

Sustainable Consumer Behaviour

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Abstract:

Climate change is widely acknowledged as a significant threat, with scientists and policymakers increasingly recognizing it as an issue tied to consumer behavior. The choices individuals make—what they consume, how they consume it, and in what quantities—have a direct impact on the environment. Sustainable consumer behavior seeks to meet current needs while minimizing environmental harm or even providing environmental benefits. Understanding this behavior is crucial for shifting societal approaches to environmental challenges. This article reviews and organizes research from the past two decades, focusing on the psychological factors influencing sustainable consumer behavior. It highlights four key areas of study that have shaped research efforts: (a) cognitive barriers, (b) individual identity, (c) social influences, and (d) characteristics of products. The goal is to offer a useful framework that encourages further exploration in the field of sustainable consumer behavior.

Keywords: behavioural economics, decision-making, environmental consumer behaviour, green consumer behaviour, prosocial behaviour, sustainability.

Introduction:

The world is grappling with numerous environmental challenges, many of which are caused by human activities. Examples include the significant rise in natural disasters, noticeable shifts in weather patterns, melting glaciers, and increasing global temperatures—largely driven by greenhouse gas emissions from human actions (Cramer et al., 2014). These gases, primarily carbon dioxide, methane, and nitrous oxide, have escalated due to activities such as deforestation, urban development, industrial production, vehicle emissions, and the burning of fossil fuels, resulting in over a 33% increase in carbon dioxide levels. Agricultural practices, like the use of fertilizers in cotton and crop production, contribute to nitrous oxide emissions. Post-consumption decisions, such as whether to recycle or dispose of waste, also influence greenhouse gas levels. Waste decomposition in landfills releases methane, a greenhouse gas significantly more potent than carbon dioxide, while manufacturing new products generates a higher net environmental impact compared to using recycled materials. Therefore, consumption is deeply tied to sustainability, as choices about what to purchase, how much to consume, and how to dispose of

waste directly affect the environment. Collectively, individual consumption decisions have a severe cumulative impact on the planet and future generations.

Most individuals aim to live and make choices that meet their current needs without harming the environment. From this viewpoint, sustainable or environmentally conscious behavior is best characterized by its impact—specifically, the degree to which decisions are motivated by the desire to benefit or reduce harm to the environment (Stern, 2000). However, nearly everyone engages in actions that negatively affect the environment at some point. Researchers in consumer psychology have explored the reasons behind why some people adopt sustainable behaviors while others, despite being concerned about the environment, act in unsustainable ways. Understanding the psychological factors driving these behaviors is crucial for creating a sustainable future and promoting widespread behavioral change. Yet, despite its significance and the valuable contributions of research in this field, knowledge about sustainable behavior and decision-making remains limited and lags far behind other areas of consumer psychology.

Objectives and approach:

This article has two main objectives. The first is to review and synthesize existing research on sustainable consumer behavior, presenting an organizing framework centered on four key areas: cognitive barriers, the self, social influence, and product characteristics. The second is to highlight critical research gaps that offer opportunities to promote sustainable consumption. Together, these objectives aim to guide businesses, policymakers, and consumers in fostering sustainability within their communities.

The article begins with a brief overview of research on environmental and sustainable behaviors conducted between 1970 and 1999, providing context for the current review. Although early studies are not the primary focus, they laid the groundwork for more recent advancements. The attention then shifts to research published in high-impact journals since 2000, particularly those contributing to a deeper understanding of sustainable consumption and the development of a theory of sustainable decision-making.

The review adopts a decision-making perspective on sustainable consumption and selectively includes studies that address the challenges of researching sustainability, such as demand effects and habitual behaviors. Consumers often express positive intentions toward sustainability that do not translate into corresponding actions. The studies included have been chosen for their efforts to address these challenges, serving as methodological and procedural models for future research in this field.

Early Sustainability Research— Pre 2000:

Early research on sustainable behavior primarily aimed to identify and define “green consumers” as a distinct market segment. This research focused on socio-psychological and situational factors such as age, gender, economic and cultural background, attitudes, and motivations, correlating them with measures of social consciousness and environmental concern (Anderson & Cunningham, 1972; Fisk, 1973; Kinnear, Taylor, & Ahmed, 1974; Mayer, 1976;

Webster, 1975). For instance, Anderson and Cunningham (1972) developed a typology of socially conscious consumers by linking consumer characteristics to a validated social responsibility scale (Berkowitz & Lutterman, 1968). Kinnear et al. (1974) expanded on this work by introducing attitudinal and behavioral measures to capture socially conscious purchasing behavior and created a new ecological concern scale, finding that personality traits were stronger predictors of ecological concern than socioeconomic variables.

Despite these efforts, early studies yielded inconclusive and sometimes contradictory results. For example, Kassarian (1971) found that although Chevron’s low-polluting gasoline campaign increased awareness and willingness to pay more, it did not influence environmentally friendly behaviors like driving smaller, fuel-efficient cars. Similarly, Webster (1975) found weak links between personality, attitude, and socioeconomic factors and socially conscious behaviors like recycling. The inconsistency of results persisted into the 1980s, as research focused primarily on energy conservation. Studies often explored the relationship between environmental attitudes and energy-saving behaviors, but findings were frequently inconclusive. For example, Leonard-Barton (1981) identified a connection between voluntary simplicity and energy-efficient behaviors, but other studies, like Heslop et al. (1981), found no link between social responsibility or environmental consciousness and energy conservation.

The 1990s saw continued interest in topics like recycling and energy conservation, alongside emerging research into “green” advertising and marketing strategies (e.g., Banerjee, Gulas, & Iyer, 1995; Kilbourne, 1995). Shrum et al. (1995) used large-scale surveys to construct psychographic profiles of green consumers for marketing purposes. This period also marked a shift toward macro-level perspectives, such as integrating environmental concerns into corporate strategies (Menon & Menon, 1997). These frameworks laid the foundation for broader research into Corporate Social Responsibility (CSR) and sustainability in

marketing strategy (e.g., Sen & Bhattacharya, 2001; Trudel & Cotte, 2009).

In summary, early research predominantly focused on identifying environmentally conscious consumers for market segmentation, taking a managerial perspective (Kilbourne & Beckmann, 1998). By the 2000s, the focus shifted to understanding decision-making processes and psychological factors influencing sustainable behaviors. Four major areas of inquiry—cognitive barriers, the self, social influence, and product characteristics—have since shaped our understanding of the psychology behind sustainable consumer behavior, highlighting significant progress in this field over the past two decades.

Environmental and Sustainable Behaviors : Four Major Areas of Investigation 2000–2018

Cognitive barriers to sustainability arise from the way human decision-making operates, which often involves two parallel systems. System 1 is fast, emotional, and automatic, relying on familiarity and memory to make quick judgments, while System 2 is slower, analytical, and deliberative, requiring effortful cognitive processing (Sloman, 1996; Morewedge & Kahneman, 2010). In sustainable consumer behavior, which often involves long-term considerations, System 2 typically takes precedence because the benefits of environmentally friendly choices are realized far into the future and may not directly benefit the individual making the decision (Manning, 2009).

For example, choosing to take the commuter train instead of driving involves a conflict between the two systems. System 1 focuses on immediate discomfort, such as the cold weather and the inconvenience of walking to the office, leading to a preference for driving. In contrast, System 2 evaluates the long-term benefits of taking the train, such as avoiding traffic, getting exercise, and making an environmentally friendly choice, ultimately overriding the easier short-term option.

This interplay between the systems makes sustainable behavior challenging, as it often

requires resisting the immediate gratification offered by System 1 in favor of the effortful and less convenient choices advocated by System 2 (e.g., holding onto a soda can until a recycling bin is found instead of using a nearby trash bin; see Brothers, Krantz, & McClannahan, 1994). Reducing the effort or sacrifices associated with sustainable behaviors can significantly increase their likelihood.

Weber (2017) highlights how humans are naturally biased toward maintaining the status quo, even when alternatives provide substantial long-term benefits. This "cognitive myopia" and present bias hinder consumers from prioritizing the future benefits of sustainable choices over immediate costs. For instance, sales of energy-efficient products remain low despite their potential for long-term savings because consumers are deterred by higher upfront costs (Gillingham, Newell, & Palmer, 2009).

Economic Incentive and Nudges:

Governments are increasingly turning to behavioral insights to address cognitive barriers, influencing people's behavior to achieve policy goals (Benartzi et al., 2017; The World Bank, 2015). One approach involves offering incentives for sustainable actions. For instance, a program in California provided discounts on electricity bills to residents who reduced their summer energy consumption by at least 20% compared to the previous year, resulting in a 4.2% energy reduction in certain regions (Ito, 2015). Another successful initiative combined financial incentives and educational efforts to lower energy use during peak periods (Arimura, Li, Newell, & Palmer, 2011).

An alternative strategy relies on nudges—small suggestions or changes in choice architecture designed to influence behavior without restricting options or offering economic rewards (Thaler & Sunstein, 2003). Nudges often involve positive reinforcements or subtle adjustments to the way choices are presented to consumers. One effective nudge involves setting defaults, where individuals must actively opt out if they do not want a particular option. Defaults work in three main ways: through inertia, as people often prefer the path of least resistance; through status

quo bias, where individuals resist change due to a perceived loss; and through the implicit endorsement of the default option, which is seen as a recommendation or social proof.

A large-scale German field study (N = 41,952 households) demonstrated the power of defaults in promoting green energy adoption (Ebeling & Lotz, 2015). In one condition, participants had to actively opt into purchasing more expensive green energy, while in another, they had to opt out to avoid purchasing it. When the default choice was set to green energy, its adoption rate increased tenfold. Similarly, defaults in product design, such as using recyclable materials or eco-friendly packaging, can significantly influence sustainable behaviors while preserving consumer choice (Baxter & Childs, 2017).

Behavioral insights and nudges also play a role in shaping sustainable infrastructure and building design. For example, the Envision Infrastructure Sustainability Rating System provides a framework for measuring sustainability in projects, including social, economic, and environmental metrics. A field study by Shealy et al. (2016) explored how framing affected design decisions. When project teams started with the maximum sustainability points and lost points for unsustainable choices, they met 66% of sustainability targets. In contrast, teams that began with zero points and earned points for sustainable choices achieved only 51% of targets. This finding underscores the impact of default framing on achieving sustainability goals.

Future Focus:

Sustainable behaviors are often intertemporal, challenging to quantify, and linked to uncertain future outcomes (for a review of intertemporal choice, see Malkoc & Zauberman, 2019). Their benefits are psychologically distant, abstract, and uncertain, making them difficult for consumers to fully comprehend (Spence, Poortinga, & Pidgeon, 2012). These cognitive challenges contribute to present bias—the tendency to prioritize immediate outcomes over those in the future when faced with trade-offs (O'Donoghue & Rabin, 1999).

One way to address present bias is by fostering a future-focused perspective. Construal level theory (Trope & Liberman, 2003) posits that people perceive future events differently from those in the present, viewing future events in more abstract terms. Given that sustainable choices inherently involve future benefits, promoting a future-oriented or abstract mindset can encourage sustainable behavior. For example, priming individuals with a future focus—such as asking them to reflect on how they want to be remembered by future generations—has been shown to increase donations to environmental charities, enhance pro-environmental intentions, and strengthen beliefs about climate change (Zaval, Markowitz, & Weber, 2015). Similarly, research indicates that individuals with a more future-oriented or abstract mindset tend to show stronger preferences for eco-friendly products (Reczek, Trudel, & White, 2018).

However, the temporal focus of consumers also affects how they respond to messages about sustainability. For instance, emphasizing economic benefits can reduce interest in sustainable products for individuals in an abstract mindset due to a mismatch in temporal focus (Goldsmith, Newman, & Dhar, 2016). Furthermore, aligning message framing with temporal focus can be effective. White, MacDonnell, and Dahl (2011) found that abstract, future-focused consumers responded better to gain-framed messages (e.g., “We will save over one million trees each year”), while concrete, present-focused consumers responded better to loss-framed messages (e.g., “We will lose over one million trees each year”). These approaches not only improved attitudes toward recycling but also increased actual recycling behavior.

Another way to counteract present bias is by making the consequences of sustainable behaviors more tangible and less abstract. Personal experiences with extreme weather, for example, have been shown to heighten awareness of climate change's adverse effects. In one study, consumers surveyed about global warming on days they perceived as unusually warm expressed greater concern about climate

change and made larger donations to related charities than those surveyed on colder-than-usual days (Li, Johnson, & Zaval, 2011). This emerging research highlights the potential of concrete communication strategies to mitigate present bias. Future studies should explore additional methods to present sustainable behaviors in more relatable and tangible ways to effectively encourage action.

The Self:

Research on the self is a central focus in the study of consumer sustainable behavior. A common premise in this field is that individuals engage in sustainable actions because these behaviors align with their environmental beliefs and help them express their identity. Consumers are motivated to act in ways that reflect their environmental values and to project a positive self-image, gaining benefits such as self-signaling (Bodner & Prelec, 2003; Sun & Trudel, 2017), self-identification (Belk, 1988), status (Griskevicius, Tybur, & Van den Bergh, 2010), or reputation (Semmann, Krambeck, & Milinski, 2005). While these motivations are often studied separately for clarity, they frequently overlap, with sustainable behaviors being driven by a combination of these factors.

Self- Signaling:

When consumers make sustainable choices, they not only communicate their values to others but also reinforce their self-perception (Bodner & Prelec, 2003). Research on self and identity highlights the human need to feel, as Steele (1988) describes, "morally and adaptively adequate," with a sense of virtue attributed to their own actions rather than external factors. For example, when consumers were asked about effective energy conservation strategies, they primarily mentioned actions tied to personal responsibility (e.g., turning off lights, driving less, recycling) rather than product-related measures like energy-efficient appliances or light bulbs (Attari et al., 2010).

The motivational strength of self-signaling sustainable behavior stems from the moral evaluation it evokes (Aquino & Reed, 2002; Steele, 1988) and the self-conscious emotions that drive action. Making individuals aware of

discrepancies between their personal standards and actual behaviors can encourage sustainable actions by helping them avoid guilt associated with such inconsistencies (Higgins, 1987). For instance, situational factors that increase self-accountability can enhance preferences for ethically promoted products as a way to avoid guilt (Peloza, White, & Shang, 2013).

An intensive field experiment involving over 2,400 hotel guests (Baca-Motes et al., 2012) demonstrated that guests who committed to sustainable practices and wore a pin signaling their commitment were more likely to reuse towels and conserve electricity compared to a control group. Similarly, self-affirmation theory suggests that when an individual's self-concept is threatened, they engage in behaviors, including sustainable consumption, to restore their self-image (Gao, Wheeler, & Shiv, 2008). For example, choosing eco-friendly products over superior non-environmental alternatives under self-threat affirms moral values and reinforces one's global and ethical self-concept (Trudel et al., 2018).

From a consumer well-being perspective, giving away possessions to others generates more happiness than trashing, recycling, or donating goods to nonprofits (Donnelly et al., 2017). Sustainable behavior is often motivated by the desire to avoid discrepancies between personal standards and actions, and moral behaviors enhance self-perception. However, this can also lead to unintended effects. For example, purchasing eco-friendly products boosts moral self-perception but may paradoxically encourage unethical behaviors, such as stealing or cheating, as the initial boost reduces guilt (Mazar & Zhong, 2010). Similarly, "vicarious moral cleansing" occurs when consumers connected to socially responsible brands feel justified in acting immorally, leveraging the brand's ethical actions to alleviate personal guilt (Newman & Brucks, 2018).

Sun and Trudel (2017) introduced a theoretical framework showing how recycling reduces guilt about waste and fosters pride in responsible disposal. Their model integrates consumption and disposal, emphasizing that consumers

anticipate emotional outcomes when making disposal decisions. This framework explains findings from prior research, such as the phenomenon where consumers use more resources when they can self-signal by recycling (Catlin & Wang, 2013; Sun & Trudel, 2017). It highlights the utility consumers derive from signaling their environmental commitment through sustainable behaviors. |

Self- Identification:

Consumers are motivated to develop a sense of self-identity that sets them apart from others. While self-signaling allows individuals to create a positive self-image without concern for others' perceptions, most self-identification benefits involve signaling personal traits to others. Behavior is closely tied to both personal and collective identity, a concept long explored in consumer psychology (Belk, 1988). People value products not only for their practical benefits but also for what they represent to themselves and others. Social identity theory (Tajfel, 1982) suggests that a person's self-concept has two dimensions: individual identity, which reflects a person's unique self-perception, and social identity, which is derived from the groups they belong to. Each individual has multiple identities that include both personal and group-based aspects. In terms of identity signaling, people tend to adopt positive environmental behaviors that align with their identities and group affiliations (Van der Werff, Steg, & Keizer, 2013; White & Peloza, 2009), while avoiding negative behaviors that could distance them from their in-groups (Trudel, Argo, & Meng, 2016a) and out-groups (Brough, Wilkie, Ma, Isaac, & Gal, 2016).

Research highlights the role of individual identity in promoting sustainable behavior. People who identify with environmental values are more likely to engage in eco-friendly actions (Haws, Winterich, & Naylor, 2014; Whitmarsh & O'Neill, 2010) and be active in environmental causes (Van der Werff et al., 2013). Acting in accordance with one's self-identity helps maintain a positive self-image. However, the desire to maintain this self-perception can lead to defensive behaviors, such as denying climate change evidence (Feygina, Jost, & Goldsmith,

2010) or criticizing others who engage in more sustainable behavior (Zane, Irwin, & Reczek, 2016). Defensive behaviors can also cause consumers to ignore ethical information when making purchasing decisions to avoid negative emotions (Ehrich & Irwin, 2005). For example, in one study, consumers who expressed concern for the environment were less likely to seek out environmental attribute information when making purchases, thereby justifying unsustainable choices by claiming ignorance.

Further research by Zane et al. (2016) showed that seeing others act ethically can create a self-threat, especially when a person's own inaction on the issue is evident. If a consumer fails to act ethically while observing others do so, they may resort to self-defensive behaviors, such as denigrating those ethical individuals in response to the negative social comparison. However, not all self-defensive behaviors are negative; some can encourage sustainable actions. For instance, people may be more likely to recycle products linked to their self-identity to avoid the emotional discomfort of throwing away something that represents them. Trudel et al. (2016a) found that individuals were more inclined to recycle items associated with their identity. For example, participants with a strong connection to the Coca-Cola brand were more likely to recycle a Coke can than a Pepsi can. Similarly, participants who received a cup with their name spelled correctly were more likely to recycle it than those with incorrect name spelling or those who received a blank cup.

In another study by Winterich, Reczek, and Irwin (2017), consumers were less willing to donate clothing because of the strong self-identity attachment to their belongings. In a field study involving a campus donation drive, the researchers found that students who were encouraged to preserve memories of their donated items by taking photos were more likely to donate than those who did not have this prompt. The memory preservation strategy led to a 15% increase in donations, demonstrating the influence of identity on consumers' willingness to part with their possessions.

Social Identification:

Social and group identity plays a significant role in shaping sustainable behavior. People's attitudes, beliefs, and actions are often influenced by the groups to which they belong, sometimes even more so than their personal identity (Onorato & Turner, 2004). Individuals tend to imitate behaviors that reinforce their connection to the group. For instance, political affiliation heavily influences attitudes towards climate change. Conservatives and Republicans are generally less concerned about climate change than liberals and Democrats, as climate change has become highly politicized (Brulle, Carmichael, & Jenkins, 2012; McCright & Dunlap, 2011). When individuals strongly identify with a political group, they tend to adopt the group's stance on climate change, regardless of the information's merit (Cohen, 2003). This influence is seen in the significant shift in belief in climate change between Democrats and Republicans between 1997 and 2008, due to differing party stances (Dunlap, 2008).

Understanding the moral foundations of different groups can help drive sustainable behavior. Liberals and conservatives prioritize different moral values: liberals focus on harm and fairness, while conservatives emphasize in-group loyalty, respect for authority, and sanctity (Markowitz & Shariff, 2012). As a result, climate change issues hold greater moral weight for liberals because they frame it as harm to future generations and unfair burdens, which resonates with liberal moral concerns.

In terms of behavior, sustainable actions are more likely when messages align with consumers' political ideologies. Tailored messaging that focuses on the values of fairness and empathy resonates with liberals, while conservatives are more responsive to messages that emphasize duty and authority (Kidwell, Farmer, & Hardesty, 2013). Conversely, messages from an opposing ideology tend to decrease sustainable behaviors. People are also motivated to avoid behaviors that threaten their group identity. For example, men are less likely to engage in green behaviors when they perceive these behaviors as undermining their masculine identity (Brough et al., 2016). Additionally, people may be motivated to improve their behavior when they are outperformed by a

dissociative reference group, as it threatens their social identity (White, Simpson, & Argo, 2014). Status-seeking is another important motivator in human behavior. Traditionally, status was determined by birth, but today, wealth and material possessions increasingly signal status (Veblen, 1899; Belk, 1988). Costly signaling theory suggests that expensive or seemingly wasteful behaviors or products can signal an individual's ability to make sacrifices, which is seen as a valuable trait (Bénabou & Tirole, 2006; Zahavi, 1975). Griskevicius et al. (2010) argue that green products can act as "costly signals" because they often cost more and may offer lower quality than alternatives, demonstrating a consumer's willingness to incur these costs for the greater good. Additionally, people's investments in climate protection are often higher when they can gain social reputation and status, as seen in a public goods game that encouraged altruistic behavior for the benefit of society (Milinski, Semmann, Krambeck, & Marotzke, 2006). The possibility of gaining social reputation significantly increased personal investments in climate protection.

Social Influence and Social Norms:

Social influence is the change in a person's attitude or behaviour resulting from the influence of others in a group. Whereas social influence can occur on an interpersonal level in much the same way as one's social identity influences behaviour, social influence often results from other groups outside of one's group affiliations. The research highlighted here is resultant of influence without social categorization and therefore, not necessarily affiliation based. Social norms are a common type of social influence. Social norms are the unwritten rules developed through shared interactions of a social group that govern social behaviour. Social norms represent social approval and disapproval by specifying what ought and ought not be done; the repercussions of going against a social norm are the disapproval of peers and social sanctions (Cialdini 2004; Cialdini & Trost, 1998; Sunstein, 1996). Social norms exist for nearly every aspect of human behavior (Cialdini, 1993). Furthermore, norms are either descriptive or injunctive. Descriptive norms are characterized by the perception of what people commonly do,

while injunctive norms characterize what consumers ought to do and what is commonly approved or disapproved by a social group (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). Research has consistently demonstrated the benefits of communicating social norms across a variety of domains, indicating that social norms can influence changes in people's energy consumption (e.g., Allcott & Mullainathan, 2010), likelihood to compost (White & Simpson, 2013), likelihood to reuse towels in hotels (Goldstein, Cialdini, & Griskevicius, 2008), and likelihood to recycle (Meng & Trudel, 2017). Collectively, research shows that social influence, and social norms in particular, powerfully, predictably, and pervasively influence sustainable behaviors.

Descriptive and Injunctive Norms:

There are many ways to communicate descriptive norms to influence behaviour. For example, normative information of how many people are taking action can be communicated in marketing messages such as "90% of Boston residents recycle," "Two-thirds of your neighbors source their energy through renewable sources," or "Your energy consumption last month was above the average in your neighborhood." The effectiveness of these types of descriptive norm messages is evident in Goldstein et al.'s (2008) study. Two field studies investigating hotel towel reuse (energy conservation) revealed that consumers who received descriptive norm messages in their hotel rooms ("Join your fellow guests in helping save the environment") were more likely to reuse their towels than were consumers who received a standard environmental message ("Help save the environment"). Several examples in energy field studies have also successfully used descriptive norms to decrease energy consumption among consumers (e.g., Allcott, 2011; Ayres, Raseman, & Shih, 2013; Schultz et al., 2007). Allcott (2011) evaluated a series of programs run by Opower that send Home Energy Report letters to 600,000 residential utility customers providing similar normative information. The analyses estimated that the average program reduces energy consumption by 2.0%. Schultz et al. (2007) provided residents with descriptive norm information about the energy consumption of the

average household in their neighborhoods. They subsequently tracked energy consumption and found that providing descriptive norm information to high-usage consumers (those consuming above the average) decreased energy consumption but the same descriptive norm information inadvertently increased energy consumption in low-usage consumers (those consuming less than the average). However, adding an injunctive norm by including a happy face emoticon (☺) to signal approval of their behaviour eliminated the boomerang effect for low-energy consumers. Research has also shown that communicating what consumers ought to do can backfire as well. Kronrod, Grinstein, and Wathieu (2012) found that assertive, injunctive statements that framed a sustainable behaviour as a must (e.g., "Reducing air pollution: everyone must use more public transportation!") resulted in consumer reactance to the issue. Consumers reported lower intentions of complying with an assertive message depending on how important they perceived the issue to be, but responded positively to assertive messages when they believed the environmental issue to be important. However, when they believed the environmental issue to be less important, suggestive messages were more effective than assertive messages.

Social Proof:

Social proof is a form of descriptive social norm that demonstrates how people actually behave. It operates on the assumption that individuals often believe others have more knowledge about a situation and make better decisions as a result. When uncertain about how to act, people may look to others as a guide for appropriate behavior, perceiving actions as correct when they see others engaging in them (Cialdini, 1993). In their foundational research, Cialdini, Reno, and Kallgren (1990) showed the strong influence of social proof on littering behavior. In one experiment, they placed flyers on car windshields and manipulated social proof by having a confederate litter in front of half the participants. Those who witnessed the confederate littering were nearly twice as likely to litter themselves. Similarly, Bollinger and Gillingham (2012) studied the spread of rooftop solar panel adoption in California, finding that the number of homes with solar panels in a

particular area code predicted the likelihood of others in that area adopting solar energy. Seeing solar panels on neighbors' homes provided social proof of the behavior, leading to greater adoption of solar energy.

Product Characteristics and Sustainable Behaviour:

Sustainable products have characteristics that benefit both the environment and society during their use and disposal. While some studies show that consumers value sustainable attributes (e.g., Trudel & Cotte, 2009), their preferences for these products depend on factors like how consideration sets are formed (Irwin & Naylor, 2009), their worldviews (White, MacDonnell, & Ellard, 2012), and the specific benefits they expect from certain product categories (Luchs, Naylor, Irwin, & Raghunathan, 2010). For instance, consumers tend to prefer large assortments of products (e.g., Broniarczyk, Hoyer, & McAlister, 1998; Whitley, Trudel, & Kurt, 2018), but how consideration sets are formed influences the importance placed on ethical attributes. When consumers form these sets by excluding options, they tend to prioritize ethical attributes more (Irwin & Naylor, 2009). Additionally, consumers' preferences for ethical attributes can vary based on their consumption goals. For example, Luchs et al. (2010) found that sustainable products are associated with gentleness, while traditional products are linked to strength. Sustainability may be seen as a drawback when consumers seek products related to strength. In their experiments, Luchs et al. (2010) found that consumers preferred sustainable products for gentler items (e.g., baby shampoo) but chose traditional products for strength-related items (e.g., car tires). Trudel and colleagues (2013, 2016) also explored how product distortion—such as changes in size or form during use—affects disposal behavior. They found that people are more likely to throw away paper that has been torn, cut, or crumpled than paper that remains intact. These findings suggest that product and packaging design should aim to minimize distortion, as stronger and longer-lasting products are more likely to be recycled rather than thrown away. Easy-to-open packaging that prevents distortion can also increase recycling rates compared to difficult-to-open packaging (Baxter & Childs, 2017).

Conclusion:

Marketing often contradicts sustainability, as it typically promotes increased consumption, which can harm the environment. Marketers use insights from consumer psychology to encourage more purchasing through product design, advertising, and other strategies (Cramer et al., 2014). However, understanding how consumers make decisions is also vital for encouraging more sustainable behaviors. The research on sustainable consumer behavior is crucial for shaping green strategies at both the government and business levels. Policymakers and organizations focused on sustainability need to understand the motivations behind consumer choices, consumption, conservation, and disposal behaviors that impact the environment. The studies reviewed here span the past two decades, highlighting the psychology behind sustainable consumer behavior and offering valuable insights for influencing more sustainable decisions. This research covers a variety of factors that influence sustainable decision-making. While research in these areas has progressed, other aspects like attitude formation, information processing, moral regulation, emotions, psychological ownership, goals, power, and product design remain underexplored in leading academic journals. Moreover, most research has focused on low-impact, frequently performed behaviors (e.g., turning off lights, reusing towels, recycling cans) rather than high-impact, infrequent actions (e.g., installing solar panels; Bratt, Stern, Matthies, & Nenseth, 2015; Stern, 2000, 2014). Though both types of behaviors are often treated similarly, it is likely that the decision-making process differs for high-impact behaviors, as they involve more complex considerations, such as financial trade-offs. Future research should focus on understanding high-impact behaviors better and developing theories that can guide decisions for actions with greater environmental impact.