



# Conceptualising and measuring consumer perceptions of brand wastefulness

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## Abstract

Consumers consider the wastefulness of brands and are predisposed to exhibit aversion to those perceived as wasteful. However, there is a lack of consensus on how consumers associate wastefulness with brands and how this impacts downstream consumer brand responses. Integrating conceptualisations in the literature with original consumers' insights, we conceptualise consumer perceived brand wastefulness (CPBW) as a multidimensional construct comprising perceptions of (1) unnecessary consumption, (2) inefficient utilisation, and (3) tangible waste. A multi-phase scale development process validated a CPBW scale measuring each dimension. The scale distinguished between consumer perceptions of more vs less wasteful brands and demonstrated CPBW as conceptually distinct from perceptions of brands' environmental friendliness and corporate social responsibility (CSR). CPBW was related to unfavourable consumer brand responses, including a reduced purchase likelihood, lower willingness to pay a price premium, negative self-conscious emotions, and lower perceptions of brand quality and credibility. We discuss the theoretical and managerial implications and directions for future research.

**Keywords** Consumer perceived brand wastefulness · Waste aversion · Sustainability · Scale development

## Introduction

Many global brands, such as IKEA, recognise the importance of reducing waste in the production and consumption of their products and services to “do their part” for

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“The world around us moves fast and so do we. We change the place we call home more often than before we buy new things and get rid of others at a faster pace than we used to. A sofa is suddenly too small or we get tired of its style. We leave the lights on even when we're not home. Every day we fill up our rubbish bins with big and small things. We're using—and wasting—more energy and resources than ever before and this isn't good news for the planet but what if we could all pull together to turn things around? At IKEA we're working hard to do our part and we want to help you do yours” (IKEA 2023).

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the planet. For example, IKEA produces and offers circular products—such as rugs made with leftover fabric from their bed linen production—that customers can choose, and which come with recyclable packaging and home delivery via zero-emissions transport (IKEA 2022). While there are various reasons why brands may consider waste reduction initiatives, one incentive is to meet consumer demand for more sustainable, less wasteful brand choices (Deloitte 2023; Ipsos 2020).

Consumers are becoming increasingly sensitive to wastefulness due to factors such as awareness of government frameworks (e.g., United States EPA, 2023; European Commission 2023) and media attention (e.g., ABC 2023; BBC 2023) and look for brands to support less wasteful choices. This is evident in consumers' adverse responses to brands perceived as wasteful, such as lower brand attitudes (van Herpen and de Hooge 2019) and avoidance behaviour (Perera et al. 2018; Petit et al. 2020). However, the psychological and idiosyncratic nature of wastefulness (Arkes 1996; Scanlan 2005) suggests that a brand perceived as wasteful by one consumer may not be viewed as such by the next. Thus, there is a need to understand and measure consumers' brand associations with and responses to wastefulness. Understanding how consumers define wastefulness



is vital to understanding the psychological mechanisms underlying sustainable consumption (Sun et al. 2021) and how brands can improve their sustainability to enhance their customer-based brand equity (Moise et al. 2019).

Consumers' aversion to wastefulness is established in the literature (Arkes 1996; Bolton and Alba 2012; Moore and Taylor 2010; Sun and Trudel 2017; Zultan et al. 2010) and is shown to positively impact sustainable consumer behaviour (e.g., Petit et al. 2020; Tari and Trudel 2023). However, across this field of research, there is a lack of consensus on how wastefulness is defined. For instance, some scholars conceptualise wastefulness as spending more than necessary (Arkes 1996; Zultan et al. 2010), while others describe it as unused utility (Bolton and Alba 2012), throwing things away (Guillard 2018), and leftover resources (Moore and Taylor 2010; Zhu, 2011). Consequently, brands have no clear criteria to assess the extent consumers perceive them as wasteful. Moreover, research has yet to provide a consumer perspective on what comprises wastefulness, how wastefulness associations become linked to brands, and the implications on consumer brand responses.

This paper aims to investigate what and how wastefulness associations become linked to brands in the minds of consumers and the impact these have on consumer brand responses. Our paper contributes to the extant literature in four ways. First, integrating the various conceptualisations of wastefulness in the literature with original consumer insights, we find that consumers associate wastefulness with (1) unnecessary consumption, (2) inefficient utilisation, and (3) tangible waste in production and consumption. Drawing on the cognitive psychology perspective of brand equity and the associative network memory model (Keller and Swaminathan 2020), we conceptualise consumer perceived brand wastefulness (CPBW) as *an associative brand belief arising from consumers' perceptions of the extent to which brands give rise to or are marked by unnecessary consumption, inefficient utilisation, and tangible waste in production and consumption*. Second, we develop a valid and reliable scale to measure CPBW. We demonstrate that our scale can distinguish among consumers' subjective perceptions of more versus less wasteful brands and that CPBW is conceptually distinct from perceptions of brands' environmental friendliness and corporate social responsibility (CSR). Third, we highlight the implications of CPBW for brands by showing its negative impact on consumer brand responses, such as decreasing consumers' purchase likelihood, perceived brand quality, and willingness to pay a price premium. These findings emphasise the importance of reducing CPBW arising through consumers' knowledge of brands' marketing activities. Finally, we offer directions for future research to further understand the application of our scale and how brands can facilitate sustainable, less wasteful consumption by measuring and managing CPBW.

According to our research objectives, we organise this paper into two key sections (see Fig. 1). The first section reviews prior literature examining the role of waste in consumer decision-making. We integrate scholarly conceptualisations of wastefulness with original consumer insights to identify the defining dimensions comprising consumers' perceptions of wastefulness. We then theorise how these dimensions become linked to brands, introducing the concept of CPBW. The second section details our process for developing a scale to measure the dimensions of CPBW. We begin by describing the item generation process (Study 1) and validating the three-dimensional structure of CPBW (Study 2). Next, we demonstrate the scale's discriminant validity (Study 3a) and known-groups validity (Study 3b). Finally, we examine the role of CPBW in a nomological network, investigating its consequence on consumer brand responses (Study 4). We conclude by discussing the implications for theory, practice, and future research.

## Conceptual background

### Consumers' waste aversion

The influence of perceived wastefulness in consumer decision-making was introduced by Arkes (1996), who examined consumers' tendency to engage in irrational economic activity to avoid wasting resources. Arkes (1996) demonstrated consumers' propensity to continue in endeavours that compromise their self-interest (e.g., continuing to attend an unenjoyable event) rather than ignoring irrelevant sunk costs (e.g., the cost of the ticket). The psychological mechanism explaining this phenomenon was wastefulness. Specifically, abandoning the sunk cost would appear *to waste* the expended monetary resources (Arkes 1996). Arkes' findings accentuated consumers' desire to avoid wastefulness and its impact on consumers' purchase and consumption choices.

Given these important consequences, there has been increasing scholarly interest in defining and understanding consumers' aversion to wastefulness (e.g., Bolton and Alba 2012; Moore and Taylor 2010; Perera et al. 2018; Sun and Trudel 2017; Tari and Trudel 2023; Zultan et al. 2010). Wastefulness has been shown to evoke negative emotions, such as guilt and shame, and can reduce the utility associated with wasteful options (Russell et al. 2017; Sun and Trudel 2017). Consumers' aversion to wastefulness highlights a need for brands to identify ways to reduce the extent consumers perceive them as wasteful.

Our paper builds on this field of waste aversion research and adopts a behavioural economics perspective to understand consumers' responses to waste (e.g., Arkes 1996; Bolton and Alba 2012; Moore and Taylor 2010; Zultan et al. 2010). In particular, we take a psychology-oriented approach



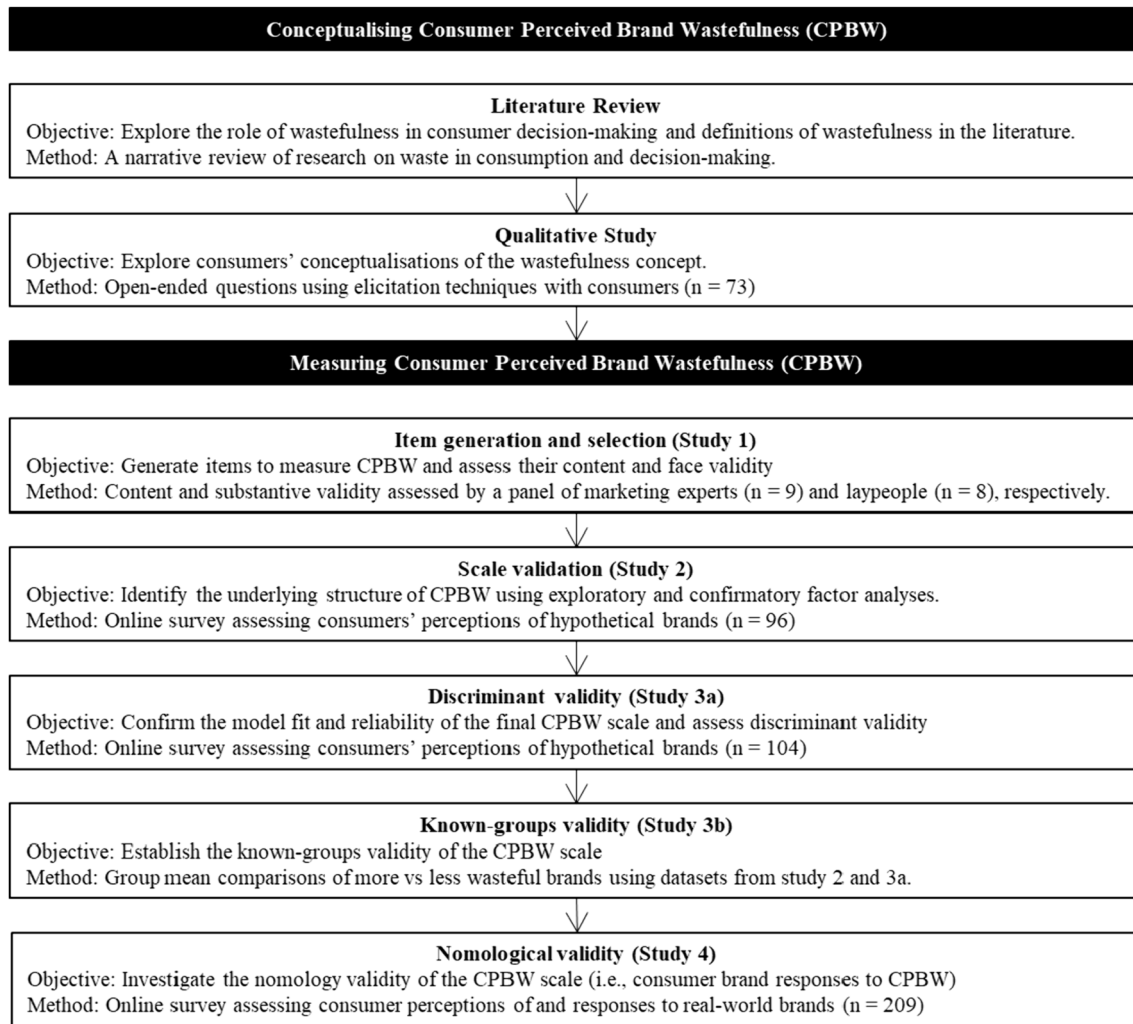


Fig. 1 Summary of the studies in this research

(Schanes et al. 2018) to understand consumer perceptions of wastefulness and its implications for sustainable brand management.

### Defining brand wastefulness

There is no definition of brand wastefulness in the literature nor an understanding of how consumer perceptions of wastefulness apply to brands. However, the more general concept of wastefulness has been examined in other contexts, providing insights into how consumer perceptions of brand wastefulness may be defined. Therefore, we begin our enquiry by investigating conceptualisations of wastefulness in the literature examining the role of waste in consumer decision-making. We complement these scholarly conceptualisations with a qualitative study exploring consumers' perceptions of wastefulness. We integrate perspectives from the literature into our consumer insights to define the dimensions

encompassing consumer perceptions of wastefulness and how these may be applied to brands. We conclude this section by drawing on the cognitive psychology perspective of brand equity and the associative network memory model to conceptualise consumer perceived brand wastefulness, i.e., how perceptions of wastefulness become linked to brands in the minds of consumers.

### Conceptualisations of wastefulness in the literature

We identify three tenets of the wastefulness concept. First, wastefulness is *subjective and perceived* by individuals. For instance, drawing on *Webster's Seventh New Collegiate Dictionary* (1972, p. 1006), Arkes (1996) described wastefulness as 'to spend or use carelessly' with the notion of "carelessly" held "in the eye of the beholder" (p. 214), highlighting the psychological and idiosyncratic nature of wastefulness. Further, exploring modern and premodern



uses of the term, Scanlan (2005) suggests that wastefulness symbolises “improper use” and therefore “operates within a more or less moral economy of the right, the good, the proper, their opposites and all values in between” (p. 22). Individuals’ moral assessments of “proper use” lie in a system of values and are, thus, highly personal and subject to change based on social and cultural factors (Scanlan 2005). Many scholars acknowledge the subjective and psychological nature of wastefulness by measuring the concept in their research (e.g., how wasteful would you rate the [object]<sup>1</sup> to be; Bolton and Alba 2012; Haws et al. 2012). Our research focuses on understanding consumers’ subjective perceptions of wastefulness in the context of brands and how these can be measured.

Second, wastefulness can be perceived as *an act and an instance*. Research that examines wastefulness as an act examines consumer responses to behaviours – such as spending more on an item than necessary (Arkes 1996; Zultan, 2010), buying things that are not needed (Paschen et al. 2020), taking more than what is being consumed (Sun and Trudel 2017), failing to utilise or consume something fully (Arkes 1996), and throwing things away (Guillard 2018; Haws et al. 2012; Schanes et al. 2018)—that can give rise to waste. Wastefulness is also conceptualised as an instance (i.e., end-state)—such as the presence of leftover utility or residual value (Bolton and Alba 2012; Haws et al. 2012; Moore and Taylor 2010) and a difference in the number of resources acquired and required (Zhu, 2011)—that can mark a given situation. We focus on understanding how brands perceived as giving rise to or marked by such acts and instances are associated with wastefulness.

Third, wastefulness is a *multidimensional concept*. Table 1 shows various definitions of wastefulness exist across the literature, demonstrating a lack of consensus concerning the dimensions that may comprise perceptions of wastefulness. Common themes we identify as underlying these different definitions include wastefulness as spending more than necessary (Arkes 1996; Zultan, 2010), leftover or unconsumed resources (e.g., Bolton and Alba 2012; Moore and Taylor 2010; Zhu, 2011), and throwing things away (e.g., Guillard 2018; Haws et al. 2012). Our research investigates the different dimensions underlying consumers’ perceptions of wastefulness and how these apply to brands.

## Consumer perceptions of wastefulness (qualitative study)

The literature suggests wastefulness is multidimensional and perceived by consumers; however, research taking a consumer perspective to define the dimensions of wastefulness is lacking. Therefore, we conducted a qualitative study to explore the key concepts and dimensions comprising consumers’ perceptions of wastefulness. We support our theorising by integrating scholarly conceptualisations of wastefulness into our consumer insights, focusing on how the identified dimensions comprising consumer perceptions of wastefulness may apply to brands.

*Method.* Seventy-three respondents from a large public university community provided written responses to open-ended questions administered online in Qualtrics. Our sample was recruited using convenience sampling (i.e., advertising on campus and word of mouth) and comprised predominantly female respondents (78%), aged between 18 and 35 (77%), and educated with a university degree (86%). We used open-ended elicitation techniques to construct the interview questions (Babin and Zikmund 2016). First, we asked a free association question—*what comes to mind when you think of wastefulness?*—to investigate respondents’ top-of-mind reactions to the wastefulness concept. Second, we asked respondents to complete a free listing task – *list three things you would describe as wasteful* – to explore attitude objects (i.e., items and behaviours) associated with wastefulness, and for each listing, *describe why you think it is wasteful* (Babin and Zikmund 2016). Finally, we asked, *How would you describe wastefulness?* to understand what comprises respondents’ perceptions of wastefulness. Respondents were asked to include a real or hypothetical example of wastefulness in their description.

*Analysis and Results.* Machine-learning-based text analysis software Leximancer was used to identify concepts and themes emerging from the interviews. Leximancer performs a form of automatic content analysis on a unified body of text to determine a list of important lexical terms based on word frequency and co-occurrence (Smith and Humphreys 2006), thus providing valid, reliable, and reproducible concept mapping results (Angus et al. 2013; Smith and Humphreys 2006). Although Leximancer automatically identifies concept lists and the mapping process, making sense of the concepts and maps remains in the hands of the researcher. We used Leximancer to determine consumers’ most relevant (frequency > 5) top-of-mind wastefulness associations (Table 2) and attitude objects (i.e., items and behaviours) associated with wastefulness (Table 3) and to generate a concept map of the dimensions comprising consumer perceived wastefulness (Fig. 2).

The concept map highlights the key concepts defining consumer perceptions of wastefulness, the linkages between

<sup>1</sup> We use the term ‘object’ to refer to an attitude object towards which an individual can hold salient beliefs (e.g., “person, a group of people, an institution, a behaviour, a policy, an event etc.”; Fishbein and Ajzen 1975, p. 12).



**Table 1** Conceptualisations of wastefulness in the literature

Source	Conceptualisation	Measurement
Arkes (1996)	“Wastefulness occurs when (1) “a person spends more on an item than is necessary”, and (2) “a person does not fully utilize the item that has been purchase” (p. 214)	Experimental manipulation
Bolton and Alba (2012)	“The utility associated with a purchase that will go unconsumed” (p. 370)	Experimental manipulation + Single-item (“How would you rate the item that you purchased?” as “wasteful”, p. 374)
Guillard (2018)	“Wastage equals throwing things away” (e.g., “keeping/accumulating = not throwing away = not wasting”, p. 280)	Phenomenological interviews
Haws et al. (2012)	Discarding goods with residual value	Single-item (“how wasteful do you think it would be to [behaviour]”, p. 232)
Moore and Taylor (2010)	There are leftover resources that will not be used or consumed	Experimental Manipulation
Paschen et al. (2020)	“Buying things that are not needed and would likely be thrown out” (p. 336)	N/a (Twitter data)
Scanlan (2005)	“The notion of waste generally refers to an imbalance. [...] For example, such an imbalance is reflected in perceived excess of consumption [...]. But whilst waste clearly stands for a remainder; a potential exhausted through use, ‘to waste’ is equally to squander in the distinct sense of not making the <i>best</i> use of something (time, resources, opportunities, and so on) [...]. Clearly, then, the meaning of ‘waste’ carries force because of the way it symbolizes an idea of improper use” (p. 22)	N/a
Schanes et al. (2018)	“Throwing away food as improper behaviour” (p. 981)	N/a
Sun and Trudel (2017)	“Taking more resources than what is being consumed” (p. 293)	Experimental Manipulation
Zhu (2011)	“The difference between the amount of resources acquired and the amount of resources required for a consumption situation” (p. 8)	Observed Leftover Resources (Experiments)
Zultan (2010)	“Spending more money than necessary” (p. 489)	Experimental Manipulation
<i>Our Definition</i>	An associative brand belief arising from consumers’ perceptions of the extent to which brands give rise to or are marked by unnecessary consumption, inefficient utilisation, and tangible waste in production and consumption	Eleven-item multidimensional scale (Table 4)

these concepts, and how these concepts are clustered into higher-level themes (i.e., dimensions).

As shown in Fig. 2, wastefulness was perceived as a negatively valenced concept that is “*detrimental*” and results in undesirable outcomes, particularly for the “*environment*.” For instance, Respondent 5 (R5) described wastefulness as the “excessive use of things which are unnecessary or detrimental”. At the same time, R35 highlighted that wastefulness “draws a further dependence on virgin materials and creates a bigger environmental mess”. Wastefulness was perceived as arising in “*consumption*” and “*production*”. For example, R40 described wastefulness as “production and consumption that occurs beyond what is necessary”. Specifically, respondents recognised wastefulness as a phenomenon occurring in the production and consumption of goods and services, such as food: “We produce and distribute more food than we need, and we also buy [i.e., consume] more than we need” (R42). Another respondent perceived

beef products as wasteful because of the production process: “inefficient use of water and feed to [are used] produce the protein” (R60), while single-use plastic items were considered wasteful because they “increase the amount of plastic produced” (R33).

Consumer perceptions of wastefulness comprised three key dimensions: (1) unnecessary consumption, (2) inefficient utilisation, and (3) tangible waste, which we discuss as follows.

*Unnecessary consumption.* Several participants perceived wastefulness as the consumption of more resources than “*necessary*”, such as “using more of something than is needed” (R24) and buying more than needed or buying things that are not needed (R25, R53, R57, and R66). For example, fast fashion was perceived as wasteful due to “people buying clothes that they do not need” (R17). The concept of unnecessary was closely linked to the concept of “*excessive*”, denoting the consumption of “*excess*” or





**Table 2** Consumers' Most Relevant Top-of-mind Wastefulness Associations

f	Association (concept)	Association structure (Exemplar word terms comprising the concept)
51	Waste	Waste; Household/commercial/resource waste; Rubbish; Trash; Garbage
51	Food	Food waste; Throwing out food; Excess food
32	Plastic	Plastic; Plastic bottles/bags; Single-use plastic
23	Water	Wasting water; Leaving water running; Excess water usage
21	Natural Environment	Environmental impact/harm; Not eco-friendly
18	Money	Wasting money; Spending unnecessary money
17	Resources	Wasting resources; Careless with limited resources; Natural/non-renewable resources
16	Utilising	Not using fully; Using too much; Poorly utilised
16	Disposing	Disposal; Throwing out food/groceries/fixable items
16	Unnecessary	Unnecessary consumption; Buying/spending more than needed
13	Recycling	Recycling; Not recycling
12	Wasting	Wasting water/food/time/money/finite resources
12	Time	Wasting time
12	Pollution	Pollution; Carbon emissions; Litter
11	Excess	Excess; Excess packaging/electricity/water/plastic usage
11	Overconsumption	Overconsumption; Gluttony
10	Fashion	(Fast) fashion; Unnecessary clothes
9	Buying	Buying unnecessary items; Buying in excess
9	Packaging	Unnecessary/excess packaging; Single-use packaging; Plastic packaging
9	Single-use	Single-use; Single-use packaging/bags/bottles
9	Landfill	Landfill; Garbage dumps; Disposables/plastic/mass-produced clothing going to landfill
7	Remaining Utility	Not composting/donating/recycling/reusing; Throwing out useful items
6	Leftovers	Leftover(s); Leftover food
6	Obsolescence	Planned obsolescence
6	Management	Poor management/planning; Waste management

*f*=frequency, the number of times the concept was elicited

**Table 3** Most Relevant Attitude Objects Consumers Associated with Wastefulness

f	Attitude object (concept)	Examples (key examples comprising the concept)
50	Food	Buying excess food; Not finishing food; Discarding food
39	Buying	Buying more than needed; Buying excess; Buying and not using
27	Plastic	Plastic; Single-use/disposable plastic; Buying plastic
23	Single-use items	Using/buying single-use/disposable items (e.g., bags, water bottles, coffee cups)
21	Discarding	Throwing out edible food/recyclable materials
19	Packaging	Excessive packaging; Plastic/single-use packaging
19	Water	Using excessive water; Using water for too long
17	Leaving utilities on	Leaving the lights/appliances/water running when it is not being used
15	Clothing	Fast fashion; Buying excessive clothes
10	Time	Long meetings without an agenda; Wasting time on social media
10	Not recycling	Not recycling recyclable items
9	Eating	Excessive eating; Not eating food that has been purchased
7	Driving cars	Driving instead of walking/taking public transport; Petrol-guzzling cars

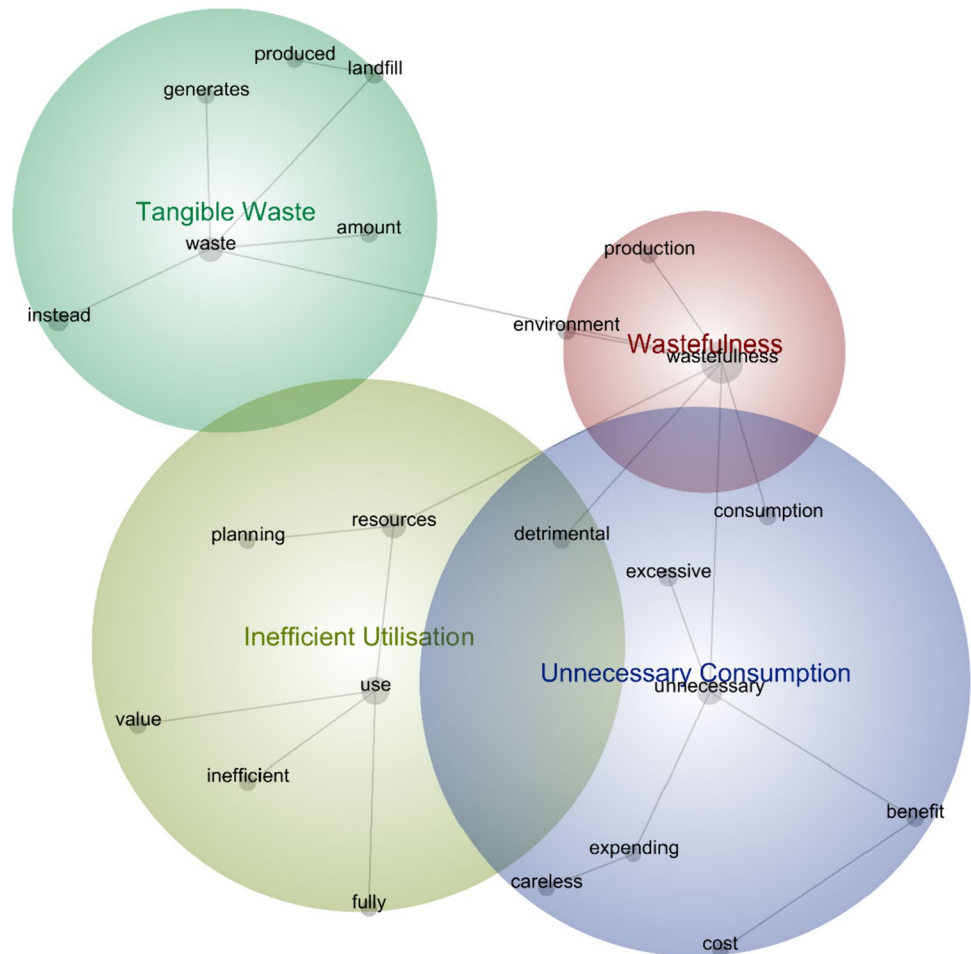
*f*=frequency, the number of times the concept was elicited

“extra” resources. For example, R71 described wastefulness as “buying unnecessary or excess things” such as “excess clothing”. The concept of unnecessary was also linked to

“*expending*”, which referred to unnecessarily using up, consuming, or spending monetary or non-monetary resources. For example, “being wasteful with money by spending it on



**Fig. 2** Concept map of consumer perceptions of wastefulness



things that you do not need or have no use for” (R26) and “using more resources than necessary because they are easily accessible” (R39).

Perceptions of wastefulness as unnecessary consumption align with and expand on conceptualisations by Arkes (1996) and Zultan et al. (2010), highlighting how unnecessary expenditure not only refers to perceptions of monetary expenditure but also of expending more resources than necessary. The terms “consumption” and “expenditure” were often used synonymously. This is important because by conceptualising consumption as the expenditure of resources, one can understand consumer responses to resource depletion that inherently accompanies consumption (Lee et al. 2018). Unnecessary consumption can arise due to “excessive consumption habits” (McEachern et al. 2020) and when “individuals are encouraged to consume more” because of being motivated by “wants” rather than “needs” (Lai & Ho, 2020, p. 1). For instance, Paschen et al. (2020) illustrate that a key motivation for consumers’ participation in #BuyNothingDay is considerations of wastefulness, including “questioning whether [they] actually need the items” and “avoiding buying things that are not needed” (p. 336).

Our findings suggest that consumers may perceive brands as wasteful should they give rise to or be marked by the consumption or expenditure of resources of more resources than necessary.

*Inefficient utilisation.* This dimension comprised perceptions of wastefulness as the “inefficient use of (a) resource(s)” (R27, R39, R40, R54, and R60). For instance, long meetings without an agenda were perceived as inefficient with time (R60) and single-use plastic packaging was perceived as inefficient with a finite petroleum-based resource (R40). Inefficient utilisation encompasses (a) the consumption or expenditure of resources and (b) the failure to “fully” use these resources. For example, long meetings without an agenda consume and expend time; however, they fail to fully utilise this time to its maximum advantage.

Perceptions of wastefulness as inefficient utilisation can be likened to unused utility (Bolton and Alba 2012) or residual value (Haws et al. 2012). For brands, unused utility may manifest through inefficient use of resources in business operations and processes (Schmidt 2010). Thus, brands can reduce perceptions of their wastefulness by “doing better” with less (e.g., “reducing energy waste by improving energy

efficiency”; Labanca and Bertoldi 2018). For instance, hotels can decrease water and energy waste by increasing the efficiency of their operations that use these resources (e.g., encouraging employees and guests to not change bedding and towels daily; Chen 2015). These findings suggest brands may be perceived as wasteful should they give rise to or be marked by the inefficient use of resources.

*Tangible waste.* This dimension comprised consumers perceived wastefulness as generating tangible “waste”, such as garbage, rubbish, trash, and physical leftover(s). For instance, respondents described single-use plastic packaging and single-use plastic cutlery (R16, R19, R20, and R27) and fast fashion (R17) as wasteful because they “produce lots of extra waste” (R20) and people “dispose of them after a short period of time” (R17). Respondents perceived “landfill” as a form of disposal, resulting in resources becoming tangible waste “instead” of serving another purpose. For example, acts of “throwing away food instead of composting” and “not recycling recyclable products” were perceived as wasteful because resources become waste (go to landfill) instead of serving another purpose.

This dimension acknowledges the “materiality of waste” (Anderson et al. 2018) and “tangibility [as] a natural correlate of waste” (Bolton and Alba 2012, p. 377). The concept of tangible waste has received increasing scholarly interest in the fields of solid waste management (Ma and Hipel 2016), sustainability (Zaman 2015), and marketing (Principato et al. 2021) and has been explored across a variety of contexts, such as food waste (Vizzoto et al. 2021), packaging waste (Jacobsen et al. 2022), and fashion/textile waste (Rotimi et al. 2021). Brands may be perceived as wasteful should they give rise to or be marked by tangible waste in production and consumption, such as by offering products with larger package sizes (Petit et al. 2020), over-packaging (Elgaaied-Gambier 2016), and bundling tangible goods (Bolton and Alba 2012). At the same time, brands may reduce tangible waste associations by providing reuse, recovery and redistribution, and recycling opportunities (Rotimi et al. 2021).

### Conceptualising consumer perceived brand wastefulness (CPBW)

We apply a cognitive psychology perspective of brand equity and the associative network memory model (Keller and Swaminathan 2020) to theorise how the dimensions comprising consumer perceptions of wastefulness become linked to brands. According to this perspective, memory is an associative network of nodes (i.e., brand associations) and connecting links (Srull and Myer, 1989). Brand associations may reflect brand attributes (descriptive features characterising brands’ products or services) or brand beliefs (personal

meaning people attach to attributes; Keller and Swaminathan 2020).

Our qualitative findings emphasise consumers’ consideration of wastefulness in both production and consumption. Therefore, brands seeking to reduce their associations with wastefulness must adopt marketing activities—such as producing and offering less wasteful products and services that consumers can voluntarily choose—that reduce wastefulness in production and consumption. Given that consumers’ brand associations are formed based on their knowledge of brands’ activities (Keller and Swaminathan 2020), brands must communicate how they reduce waste in the production and consumption of their goods and services. This communication is particularly relevant for brands whose waste reduction activities may not be easily observed by consumers, such as resource use in production (e.g., reducing inefficient use of resources, including water and fabric, in garment manufacturing; Xu and Bolton, 2023) or where production processes can translate into reducing waste in consumption (e.g., producing goods with greater durability and a longer life cycle to reduce the frequency of purchases; Sun et al. 2021). It is vital for brand managers to understand what and how brand wastefulness associations are formed in consumers’ minds based on their knowledge of brand activities.

We identify three dimensions of wastefulness that consumers may associate with brands: (1) unnecessary consumption (i.e., the consumption of more resources than necessary), (2) inefficient utilisation (i.e., the inefficient use of resources), and (3) tangible waste (i.e., tangible leftovers that will become waste instead of serving another purpose). Integrating our consumer insights with the three tenets of wastefulness, we define consumer perceived brand wastefulness as *an associative brand belief arising from consumer perceptions of the extent to which brands give rise to or are marked by unnecessary consumption, inefficient utilisation, and tangible waste in production and consumption*. The following studies quantitatively validate these dimensions and develop a scale to measure CPBW.

### CPBW scale development

Drawing on established scale development procedures (Churchill 1979; Gerbing and Anderson 1988), we develop and empirically validate a scale to measure CPBW across a multi-phase process (see Fig. 1).

#### Item generation and selection (Study 1)

Based on conceptualisations of wastefulness in the literature and our qualitative interviews, we generated fifty-nine items to reflect the dimensions of CPBW. The items’ content and face validity were assessed across two stages by consulting





a panel of (a) marketing experts and (b) laypeople without specialised knowledge in the subject area. First, six marketing experts (academic faculty members) assessed the content and face validity of the items. Following Zaichkowsky (1985), the experts rated whether each item was “clearly representative”, “somewhat representative”, or “not representative” of their intended construct definition and had the opportunity to suggest improvements to the items. Based on Hardesty and Bearden’s (2004) “complete” decision rule, we retained items if at least 50% of judges rated them as “completely representative”. Twenty-four items were eliminated, and we reworded several items to better reflect the definitions based on experts’ suggestions. Next, eight laypeople assessed the substantive validity of the remaining thirty-five items (i.e., the extent to which they reflect their intended constructs; Anderson and Gerbing 2018). They assigned each item to the dimension and corresponding definition they believed best reflected the item. We calculated each item’s substantive validity coefficient ( $c_{sv}$ ; Anderson and Gerbing, 2018). We deleted weak items ( $c_{sv} < 0.5$ ), retained strong items ( $c_{sv} > 0.5$ ), and revised mediocre items ( $c_{sv} = 0.5$ ) to better reflect the intended construct definition. Through this two-stage process, we generated nineteen items to measure CPBW.

### Item refinement and purification (Study 2)

The purpose of Study 2 was to establish the dimensionality of the CPBW scale and reduce the scale to the most parsimonious set of items.

*Method.* We recruited ninety-six participants from MTurk to complete an online study in exchange for payment (63.5% male, 74% aged between 25 and 44 years). Guided by Hair et al. (2014), we ensured that minimum sample size requirements were met by obtaining “five times as many observations as the number of variables to be analysed” (Hair et al. 2014, p. 100). Participants rated one of four hypothetical brands offering a (i) more wasteful service (i.e., all-you-can-eat hotel breakfast), (ii) less wasteful service (i.e., made-to-order hotel breakfast), (iii) more wasteful product (i.e., bottled water in single-use plastic packaging), or (iv) less wasteful product (i.e., bottled water in reusable plastic packaging). These scenarios were selected based on our qualitative findings, which identified discarding food and single-use plastic as an act and an instance associated with wastefulness (see Table 3). The scenarios and measures are shown in the appendix.

*Results.* Guided by Hair et al. (2014) and Gerbing and Anderson (1988), we tested and validated the priori measurement theory across three stages involving (a) exploratory factor analyses (EFA) to identify the structure of the items, (b) single-factor confirmatory factor analyses (CFAs) to establish the unidimensionality of each first-order factor,

and (c) a multi-factor CFA to validate the final measurement model.

Phase 1 comprised a series of EFAs using principal axis factoring and oblique rotation (Promax), performed on the nineteen items. Two competing EFA models were tested, including (1) the initial two-factor solution that did not fix the number of factors to extract and (2) a solution fixing extraction to three factors to test our a priori theory. Our decision to test competing EFAs was based upon considerations that there is a tendency for the latent root criterion method to extract a conservative number of factors with fewer than 20 items, and scale development should also consider priori theory in deciding the number of factors to extract (Hair et al. 2014). Based on this guidance, we selected the three-factor solution and retained items with strong loadings ( $\geq 0.60$ ) on their hypothesised factor. The final three-factor structure (KMO measure of sampling adequacy = 0.94, Bartlett’s test of sphericity  $< 0.001$ ) consisted of thirteen items and explained 93.20% of the common variance.

Phase 2 encompassed single-factor CFAs to test each first-order factor’s unidimensionality and model fit (Gerbing and Anderson 1988). Assessment of unidimensionality is crucial when more than two constructs comprise a measurement model (Hair et al. 2014). In cases of poor model fit ( $\chi^2 < 0.05$ ), we examined the standardised residual covariance matrices and modification indices to identify problematic items. At this stage, two items were deleted, resulting in eleven items. The final single-factor models exhibited good model fit: unnecessary consumption ( $\chi^2_{df=1} = 0.10$ ,  $p$ -value = 0.75, CFI = 1.00, NNFI = 1.01, RMSEA  $< 0.01$ , SRMR  $< 0.01$ ), inefficient utilisation ( $\chi^2_{df=2} = 1.69$ ,  $p$ -value = 0.63, CFI = 0.1.00, NNFI = 1.00, RMSEA  $< 0.01$ , SRMR  $< 0.01$ ) and tangible waste ( $\chi^2_{df=2} = 0.54$ ,  $p$ -value = 0.77, CFI = 1.00, NNFI = 1.01, RMSEA  $< 0.01$ , SRMR  $< 0.01$ ).

Phase 3 validated the three-factor structure of the eleven-item scale by comparing three CFAs using maximum likelihood estimation: (i) a three-factor model with correlations among factors (Model A), (ii) a three-factor model constraining correlations between factors to 1 (Model B), and (iii) a one-factor model with the eleven items reflecting one factor (Model C). Model fit was assessed by examining improvements in the chi-square statistic and the following fit indices: the comparative fit index (CFI) and the non-normed fit index (NNFI) with recommended values of greater than 0.90, and the root mean square error of approximation (RMSEA) and standardised root mean square residual (SRMR) with recommended values of less than 0.08 (Hair et al. 2014). Model A ( $\chi^2_{df=41} = 83.32$ ,  $p$ -value  $< 0.01$ , CFI = 0.98, NNFI = 0.97, RMSEA = 0.10, SRMR = 0.02) fit significantly better than Model B ( $\chi^2_{df=44} = 178.79$ ,  $p$ -value  $< 0.01$ , CFI = 0.93, NNFI = 0.91, RMSEA = 0.18, SRMR = 0.28) and Model C



**Table 4** EFA and CFA results for the 11-item CPBW scale (Study 2)

	EFA loading	CFA loading (s.e.)	Cronbach's alpha
<b>Unnecessary consumption</b>			.96
1. [Brand's Product/Service] is encouraging people to expend more resources than needed	.92	.96** (a)	
2. [Brand's Product/Service] is encouraging people to obtain more resources than needed	.96	.97** (.04)	
3. [Brand's Product/Service] is encouraging people to consume more resources than needed	.81	.91** (.05)	
<b>Inefficient utilisation</b>			.98
4. [Brand's Product/Service] is not utilising resources to their maximum advantage	.84	.97** (a)	
5. There are resources associated with [Brand's Product/Service] which won't be fully utilised	.71	.93** (.05)	
6. [Brand's Product/Service] is not utilising resources as fully as they could be	.85	.98** (.04)	
7. [Brand's Product/Service] is not extracting the most value from the resources expended	.84	.98** (.04)	
<b>Tangible waste</b>			.98
8. I expect [Brand's Product/Service] will create waste	.72	.96** (a)	
9. I expect some resources associated with [Brand's Product/Service] will become waste	.98	.97** (.04)	
10. There are resources associated with [Brand's Product/Service] that will be wasted	.96	.98** (.03)	
11. There are resources associated with [Brand's Product/Service] that will end up as waste instead of serving another purpose	.80	.91** (.05)	

Participants were asked to rate the extent to which you agree or disagree with the following statements, where 1 = strongly disagree, 7 = strongly agree

(a) = factor loading fixed to 1

\*\*p < .001

( $\chi^2_{df=44} = 484.16$ ,  $p$ -value < 0.01, CFI = 0.76, NNFI = 0.70, RMSEA = 0.33, SRMR = 0.07). In Model A, inter-factor correlations ranged from 0.73 to 0.88. Table 4 displays the final EFA and CFA results and reliability of the final eleven-item CPBW scale.

### Discriminant validity (study 3a)

Study 3a aimed to confirm the model fit and reliability of the 11-item CPBW scale and assess the scale's discriminant validity (i.e., the ability to distinguish CPBW from similar constructs). Our qualitative findings highlighted that undesirable environmental impacts (i.e., environmental harm) and low corporate responsibility (i.e., poor management/planning) were associated with CPBW (see Table 2). Accordingly, we compared the CPBW to scales measuring consumers' perceptions of environmental friendliness (Gershoff and Frels 2015) and CSR (Wagner et al. 2009).

**Method.** We recruited a new sample of participants from MTurk ( $n = 104$ ) to complete an online survey in exchange for payment (63.5% male, 86.5% aged between 25 and 44 years). Like Study 2, participants rated one of four hypothetical brands offering a (i) more wasteful service (i.e., non-water-saving carwash), (ii) less wasteful service (i.e., water-saving carwash), (iii) more wasteful product (i.e., overpackaged product), or (iv) less wasteful product (i.e., package-free product). These scenarios, shown in the appendix, were selected based on our qualitative findings, which

identified using excessive water and excessive (plastic) packaging as an act and instance associated with wastefulness (see Table 3). Participants rated the brand using the eleven-item CPBW scale, perceived environmental friendliness scale (e.g., [brand's product/service] deserves to be labelled 'environmentally friendly'; Gershoff and Frels 2015), and perceived CSR scale (e.g., [Brand] is concerned with improving the well-being of society; Wagner et al. 2009).

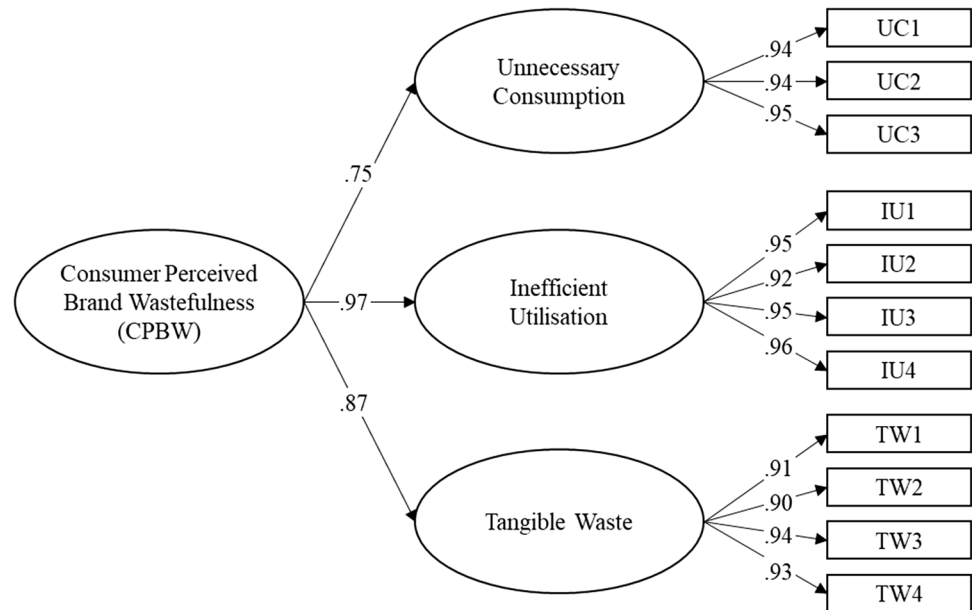
**Results.** The three-factor CPBW measurement model demonstrated good fit ( $\chi^2 = 74.18$ ,  $df = 41$ ,  $p < 0.001$ , CFI = 0.98, NNFI = 0.97, RMSEA = 0.09, SRMR = 0.01). Figure 3 presents the factor and item loadings for the equivalent higher-order model. Alternative factor structures – including one-factor and two-factor models—were also estimated and demonstrated that the three-factor structure had superior goodness-of-fit.

We conducted two discriminant validity tests, namely (1) a comparison of the chi-square statistics among five competing models decreasing the level of fixed correlations among latent constructs and (2a) a comparison of the average variance extracted (AVE) for any two constructs with the squared correlation between those two constructs (Hair et al. 2014). Table 5 details the specification of the models, results, and construct reliability.

The chi-square difference tests among competing models indicated that the five-factor model (Model E)—specifying correlations among all CPBW dimensions, perceived environmental friendliness, and perceived CSR – demonstrated



**Fig. 3** Study 3a Standardised Factor Loadings in the Hierarchical CPBW Model



**Table 5** Discriminant validity results (Study 3a)

Specification	$\chi^2$	df	$\Delta \chi^2$	CFI	NNFI	RMSEA	SRMR	
Model A All correlations between latent constructs fixed to one (one-factor model)	706.36**	134	NA	.80	.77	.20	.51	
Model B Correlation between wastefulness constructs and perceived CSR fixed to one. Correlations between perceived environmental friendliness and all other latent constructs (two-factor model)	380.45**	130	<sup>a</sup> 325.91**	.91	.90	.14	.54	
Model C Correlation between wastefulness constructs and perceived environmental friendliness fixed to one. Correlations between perceived CSR and all other latent constructs (two-factor model)	383.26**	130	<sup>a</sup> 323.10**	.91	.90	.14	.55	
Model D Correlations fixed between the three wastefulness dimensions. Correlations between perceived environmental friendliness perceived CSR and the wastefulness dimensions (three-factor model)	233.80**	127	<sup>b</sup> 146.65** <sup>c</sup> 149.46**	.96	.96	.09	.04	
Model E Correlations among all latent constructs free (five-factor model)	224.76**	125	<sup>d</sup> 9.04*	.97	.96	.88	.03	
Model E summary statistics								
Mean (SD)	Reliability		Squared correlations					
	$\alpha$	CR	1	2	3	4	5	
1. Unnecessary Consumption	4.10 (2.09)	.96	.96	<b>.89</b>				
2. Inefficient Utilisation	4.39 (2.15)	.97	.97	.53	<b>.89</b>			
3. Tangible Waste	4.76 (1.93)	.96	.95	.43	.71	<b>.85</b>		
4. Environmental Friendliness	4.33 (2.13)	.97	.97	.17	.28	.43	<b>.85</b>	
5. Perceived CSR	4.46 (1.96)	.96	.96	.14	.24	.39	.96	<b>.86</b>

AVE is bolded in the diagonal of the Squared correlations

\*\* $p < .001$ , \* $p \leq .01$ ;  $a$ =compared to Model A;  $b$ =compared to Model B;  $c$ =compared to Model C;  $d$ =compared to Model D;  $\alpha$ =coefficient alpha; CR=composite reliability



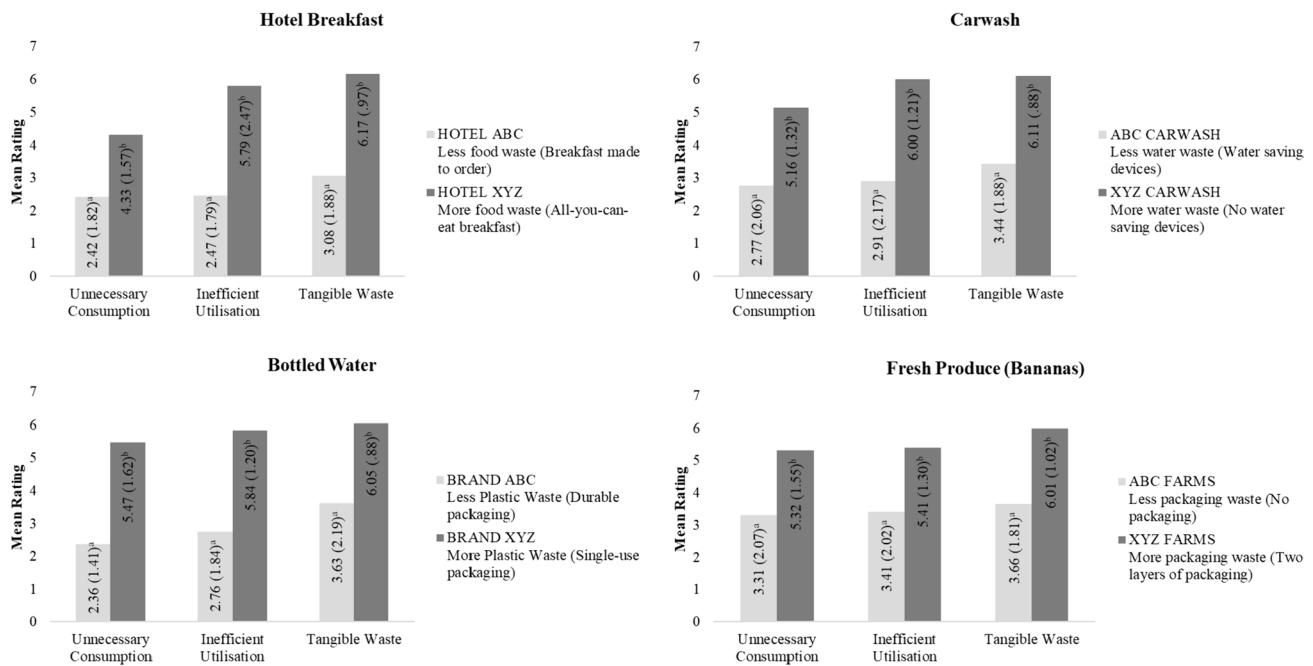


Fig. 4 Study 3b results

superior fit compared to alternative models (Models A-D). In Model E, the AVE estimates of the CPBW dimensions—unnecessary consumption (0.89), inefficient utilisation (0.89), and tangible waste (0.85)—were greater than the squared correlations with environmental friendliness (0.17, 0.28 and 0.43, respectively) and perceived CSR (0.14, 0.24, and 0.39 respectively). Thus demonstrating discriminant validity between CPBW, perceived environmental friendliness, and perceived CSR.

### Known-groups validity (study 3b)

**Method.** Known-groups validity is demonstrated when a scale can discriminate between two groups that are known to vary on the measured construct (Davidson 2014). In our case, these groups were perceptions of more versus less wasteful brands. We tested the known-groups validity of the CPBW scale using the data from Studies 2 and 3a, where we specified the hypothetical brands to possess contrasting levels of CPBW (see Fig. 4).

**Results.** Mean comparisons using t-tests supported the expected differences in CPBW according to brands' propensity for different types of waste. As shown in Fig. 4, respondents rated XYZ (high waste) brands significantly higher on CPBW than ABC (low waste) brands. For instance, XYZ HOTEL, offering an all-you-can-eat breakfast (increasing food waste), was rated significantly more wasteful across all dimensions than ABC HOTEL, offering breakfast

made-to-order (decreasing food waste). Similarly, XYZ CARWASH, which used no water-saving devices (increasing water waste), was rated significantly more wasteful across all dimensions than ABC CARWASH, which used water-saving devices. At the same time, XYZ bottled water sold in single-use plastic bottles (increasing plastic waste) was perceived as significantly more wasteful than ABC bottled water sold in reusable plastic bottles, while XYZ FARMS selling overpackaged produce (increasing packaging waste) was rated significantly more wasteful than ABC FARMS with no packaging.

### Nomological validity: consequences of CPBW (Study 4)

Our final objective was to investigate the consequence of CPBW on theoretically and practically relevant branding outcomes. Guided by established branding theory (Keller and Swaminathan 2020), we conceptualise CPBW as an unfavourable brand imagery association evoking negative consumer brand responses. Specifically, we expected CPBW to reduce perceived brand quality and credibility (Keller and Swaminathan 2020), purchase likelihood (Bolton and Alba 2012), willingness to pay a price premium, henceforth WTPP (Steenkamp et al. 2010; Anselmsson et al. 2014), and increase (e) negative self-consciousness emotions (Sun and Trudel 2017). Given prior research suggests consumer characteristics—including gender (Brough et al. 2016; Newman



**Table 6** Summary statistics, discriminant validity, and construct reliability (Study 4)

		Squared correlations								
		1	2	3	4	5	6	7	8	9
1	Unnecessary Consumption	<b>.86</b>								
2	Inefficient Utilisation	.73	<b>.79</b>							
3	Tangible Waste	.58	.63	<b>.83</b>						
4	Purchase Likelihood	.49	.44	.39	<b>.90</b>					
5	Willingness to pay a Price Premium*	.34	.32	.31	.43	<b>.77</b>				
6	Negative Emotions	.71	.64	.62	.56	.38	<b>.83</b>			
7	Perceived Quality	.29	.25	.22	.34	.50	.35	<b>.80</b>		
8	Perceived Credibility*	.30	.27	.22	.39	.37	.35	.61	<b>.71</b>	
9	Environmental Consciousness*	<.01	<.01	.01	<.01	.01	.01	<.01	<.01	<b>.71</b>
Mean		4.20	4.21	5.17	4.31	3.12	3.17	4.66	4.86	5.64
SD		2.07	1.90	1.84	1.94	1.71	1.97	1.56	.93	.95
Cronbach's $\alpha$		.95	.94	.95	.96	.91	.95	.94	.90	.77
Composite reliability		.94	.92	.94	.96	.76	.94	.93	.79	.78

\*Some items deleted for model fit; AVE is bolded and italicised in the diagonal of squared correlations

and Trump 2022) and sustainability attitudes (White et al. 2019)—influence sustainability-related decision-making, we included these variables to assess their influence on CPBW and subsequent brand responses.

**Method.** We recruited 208 participants (70.7% female; 72.0% aged 18–35) from a large public university community to participate in an online survey. Respondents were asked to nominate two real-world brands that, in their opinion, were (a) wasteful and (b) not wasteful. Participants responded to a set of statements for each of these brands, including the CPBW scale and items to measure consumer brand responses: perceived quality (e.g., “compared to other brands of this product, [Brand] is of very high quality”, Netemeyer et al. 2004), perceived credibility (e.g., “[Brand] has a name you can trust”, Erdem and Swait 1998), purchase likelihood (e.g., “If I were going to buy [product], the probability of buying [brand’s product] is.. extremely low to extremely high, Grewal et al. 1998), WTPP (e.g., “I am willing to pay a higher price for [brand of [product]] than for other brands of [product]”, Netemeyer et al. 2004), and negative self-conscious emotions (e.g., “How would you feel about choosing to purchase [Brand’s product]: guilty, bad, ashamed, embarrassed”, Sun and Trudel 2017). All items were measured on seven-point Likert scales ranging from strongly disagree (1) to strongly agree (7). Participants also answered questions about their demographic characteristics and four items to measure their pro-environmental identity (Whitmarsh and O’Neill, 2010).

**Results.** Ratings of wasteful and non-wasteful brands’ products were pooled, yielding 416 observations. Ten observations were deleted because the task was misinterpreted (e.g., no brand was listed), resulting in 406 observations. We used structural equation modelling to examine the

relationships between CPBW, consumer brand responses, and consumer characteristics. The measurement model—specifying correlations among nine factors, including three latent variables for each CPBW dimension, five latent variables for each consumer brand response and one latent variable representing consumers’ environmental consciousness—demonstrated acceptable model fit ( $\chi^2 = 1063.65$ ,  $df = 398$ ,  $p < 0.001$ , CFI = 0.95, NNFI = 0.95, RMSEA = 0.06, SRMR = 0.04) and construct validity and reliability (see Table 6).

We estimated four structural models to examine the effects of CPBW on consumer brand responses and how consumer-level characteristics influenced perceptions of and sensitivity to CPBW (Table 7). Model 1 specified CPBW as a higher-order construct and examined its relationship with consumer brand responses and consumer characteristics. Model 2 examined the relationships between the individual CPBW dimensions, consumer brand responses, and consumer characteristics. Model 3 and Model 4 specified the consumer characteristics as moderators, running group comparisons of consumers’ sensitivity to individual CPBW dimensions according to their gender (Model 3) and pro-environmental identity (Model 4).

Model 1 ( $\chi^2 = 1465.19$ ,  $df = 454$ ,  $p < 0.001$ , CFI = 0.93, NNFI = 0.92, RMSEA = 0.07, AIC = 1613.19, BIC = 1909.66) demonstrates that the individual CPBW dimensions positively and significantly comprised the higher-order CPBW construct. The higher-order CPBW construct was negatively associated with consumers’ purchase likelihood, WTPP, perceived quality, and perceived credibility, while positively related to negative self-conscious emotions. Consumers’ environmental consciousness or gender did not significantly influence the higher-order CPBW





**Table 7** Nomological model results (Study 4)

		Consumer brand responses									
		UC	IU	TW	PI	WTPP	NEM	PQ	PC		
<i>Model 1</i>											
CPBW	.91 <sup>a</sup>	.88** (.05)	.83** (.05)	-.80** (.04)	-.70** (.05)	.92** (.05)	-.66** (.04)	-.66** (.04)			
ECO		higher-order CPBW .04 <sup>n.s.</sup> (.13)									
GEN		higher-order CPBW .02 <sup>n.s.</sup> (.21)									
<i>Model 2</i>											
UC				-.56** (.03)	-.45** (.04)	.65** (.03)					-.48** (.03)
IU				-.17** (.03)	-.09* (.04)	.22** (.03)					-.11* (.03)
TW				-.21** (.03)	-.23** (.04)	.40** (.03)					-.08 <sup>n.s.</sup> (.03)
ECO		-.05* (.13)	.02 <sup>n.s.</sup> (.12)	.05* (.12)							
GEN		.03 <sup>n.s.</sup> (.22)	-.01 <sup>n.s.</sup> (.22)	-.04 <sup>n.s.</sup> (.21)							
<i>Model 3 (Gender)</i>											
UC				-.35** (.06)	-.15 <sup>n.s.</sup> (.07)	.42** (.06)	-.16 <sup>n.s.</sup> (.06)	-.63** (.04)	-.28** (.06)		-.57** (.03)
IU				-.44** (.06)	-.48** (.07)	.47** (.06)	-.32** (.06)	.03 <sup>n.s.</sup> (.04)	-.24* (.06)		-.05 <sup>n.s.</sup> (.03)
TW				-.04 <sup>n.s.</sup> (.07)	-.28** (.07)	.26** (.06)	-.06 <sup>n.s.</sup> (.07)	-.06 <sup>n.s.</sup> (.04)	-.01 <sup>n.s.</sup> (.06)		-.05 <sup>n.s.</sup> (.03)
<i>Model 4 (Environmental consciousness)</i>											
UC				-.42** (.05)	-.21** (.06)	.52** (.05)	-.43** (.05)	.78** (.04)	-.55** (.04)	-.42** (.04)	-.51** (.04)
IU				-.14* (.05)	-.01 <sup>n.s.</sup> (.06)	.19** (.05)	.04 <sup>n.s.</sup> (.05)	.20* (.04)	-.13* (.04)	.04 <sup>n.s.</sup> (.04)	-.22** (.04)
TW				-.29** (.05)	-.52** (.06)	.51** (.05)	-.17* (.05)	.28** (.04)	-.03 <sup>n.s.</sup> (.04)	-.17* (.04)	-.01 <sup>n.s.</sup> (.04)

Standard error in parentheses. \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ , n.s. > .10. UC = unnecessary consumption, IU = inefficient utilisation, TW = tangible waste, EF = environmental friendliness, PI = Purchase intentions, WTPP = willingness to pay a price premium, NEM = negative self-conscious emotions, PQ = perceived quality, PC = perceived credibility



construct. In Model 2 ( $\chi^2 = 2383.48$ ,  $df = 444$ ,  $p < 0.001$ ,  $CFI = 0.87$ ,  $NNFI = 0.85$ ,  $RMSEA = 0.10$ ,  $AIC = 2551.48$ ,  $BIC = 2888.02$ ), all CPBW dimensions were significantly and negatively associated with purchase likelihood, WTPP, and positively related to negative self-conscious emotions. CPBW dimensions had differential effects on perceived quality and credibility. For instance, perceived quality was negatively associated with unnecessary consumption and tangible waste but not inefficient utilisation.

Model 3 ( $\chi^2 = 2711.46$ ,  $df = 744$ ,  $p < 0.01$ ,  $CFI = 0.86$ ,  $NNFI = 0.85$ ,  $RMSEA = 0.08$ ,  $AIC = 2963.46$ ) examined differences in consumers' sensitivity to CPBW according to their reported gender. Females exhibited a greater aversion to unnecessary consumption than males. This was demonstrated through lower purchase likelihood and perceived credibility and greater negative emotions. Further, unnecessary consumption was significantly and negatively associated with WTPP and perceived quality for females; however, this effect was insignificant for males. Males demonstrated a greater aversion to inefficient utilisation. This was shown through a lower purchase likelihood and greater negative emotions. Further, inefficient utilisation was significantly and negatively related to WTPP, perceived quality, and credibility for males; however, this effect was insignificant for females.

Model 4 ( $\chi^2 = 2758.90$ ,  $df = 745$ ,  $p < 0.01$ ,  $CFI = 0.86$ ,  $NNFI = 0.85$ ,  $RMSEA = 0.08$ ,  $AIC = 3008.90$ ) examined differences in consumers' sensitivity to CPBW according to their pro-environmental identity. Consumers with a greater pro-environmental identity (Mean rating  $\geq 6.00$ ,  $n = 218$ ) were more averse to unnecessary consumption and inefficient utilisation than those with a lower pro-environmental identity (Mean rating  $< 6.00$ ,  $n = 188$ ). For instance, inefficient utilisation was significantly associated with a lower WTPP, perceived quality and credibility for high pro-environmental consumers; however, such aversion was not significant for those with a lower pro-environmental identity. Consumers with lower pro-environmental identity exhibited greater sensitivity to tangible waste, exhibiting lower WTPP, perceived quality, and perceived credibility. Notably, tangible waste was significantly associated with lower purchase likelihood and increased negative emotions for both consumer groups.

## General discussion

Research considering sustainable brand management from alternative perspectives can offer new insights and innovative ways to support more sustainable consumption (Golob et al. 2022). This paper introduces and investigates the concept of consumer perceived wastefulness in brand management, offering new insights into an alternative psychological

mechanism that can encourage brands and consumers to become more sustainable. Specifically, our research shows that consumers link the concept of perceived wastefulness to their brand choices and exhibit aversion to (preference for) more (less) wasteful brands. Thus, we show that consumers' aversion to wastefulness has positive implications for brands offering more sustainable, less wasteful brand choices. The scale developed in this paper provides a valid and reliable means for brands to measure and thus manage consumer perceptions of brand wastefulness.

## Theoretical implications

Our research contributes four original insights regarding the nature and role of CPBW in branding theory. First, we conceptualise and empirically validate the multidimensional concept of consumer perceived brand wastefulness as comprising three distinct yet interrelated factors: (1) unnecessary consumption (i.e., the perception that a brand encourages the consumption of more resources than necessary), (2) inefficient utilisation (i.e., the perception that a brand does not utilise resources fully or to their maximum potential), and (3) tangible waste (i.e., the perception that a brand contributes to the generation of tangible leftovers that will become waste instead of serving another purpose). Our research demonstrates that consumers form brand beliefs along these dimensions, impacting their brand responses.

Second, our research demonstrates that consumer perceptions of brand wastefulness are empirically distinct from perceptions of brand environmental friendliness (Gershoff and Frels 2015) and CSR (Wagner et al. 2009). These findings highlight the differentiating factors comprising consumers' brand sustainability beliefs. Specifically, we show that consumers not only form associations of brands' environmental and social impact, but also brands' recognition of resource boundaries and waste (Kotler 2011). In particular, our research demonstrates that consumers' perceptions of brand wastefulness are associative beliefs arising from consumer perceptions of the extent to which brands give rise to or are marked by unnecessary consumption, inefficient utilisation, or tangible waste in production and consumption.

Third, we develop a valid and reliable scale to (a) facilitate future research investigating the concept of CPBW and (b) offer a means for marketers to measure and manage CPBW and corresponding consumer brand responses. Brands with a lower score on our rating scale are perceived as less wasteful (more favourable) than higher-scoring brands. Our known-groups validity test demonstrates the ability of our scale to effectively distinguish between perceptions of more vs less wasteful brands. Our research positions CPBW within a broader nomological network linking branding and waste aversion theory. We establish CPBW as an unfavourable brand belief that can negatively impact consumers' brand



judgements and feelings and, thus, adversely affect brand equity. Our research confirms and expands on waste aversion theory (Arkes 1996; Bolton and Alba 2012) by demonstrating that CPBW was negatively related to perceived brand quality, perceived brand credibility, intentions to purchase, and WTPP, and increased negative self-conscious emotions.

Fourth, we demonstrate that consumers exhibit varying degrees of sensitivity to CPBW. Specifically, we found differences in consumers' aversion to CPBW according to gender and pro-environmental identity. Such findings highlight how challenges regarding green-feminine stereotypes (Brough et al. 2016; Newman and Trump 2022) or sustainability attitude-behaviour gaps (White et al. 2019) could be overcome by tailoring waste reduction strategies and related marketing communications to different consumer groups.

### Managerial implications

Sustainable consumption trends over the past few decades have coalesced into a fundamental change in how consumers view and respond to waste (Deloitte 2023; Ipsos 2020). Our research shows that consumers' perceptions of brands' waste matter and that consumers respond favourably to brands that meet their demands for less wasteful products and services. The successful brand managers of today and tomorrow will recognise this fundamental shift and manage their brands in a way that meets consumer demand for more sustainable, less wasteful brand choices. Doing so is not only environmentally and socially responsible but also good brand strategy. The benefits of shifting towards and maintaining a less wasteful brand image are evident in our research, with less wasteful brands associated with greater purchase intentions, perceived quality, credibility, and willingness to pay a price premium. As such, it is vital for brand managers to implement marketing activities that reduce their brand's wastefulness, and ensure they understand and improve consumers' knowledge of such initiatives to reduce waste.

The CPBW scale developed and validated in this paper enables brand managers to measure and manage consumer perceptions of and responses to brand wastefulness. In particular, the scale allows managers to gain a more nuanced understanding of the different factors comprising consumers' brand wastefulness beliefs—including perceptions of unnecessary consumption, inefficient utilisation, and tangible waste—and the weight of these factors in contributing to consumers' assessment of CPBW. Brand managers can thereby use the scale to track and monitor CPBW arising from their marketing activities and tailor how they communicate their waste reduction activities to consumers. Consequently, brands can consider waste reduction initiatives to improve (i.e., decrease) CPBW and promote consumer preference for their perceptually less wasteful offerings.

### Limitations and directions for future research

Our conceptualisation and scale of CPBW provide several opportunities for future research. First, we encourage research to investigate the generalisability of our findings with samples from different consumer populations. For example, our qualitative study largely comprised respondents educated with a university degree, which may influence their ability to describe the abstract concept of wastefulness. Future research may investigate how consumers' education influences their descriptions of wastefulness. Further, our samples were from Western countries with developed economies, which can impact how they think about waste (Scanlan 2005). Thus, research may explore consumers' conceptualisations of wastefulness across other countries, cultures, and socio-political contexts.

There is an opportunity to conduct additional analyses with alternative data collection methods. For instance, it is interesting that the dimensions emerging from our consumer insights were negatively valenced. While there is potential for wastefulness to be perceived positively (e.g., waste as a resource), it may be the case that such perceptions are not top-of-mind for consumers and, thus, less likely to be revealed through elicitation techniques. Future research may use alternative qualitative methods to explore whether and when consumers perceive wastefulness positively. Moreover, future research could assess the nomological validity of the scale using common brands (rather than self-nominated brands) and test the experimental validity of the scale. The scale's generalisability could also be tested across a broader range of product and service categories (e.g., fast fashion brands), and with different brand activities contributing to waste in production (e.g., production processes involving brands' inefficient use versus inefficient disposal of resources; Xu and Bolton, 2023, or brands producing products with longer versus shorter life cycles; Sun et al. 2021) and consumption (e.g., buy vs rent: Bolton and Alba 2012).

Our paper explores the consequences of CPBW, demonstrating a negative relationship between CPBW and behavioural intentions. Future research may use our scale to explore how reducing CPBW impacts observed sustainable behaviour (e.g., increased brand choice and repeat purchase). Notably, despite consumers' stated attitudes and intentions, consumers often engage in behaviours not aligned with the principle of waste aversion (Mühlthaler and Rademacher 2017; Schanes et al. 2018). This attitude-behaviour gap is widely documented across the sustainable consumption literature (Jacobs et al. 2022) and is highlighted as an important area for future research (White et al. 2019). Thus, a natural extension of our work is to examine factors explaining and closing the gap between CPBW and brand choice.

Social practice theory is one alternative, yet complementary, perspective for future research investigating



mechanisms underlying consumers' aversion to waste (Schanes et al. 2018). Research taking this perspective investigates the social practices in which individual behaviours, such as consumption choices, are embedded (Gonzalez-Arcos et al. 2021). While we take a psychology-oriented approach to understanding individual consumers' perceptions of wastefulness, providing insights into the meanings of wastefulness, future research may shift the unit of analysis from the psychological mechanisms of individuals to a focus on wasteful practices, such as wasteful consumption choices. Future research may explore consumers' lived experiences with wasteful consumption (e.g., the visceral nature of wasteful consumption), how different meanings of wastefulness are linked to various material aspects of waste and the competencies involved in choosing less wasteful brands.

Finally, future research may examine antecedents to CPBW, such as brands' marketing activities focused on reducing waste in the production and consumption of their goods and services. For instance, brands producing products with greater durability (Sun et al. 2021) and smaller package sizes (Petit et al. 2020) have the potential to reduce CPBW. Given brand associations are formed based on consumers' knowledge of brand activities, future research may examine how different marketing communication strategies influence CPBW. For example, Hellman's mayonnaise communicates how its product can help to reduce food waste by enabling consumers to become more resourceful in the kitchen and create delicious recipes with the food they already have (Hellman's, 2023).

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## Declarations

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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