structural equation modelling of online questionnaire data	Voluntary simplicity	Flourishing, Subjective Happiness	Not significant	Correlational
	Balderjahn et al. (2023)	Germany (n = 1398)	Structural equation modelling of online questionnaire data	Voluntary simplicity	Psychological well-being, subjective well-being, financial well-being	Not significant	Correlational
	Boujbel and d'Astous (2012)	Canada (n = 611)	Regression analysis of online survey data	Voluntary simplicity	Life satisfaction	Positive	Correlational
	Brown and Kasser (2005)	Mexico (n = 206)	Structural equation modeling of student questionnaires	Voluntary simplicity	Subjective well-being	Positive	Correlational
	Hüttel et al. (2020)	Germany (n = 1075), United States (n = 1070)	Structural equation modeling of online questionnaire data	Voluntary simplicity	Subjective Happiness	Not significant	Correlational
	Kang et al. (2021)	United States (n = 1050)	Structural equation modeling of questionnaire data	Minimalism	Flourishing and depression	Positive	Correlational
	Lee and Ahn (2016)	Global	Qualitative textual data analysis of online forums, blogs, and websites	Anti-consumption values	General happiness and consumer well-being	Positive	NA
	Lloyd and Pennington (2020)	United Kingdom, Australia, United States, Canada, Germany (n = 10)	Semi-structured interviews	Minimalism	General well-being	Positive	NA
	Oral and Thurner (2019)	Global (n = 153)	Regression analysis of online survey data	Anti-consumption	Life satisfaction	Positive	Correlational
	Rich et al. (2017)	Australia (n = 571)	Structural equation modeling of survey data	Voluntary simplicity	Life satisfaction	Positive	Correlational
	Seegebarth et al. (2016)	Germany (n = 400)	Multivariate data analysis of survey data	Voluntary simplicity	Flourishing	Not significant	Correlational
	Tosun and Sezgin (2021)	Turkey	Content analysis of online written, verbal, or visual communication messages	Voluntary simplicity	NA	Positive	NA
	Martin-Woodhead (2022)	United Kingdom (n = 15)	15 in-depth, semi-structured interviews	Minimalism	Personal well-being	Positive	NA
Frugality	Corral-Verdugo et al. (2011)	Mexico (n = 606)	Structural equation modeling of student surveys	Frugality	Subjective Happiness	Not significant	Correlational
	Dhandra (2019)	India (n = 420)	Regression analysis of student survey data	Frugal purchasing	Life satisfaction	Not significant	Correlational
	Nepomuceno and Laroche (2017)	North America (n = 228, n = 286)	Multivariate data analysis of experimental data	Frugality, Resistance to consumption	Happiness	Not significant	Causal
Material resource savings	Buhl et al. (2017)	Germany (n = 49,037)	Regression analysis of survey data	Material footprint	Life satisfaction	Not significant	Correlational
	Carrero et al. (2020)	Spain (n = 453)	Structural equation modeling of questionnaire data	Simplifying behaviors	Psychological well-being	Positive	Correlational
	Helm et al. (2019)	United States (n = 968)	Structural equation modeling of online questionnaire data	Reduced consumption	Personal well-being, life satisfaction, financial satisfaction, and psychological distress	Positive	Correlational
	Herziger et al. (2020)	United States (n = 271)	Principle component analysis and regression modeling of survey data	Material consumption	Eudaimonic well-being (26 items)	Not significant	Correlational
	Verhofstadt et al. (2016)	Belgium (n = 1286)	Multivariate data analysis of survey data	Energy, car use, vacations	Life satisfaction	Mixed	Correlational
Consumption expenditure	Noll and Weick (2015)	Germany (n = 30,000)	Regression analysis of national survey data	Consumption expenditure	Life satisfaction	Positive	Correlational

(continued on next page)

Table 3 (*continued*)

	Author and year	Location of study and sample	Research method and analysis	Reduction item/s	Well-being measure	Relationship with well-being	Correlational or causal
Water reduction	Wang et al. (2021)	China (n = 498)	Structural equation modeling of national survey data	Consumption expenditure	Sense of being threatened, lack of control, and lack of freedom	Positive	Correlational
	Wang et al. (2019)	China (n = 37,147)	Regression modeling of the China Family Panel Studies (CFPS)	Consumption expenditure	Life satisfaction	Mixed	Correlational
	Chenoweth et al. (2016)	United Kingdom (n = 187)	Regression modeling of survey data	Actual water use	Quality of life	Not significant	Correlational
	Ibáñez-Rueda et al. (2023)	Spain (n = 937)	Regression analysis of student survey data	Shower frequency and duration	Life satisfaction, PANAS, subjective vitality	Not significant	Correlational
	Suárez-Varela et al. (2014)	Spain (n = 1472)	Ordered logit analysis of questionnaires	Water conservation	Life satisfaction	Not significant	Correlational
Energy reduction	Li and Chen (2022)	China (n = 133,204)	Regression modeling of the China Family Panel Studies (CFPS)	Electricity and fuel consumption	Life satisfaction	Mixed	Correlational
	Prati et al. (2017)	Italy (n = 298)	Structural equation modeling of longitudinal data	Energy conservation	Social well-being	Positive	Causal
Pro-environmental behaviors, including reduction behaviors	Binder and Blankenberg (2017)	United Kingdom (n = 78,165)	Multivariate data analysis of longitudinal data	5 reduction items/11 pro-environmental behaviors	Life satisfaction	Positive	Correlational
	Binder et al. (2020)	Spain (n = 640)	Probit analysis of student questionnaires	9 reduction items/20 pro-environmental behaviors	Life satisfaction	Mixed	Correlational
	Ganglmair-Wooliscroft and Wooliscroft (2019)	Austria (n = 360)	Regression analysis of online survey data	7 reduction behaviors/30 ethical consumption behaviors	Life satisfaction, Personal Well-being, Flourishing, and Pleasure Orientation	Mixed	Correlational
	Ibáñez-Rueda et al. (2020)	Spain (n = 973)	Regression analysis of student questionnaires	7 reduction items/15 pro-environmental behaviors	Life satisfaction, PANAS, subjective vitality	Mixed	Correlational
	Kaida and Kaida (2016)	Sweden (n = 279)	Structural equation modeling of questionnaire data	Frugality, water, and energy conservation (analyzed separately)	Life satisfaction	Positive	Correlational
	Ortiz and Sarrias (2022)	Ecuador (n = 83,094)	Probit modeling of national survey data	Energy and water conservation (analyzed separately)	Life satisfaction	Positive	Correlational
	Schmitt et al. (2018)	Canada and United States (n = 1220)	Regression analysis of survey data	12 reduction items/ 39 pro-environmental behaviors	Life satisfaction	Positive	Correlational
	Tiwari (2016)	India (n = 200)	Structural equation modeling of survey data	14 reduction items/ 65 pro-environmental behaviors	Subjective Happiness	Positive	Correlational

association with depression (Kang et al., 2021). The two other minimalism studies were qualitative. Both were interview-based studies that suggested that minimalists experienced increased physical, temporal, and mental space and greater financial control (Martin-Woodhead, 2022; Lloyd and Pennington, 2020). Having only a few personal possessions allowed them greater flexibility, as they could travel and move home more easily. They spent less time shopping, cleaning, and repairing possessions, allowing them more free time and greater control of their finances. Minimalists also reported that when they did choose to purchase, shopping disappointed them as they expected it to make them feel better or achieve a specific identity, but this was never successful (Martin-Woodhead, 2022).

Anti-consumption was the focus of two papers (Lee and Ahn, 2016; Oral and Thurner, 2019). Qualitative analysis of textual data from online blogs, forums, and websites identified four key values of anti-consumption: high control over consumption, a macro-level scope of concerns (concern for both personal and societal issues), low material desire, and an internal sense of fulfillment and purpose, also known as intrinsic happiness (Lee and Ahn, 2016). Individuals high in materialistic values, the opposite of anti-consumption values, expressed having lower control over their consumption, causing them to seek happiness from extrinsic sources, such as products, but this happiness did not last. Those with anti-consumption values tended to pursue an intrinsic source of happiness. Consumers expressed a loss of control driven by materialistic behavior because they were "forced" to spend more time working because more money was needed for consumption, signifying a loss of autonomy (Lee and Ahn, 2016). Oral and Thurner (2019) tested the relationship between these anti-consumption values and their relationship with well-being (life satisfaction). A broad scope of concerns and high control over consumption had no significant impact on well-being (life satisfaction). A low desire for material possessions and an intrinsic source of happiness each significantly positively impacted life satisfaction (Oral and Thurner, 2019).

Frugality was always measured with a frugality scale, and the relationship with well-being (life satisfaction and subjective happiness, respectively) was not statistically significant (Dhandra, 2019; Corral-

Verdugo et al., 2011). Nepomuceno and Laroche (2017) also found no significant relationship between frugality and well-being (happiness). Corral-Verdugo et al. (2011) suggested that this result is due to the respondents' age, as most participants were in their twenties. Dhandra (2019) and Nepomuceno and Laroche (2017) also used a sample of university students. These respondents may link their well-being with consumerism, but it is also possible that reductions in consumption are not a sacrifice, as previously suggested by Balderjahn et al. (2020). One study found a significant positive relationship between pro-environmental behaviors and well-being (life satisfaction) (Kaida and Kaida, 2015). They also evaluated the relationship between frugality and pro-environmental behaviors and found a significant positive correlation. Using a random sample of car owners in Sweden resulted in a higher age of respondents.

The positive relationships between anti-consumption, voluntary simplicity, minimalism, frugality, and well-being seem primarily related to decreased materialistic values. This aligns with Ryff's model of well-being, where autonomy and environmental mastery, or how well a person manages life situations, are significant determinants (Ryff, 2013). To combat materialistic consumption, long-term orientation and self-control could be increased (Oral and Thurner, 2019; Nepomuceno and Laroche, 2017). Increased self-control and long-term orientation may motivate individuals to consume less in the short term and acquire possessions that will make them happier in the future rather than aiming for instant, short-term hedonic pleasure (Nepomuceno and Laroche, 2017).

3.3. Material resource savings

Material resource savings refers to reductions in material use (Buhl et al., 2017). These studies used measures of material footprint, low or reduced consumerism, and simplifying behaviors. Material footprint measures the overall amount of raw materials required for producing, using, and disposing of materials, products, and services. For example, if car travel is analyzed, it is not sufficient to simply include the car and the fuel; the iron ore mine, the steel production factory, and the infrastructure (i.e., roads) also have to be considered in the equation (Buhl et al., 2017). Ecological footprint is a similar composite indicator that measures humanity's demand on nature. It is expressed in global hectares and captures how much land is needed to produce all the resources it consumes and to absorb the waste it generates (Verhofstadt et al., 2016). Reduced consumerism and simplifying behaviors are dissimilar from the lifestyles of the previous section as they do not focus on a specific lifestyle and do not consider values or goals that are a part of practices like voluntary simplicity or anti-consumption.

Studies that focused on material resource savings found a mix of positive and non-significant associations with well-being (Buhl et al., 2017; Carrero et al., 2020; Helm et al., 2019; Herziger et al., 2020; Verhofstadt et al., 2016). Buhl et al. (2017) study of material footprint and well-being (life satisfaction), found that a lower footprint did not correlate with well-being. Subjective health and satisfaction with social relationships were the most powerful predictors of well-being (life satisfaction). Age, days on vacation, and the size of the home dwelling also had a relatively weak negative influence on life satisfaction, suggesting that subjective norms may predict well-being (life satisfaction) more accurately than resources used, home dwelling size, or vacation days (Buhl et al., 2017).

Herziger et al. (2020) also did not find a significant relationship when they compared the ecological footprint of two American neighborhoods of different income levels. They used an ecological footprint calculator to determine low material consumption. This was calculated by averaging the reported frequency of purchasing clothing items and electronics. There was neither a significant interaction between low material consumption and neighborhood nor a main effect of low material consumption on well-being (eudaimonic well-being). This showed that eudaimonic well-being was not significantly associated with consumption reduction in either of the two neighborhoods, suggesting that reducing without negatively impacting well-being may still be possible, even for low-income consumers (Herziger et al., 2020). Similarly, Verhofstadt et al. (2016) found that at the aggregate level, Flemish consumers' lower ecological footprints were not significantly associated with life satisfaction. However, when behaviors were analyzed separately, the results were different. Reduced consumption components included not using/owning a car, limiting holiday travel, and living in a small house or an apartment. They each had a significant negative association with well-being (life satisfaction) (Verhofstadt et al., 2016).

A positive association was seen in a study of university students (Helm et al., 2019). Financial behavior, reduced consumption, green buying, and their relation to materialism and well-being (personal well-being, life satisfaction, financial satisfaction, and psychological distress) were examined. Reduced consumption was measured with three items that were not disclosed, but it was analyzed separately from green buying. Reduced consumption had a positive association with personal well-being, life satisfaction, and financial satisfaction, and it was also negatively associated with psychological distress. They suggested that consumers who reduced their consumption were happier and less likely to use the acquisition of possessions as a source of happiness or life satisfaction (Helm et al., 2019).

Carrero et al. (2020) examined the association between three dimensions of sustainable consumption (purchasing, simplifying, and activism) and the six markers of psychological well-being. Their measure of simplified behaviors included energy conservation items and reduced consumerism items and found varying associations between simplifying behaviors and well-being (psychological well-being). Positive associations were found with two out of six psychological well-being dimensions: personal growth and environmental mastery. Relationships with the remaining dimensions were not statistically significant (Carrero et al., 2020).

3.4. Consumption expenditure

Consumption expenditures include all expenditures on goods and services purchased by private households (Noll and Weick, 2015; Wang et al., 2019). It is determined by a range of factors, including the household's size, structure, and social situation, as well as the available financial resources and household members' personal preferences and lifestyles. Consumption expenditures may not always be identical to actual consumption over the same period of time (Noll and Weick, 2015).

Studies that used consumption expenditure as the independent variable had mixed results (Noll and Weick, 2015: Wang et al., 2019; Wang et al., 2021). Noll and Weick (2015) investigated the relationship between well-being (life satisfaction), income, and consumption expenditure. Using the 2010 German Socio-Economic Panel Study, they found that people in the lowest decile of consumption expenditures were more satisfied with their lives than those in the lowest income decile. Well-being (life satisfaction) seemed less impaired by poverty in expenditure than income terms. Low consumption expenditure was not significantly correlated with well-being (life satisfaction), but having lower income had a more influential role (Noll and Weick, 2015).

Wang et al. (2019) examined the relationship between (relative) consumption and well-being (life satisfaction) using panel data from China. They found that when the reference group had some similarity in age, education, and gender, and consumed more than the individual, the individual reported lower well-being (life satisfaction) than when there was no similarity. This is consistent with a status or jealousy effect. However, when the reference group was even more similar, and they were individuals of the same gender, similar age and education, and living in the same community, an increase in the average consumption of the reference group increased the well-being (life satisfaction) of the individual. It is possible that realizing that they consumed less than those most similar to them made them feel better about themselves. An

increase in the consumption of the highest spenders among those of the same age, education, and gender in the local community lowered well-being (life satisfaction). This is likely because the consumption behavior of the average community neighbor may seem more attainable compared to the consumption of dissimilar people. It was also found that dress, transportation, communication, and medical treatment were the most important determinants of well-being (life satisfaction) (Wang et al., 2019).

In another study of Chinese consumers, consumption behavior and consumption expectations before, during, and after the COVID-19 pandemic were compared (Wang et al., 2021). A negative correlation between repressed consumption and well-being (psychological distress) was found, and repression of consumption for basic needs resulted in higher stress. They defined consumption for basic needs as must-have products required for human survival. This was attributed to feeling threatened, lacking control, or lacking freedom (Wang et al., 2021). This study highlights the importance of whether the reduction is a choice or a forced decision and that consumption reductions should not threaten basic needs.

3.5. Water reductions

Due to climate change-induced droughts, water scarcity is not limited to arid climates. Freshwater is a limited resource, and over-consumption requires significant energy to create potable water, driving climate issues further. Chenoweth et al. (2016) analyzed absolute water use in England and found that lower water use had no significant relationship with well-being (subjective well-being). People with low well-being may attempt to increase their well-being through water consumption (i.e., longer showers). However, another study found that higher water consumption did not translate into higher perceived well-being when it concerned showering (Ibáñez-Rueda et al., 2023). It was also found that water-saving habits inside the household (i.e., shorter showers) were not negatively associated with well-being (life satisfaction) (Suárez-Varela et al., 2014). However, there was a positive relationship between using water-saving devices and well-being (life satisfaction) (Suárez-Varela et al., 2014). This can be explained by behavior cost; water-saving devices are easy to use and do not require a large sacrifice, whereas taking fewer showers or waiting to do a full load of washing requires behavior change. While these results illustrate that reducing water use does not have a negative association with well-being and that making it convenient to use water-saving devices can increase well-being, these studies did not take regional water stress or infrastructure into account; each country and region is accustomed to varying drought conditions, and well-being may be more or less affected depending on infrastructure and familiarity with drought periods. However, Chenoweth et al. (2016) provided valuable correlational evidence, thanks to actual water use as the reduction measure, suggesting that places similar to England can reduce water use and well-being would be unaffected.

3.6. Energy reductions

Two selected articles focused solely on energy consumption (Li and Chen, 2022; Prati et al., 2017). In their study of electricity and fuel consumption, Li and Chen (2022) investigated how absolute and relative energy consumption impacted well-being (life satisfaction). They demonstrated that consuming the same amount as the reference group after previously reducing energy consumption increased well-being (life satisfaction). The reference group is a group of people that a consumer uses as a frame of reference for their own experiences, perceptions, cognition, and ideas of self. It is important for determining a person's self-identity, attitudes, and social ties. Energy consumption was found to be subject to positional concerns, meaning that having more electricity and fuel expenditures than the reference group decreased people's life satisfaction. Consuming more energy than the reference group might make people feel guilty about their higher energy consumption. However, if an individual observed an increase in the reference group's fuel consumption compared to their own, this might generate lower pressure to reduce their energy use. Then, increased fuel spending might lead to higher life satisfaction (Li and Chen, 2022). This study highlights the importance of consumption comparison and how it may influence consumption's relationship with well-being.

Prati et al. (2017) study on energy conservation of Italian consumers provides evidence of a positive effect on well-being (social well-being). The cross-lagged panel design showed that energy conservation behavior was significantly associated with later social well-being after controlling for previous levels of social well-being. This study gives a strong indication of the direction of the relationship; however, the results cannot be generalized (Prati et al., 2017). Experimental studies would also help confirm the relationship.

3.7. Reductions among other pro-environmental behaviors

Many of the selected articles focused on pro-environmental behaviors. These studies included multiple reduction behaviors in their measure, but all the items were often analyzed together. Schmitt et al. (2018) were the exception and analyzed each pro-environmental behavior separately, making it possible to differentiate between pro-environmental and reduction behaviors. Reduced consumption behaviors positively correlated with well-being (life satisfaction), and reduction behaviors that involved more social interaction, such as behaviors that were more easily observed, had a stronger association with well-being (life satisfaction). However, many reduced consumption behaviors often had lower observability and social interaction (i.e., reducing water temperature in the shower or hanging clothes to dry instead of using the dryer), and their correlation with life satisfaction was not as strong compared to other pro-environmental behaviors. However, they were still significant (Schmitt et al., 2018). Binder and Blankenberg (2017) also found a positive correlation between pro-environmental behaviors and well-being (life satisfaction), where five out of the eleven pro-environmental behaviors were reduction behaviors. They suggested that these behaviors provide a green self-identity. This identity increases subjective well-being by inducing a feeling of altruism and meaning in life. Increased well-being may result from consumption reductions because they require giving up one's resources with the goal of providing more for others, and this provides a feeling of "doing good" (Binder and Blankenberg, 2017; Ortiz and Sarrias, 2022; Schmitt et al., 2018).

There were also some mixed results when pro-environmental behaviors were studied. Ibáñez-Rueda et al. (2020) included seven reduction items in their fifteen pro-environmental behaviors. The behaviors were significantly and positively related to eudaimonic well-being but not significantly related to hedonic well-being (Ibáñez-Rueda et al., 2020). A similar result was found in a study of ethical consumption where seven out of the thirty items were reduction behaviors; there was a negative correlation with hedonic well-being (pleasure orientation), but there was a positive association with perceived eudaimonic well-being (flourishing, life satisfaction, psychological well-being) (Ganglmair-Wooliscroft and Wooliscroft, 2019). These two studies suggested that hedonic well-being may be more negatively impacted by consumption reductions and more general pro-environmental behaviors. Binder et al. (2020) found a negative association between green behaviors (including consumption reductions) and well-being (life satisfaction), but a positive effect was found for people with a stoic outlook on life. Their notion of happiness is defined as "accepting things as they are." Consumers may perceive consumption reductions to be inconvenient, and they may prevent immediate gratification of hedonic needs because it often requires time and effort, but these sacrifices may support long-term well-being (Binder et al., 2020). The consumer's outlook on life (i.e., stoicism) also seems to play an important role in how reductions in consumption and other pro-

environmental behaviors affect well-being.

4. Discussion

This literature review illustrates that reduced consumption has a mixed relationship with well-being. In this chapter, we discuss the theoretical and practical contributions, propose future research avenues, and reflect on the study's limitations.

4.1. Theoretical implications

This paper contributes to the field of sustainable consumption by providing the first systematic literature review on the relationship between reduced consumption and well-being. Consumption is argued to be essential for well-being, but this does not mean that affluent societies cannot lower it without harming well-being. From the selected papers, it seems that reductions in consumption often do not influence well-being, and they may benefit consumers by simplifying their lives and bringing financial and temporal freedom. However, there are also cases where reduced consumption may limit success and pleasure, leading to dissatisfaction: when the reduction is not voluntary and threatens basic consumption needs, when the consumer's reference group is perceived to be consuming more, or when short-term well-being is negatively impacted. These negative conditions need to be considered carefully. Reduced consumption is not a silver bullet; like sustainable consumption or pro-environmental behavior, we must also consider the potential negative consequences on well-being and the rebound effects of reduced consumption.

Research focused on specific lifestyles, such as voluntary simplicity, minimalism, or frugality, did not illustrate negative associations with well-being. Studies that did not find statistically significant results suggest that reductions in consumption were not perceived to be sacrifices or that it was due to the participant sample. Research that found a positive relationship suggests that low material values and increased control and freedom were responsible for this result. The intentional nature of these lifestyles suggests that participants likely feel justified in their choices, leading to positive outcomes. Individuals who opt for a simplified lifestyle are often striving for higher values, thereby enhancing their self-image. Adopting a reduced lifestyle can be considered a privilege of wealthier consumers. It remains unclear whether these lifestyles genuinely result in reduced consumption, as the studies did not incorporate actual consumption data into their analyses.

Most studies focused on hedonic well-being, but studies that measured both hedonic and eudaimonic showed an interesting difference. Hedonic well-being seemed more negatively impacted by consumption reductions and more general pro-environmental behaviors than eudaimonic well-being. Consumers may perceive consumption reductions to be inconvenient, and they may prevent immediate gratification of hedonic needs because it often requires time and effort, but these sacrifices may support long-term well-being. Zawadzki et al. (2020) found pro-environmental behavior to be beneficial for well-being because it is meaningful, and this may explain why eudaimonic well-being was supported or unaffected by reduced consumption. The effect on hedonic versus eudaimonic well-being is also likely related to the consumer's notion of happiness and outlook on life. Some consumers value long-term goals more than short-term comfort, and vice versa. Other traits, such as age, probably influence this outlook; people typically become more financially stable with age, and their life goals may become more apparent, making consumption reductions more likely.

Other factors influencing the studied relationship are consumption norms and the consumption of the peer group. Previous studies have illustrated that well-being is generally resilient to changes in carbon footprint (Fanning and O'Neill, 2019; Vita et al., 2020). Fanning and O'Neill (2019) showed that the growth of carbon emissions brings very little (if any) return in terms of well-being. However, the norm of overconsumption may prevent consumers from attempting to reduce consumption. In nations with non-growing economies (i.e., the US and UK), consumers reported lower happiness when consumption stagnated, while in growing economies (i.e., India and China), consumers' happiness was unaffected by plateaus or reductions in consumption (Fanning and O'Neill, 2019). A possible explanation for this is that in places where consumer expectations are high, and individuals are primed to focus on material achievements, a decrease in consumption has a more significant impact on well-being. The people and culture surrounding a person have an influential role in consumption habits and well-being; the social group that consumers compare themselves to affects consumer happiness significantly (Li and Chen, 2022; Wang et al., 2019). This was illustrated by Li and Chen (2022) when they found that consuming more energy than the reference group decreased people's life satisfaction. Consumers may feel guilty for consuming more than their peers, which likely contributes to decreased well-being from overconsumption. It is important to highlight that countries and cultures have varying values and resources, perhaps making some forms of consumption more valuable regarding well-being in certain cultures. As a result, the impact of consumption reductions on well-being likely varies by culture and nation.

This review focused on reduced consumption and its effect on well-being, but well-being also affects consumption. For example, people with depression consume more hedonic items (Alcoforado et al., 2022), and sadness has been associated with consuming more (Guven, 2012). On the other hand, happier people were found to consume less (Mynaříková and Pošta, 2023). Gratitude has been shown to buffer against overconsumption of resources (Kates and DeSteno, 2021), and perceived happiness also served as a significant predictor for water conservation behaviors (Diaz et al., 2020). Such results point to a bidirectional relationship. It should also be considered that well-being has the potential to increase consumption as it can positively affect leisure activities and food consumption outside of the home. The promise of pleasure in hedonic consumption provides a strong ongoing motivation for consumers to experience pleasurable feelings again (Dominko and Verbič, 2022). In sum, different emotions have various effects on consumer behavior.

The type of consumption can also affect well-being, but this was out of the scope of our paper. Previous research has shown that only leisure consumption had a statistically significant association with well-being (life satisfaction) (Deleire and Kalil, 2010). Charity and gifts also had a small but significant relationship with well-being, but durables, personal care and clothing, health care, food, utilities, housing, and vehicles were not significantly associated with well-being (life satisfaction). The reasoning for this is that compared to material goods, experience-based consumption is more suitable to meet specific psychological needs, for example, the support of social relationships (Deleire and Kalil, 2010; Pugno, 2008). Weingarten et al. (2022) suggest that material and experiential qualities both have positive relationships with well-being (happiness) and that consumers can derive well-being from consumption that is high on both aspects. However, experiential consumption does have a significantly stronger effect on well-being than material consumption.

4.2. Practical implications

It is not realistic to expect all consumers to immediately adopt a reduced lifestyle, as it likely requires a mindset change that takes time, but also, consumers are often bound by external conditions (i.e., infrastructure, financial limitations) that prevent them from choosing to reduce consumption. Businesses and governing organizations have a significant role in addressing environmental issues as they can raise awareness regarding consumption and increase mindful consumption, but they can also change the systematic barriers that limit consumers' freedom to choose and act.

Strategies for reducing consumption include increasing product longevity through sustainable design and extended warranties,

increasing repair options, and changing infrastructure to support low-impact behavior (i.e., cycling lanes). However, consumption norms in affluent societies would need to change to achieve reductions while maintaining well-being. Marketing strategies and marketing policy play a significant role in this change (Gossen and Kropfeld, 2022). Businesses often market their products and services to attract consumers with specific emotions, but some emotions may drive overconsumption. Instead, certain emotions could be leveraged in marketing to reduce consumption, and reduced consumption behaviors can be used to increase well-being.

Traditionally, marketing has been used to increase consumption, but it is possible to market in other directions. Demarketing, sufficiency marketing, and advertising limits have potential roles in reducing consumption. Patagonia's "Don't Buy This Jacket" advertisement and REI's Black Friday closure are some recent examples of demarketing in practice. However, whether such practices successfully achieve consumption reductions or how such communication impacts well-being is unknown. These marketing practices may just improve a company's brand image and increase sales.

Policy is essential in encouraging reductions in consumption while maintaining well-being. It can be used to push companies to move away from the growth-centered model and ensure that businesses exist to satisfy genuine needs. Instead of using marketing to make consumers think they need more, businesses could decrease their advertising and use their marketing budgets for other projects. Reducing consumption while maintaining well-being requires a radical shift in values; its achievement is a gradual process involving consumers, business, and government.

4.3. Limitations and future research

Our research was subject to several limitations. Firstly, most selected articles relied on self-reported data and did not use actual consumption data. Most studies provided correlational evidence, and only a few investigated a causal relationship. Additionally, we focused on one direction of this relationship, but well-being also impacts consumption behavior. Several of the selected studies included reduction behaviors in their environmental or ecological behavior measure but did not analyze reduced consumption as a separate concept (Binder et al., 2020; Binder and Blankenberg, 2017; Brown and Kasser, 2005; Ganglmair-Wooliscroft and Wooliscroft, 2019; Ibáñez-Rueda et al., 2020; Tiwari, 2016). Reduction behaviors were often grouped with purchasing green products, activism, recycling, etc., and it may not be possible to attribute the results entirely to reduced consumption. Scales for sustainable consumption vary widely, but reduced consumption is its own concept. Future research should strive to delineate the different aspects of sustainable consumption and reduced consumption in their measurements as the behaviors differ. Finding the balance between traditional consumption and reduced consumption, or the sweet spot of consumption, is a complex task, and insights into which reductions in consumption are most influential on well-being are needed. Future studies should use a comprehensive measure of well-being rather than focusing on only hedonic or eudaimonic well-being. Hedonic and eudaimonic well-being likely influence each other, and studying only one does not provide a complete picture. Differences in how well-being was measured may be responsible for varying results.

Future research should focus on supporting reduced consumption through alternative marketing. Understanding how interventions such as demarketing or reduced opening hours affect purchasing habits and well-being is essential to achieving a paradigm shift. Few companies and government policies stimulate decreased consumption, but both influence consumer behavior. It is necessary to know how effective reduction strategies are in changing purchase decisions and how they affect consumer well-being. Mindfulness and specific aspects of well-being, such as autonomy (or lack thereof), positive relations, materialistic values, and environmental mastery, likely play an essential role in the acceptance of reduction interventions. Support of these factors is likely needed for successful implementation. Understanding the potential rebound effects of reduced consumption is also necessary to prevent further overconsumption. This information can provide recommendations for marketing so businesses and policymakers can make realistic changes.

5. Conclusion

This systematic literature review provides a comprehensive overview of the relationship between reduced consumption and well-being. Consumption is a complex concept, and it can provide significant improvements in well-being. However, overconsumption can also be significantly detrimental to well-being. The results of this review illustrate that reduced consumption often has a positive or no impact on well-being. Negative relationships were also found, but these were the minority. There is potential for consumption reduction in affluent societies without negatively impacting well-being, but barriers to behavior change, such as the consumption of our peer group and societal norms, remain. It is essential to recognize the role of companies and governing organizations in shaping consumers' attitudes and decision-making. They have the potential to foster systemic change by implementing practical reduction interventions. However, such interventions need to be critically tested to mitigate environmental rebound effects and prevent consumers from perceiving limitations to their well-being. Our planet can be more than a "material world," but it requires collective change from businesses, governments, and consumers alike.

Declaration of competing interest

I declare that there is no conflict of interest regarding the publication of this paper. I, the corresponding author on behalf of all contributing authors, hereby declare that the information given in this disclosure is true and complete to the best of my knowledge and belief.

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