

Reppmann, Manuel; Harms, Stephan; Edinger-Schons, Laura Marie; Foege, Johann Nils

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# Activating the sustainable consumer: The role of customer involvement in corporate sustainability

Manuel Reppmann<sup>1</sup> · Stephan Harms<sup>2</sup> · Laura Marie Edinger-Schons<sup>1</sup> · Johann Nils Foege<sup>2</sup>

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## Abstract

Tackling grand challenges and making sustainable development a reality through sustainable consumption crucially depends upon both companies' activities as well as individuals' consumption choices. In opinion polls, many consumers claim to favor sustainable products over conventional ones. However, a large gap remains between their stated purchasing intentions and actual decisions, posing a challenge for companies in predicting product demand and strategically managing their product portfolios. In this study, we develop a conceptual framework to demonstrate how companies can encourage sustainable consumption behavior among their customers by involving them in their corporate sustainability (CS) activities. We introduce psychological ownership as the underlying mechanism explaining how customer involvement in CS activities translates into changes in their consumption choices. We further argue that the link between customer involvement and psychological ownership depends on the type of a company's CS—that is, whether CS is embedded in or peripheral to the company's core business. The results from three experiments, including one field experiment conducted in collaboration with a fashion retailer and involving real customer purchase decisions, support our theorizing. The findings reveal the power of customer involvement as a marketing tool in promoting sustainable consumption.

**Keywords** Corporate sustainability (CS) · Customer involvement · Psychological ownership · CS embeddedness · Sustainable consumption

## Introduction

Today's world faces unprecedented grand challenges, such as climate change, biodiversity loss, and general resource scarcity. Current worldwide consumption depends on using natural resources in a way that continues to affect the planet adversely, endangering human existence (IPCC, 2021).

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✉ Manuel Reppmann  
manuel.reppmann@uni-hamburg.de  
  
Stephan Harms  
stephan.harms@ernstings-family.com  
  
Laura Marie Edinger-Schons  
laura.marie.edinger-schons@uni-hamburg.de  
  
Johann Nils Foege  
nils.foege@wa.uni-hannover.de

<sup>1</sup> Professorship for Sustainable Business, University of Hamburg, Rentzelstrasse 7, 20146 Hamburg, Germany

<sup>2</sup> Innovation Management Group, Leibniz University Hannover, Königsworther Platz 1, 30167 Hannover, Germany

Efforts to make the economy more resource-efficient depend not only on companies' sustainable production but also on individuals' sustainable consumption choices (Huang & Rust, 2011). Consumers typically say they want companies to offer a wider selection of sustainable products but tend not to purchase them (Devinney et al., 2010), leading White et al., (2019a, 2019b) to speak of “the elusive green consumer.” This gap between intention and behavior can be frustrating for companies, making it more challenging for them to strategically manage their product portfolios. Therefore, some companies are shifting from merely supplying sustainable products to purposefully developing marketing strategies that aim at driving change that seeks to reduce the intention-behavior gap in sustainable consumption (Winterich, 2021).

Marketing research provides a comprehensive toolbox that companies can use to motivate sustainable consumption (White et al., 2019a, 2019b), including instruments such as appeal-based communication (White & Simpson, 2013). Apart from that, a few recent studies indicate that involving customers in a company's corporate sustainability (CS) efforts, which encompass social and environmental activities, improves their general attitudes and behaviors toward

the company and its products (e.g., Edinger-Schons et al., 2020; Iglesias et al., 2020). While these studies speak to a shift in marketing research and practice toward harnessing customers' potential as active contributors to a company's activities beyond the mere economic transaction (Harmeling et al., 2017), scholars have not yet uncovered the full potential of engaging customers regarding sustainable consumption (de Ruyter et al., 2022). Uncovering this potential is critical for researchers and practitioners to understand and activate sustainable consumption behaviors. In turn, sustainable consumption is crucial for the transition to a more sustainable economy. Therefore, we seek to answer the following research question: *How does customer involvement in companies' CS activities shape their sustainable consumption?*

To answer this, we introduce psychological ownership (Pierce et al., 1991) as the underlying mechanism connecting customer involvement in CS activities and sustainable consumption. Psychological ownership refers to a sense of possessing a desirable object, e.g., an idea, product, or organization, independently of the legal ownership of this object (Pierce et al., 2001). Researchers have proposed this concept as an outcome of customer involvement (Harmeling et al., 2017) and a theoretical lens to understand individuals' sustainability behaviors (Bhattacharya et al., 2022; Süssenbach & Kamleitner, 2018). Psychological ownership emerges, among other ways, when individuals gain control and the opportunity to invest themselves in an object that satisfies their individual needs (Shu & Peck, 2011). Following Harmeling et al. (2017), we propose that a company's involvement of customers in CS initiatives aligns with these routes toward psychological ownership. Specifically, this alignment arises as customers participate in shaping CS activities, granting them a sense of control over them and enabling customers to invest themselves in these endeavors. We suggest that customers' psychological ownership of a company's CS activities (i.e., "sustainability at this company is MY topic") triggers them to shop more sustainably with the company, and take such actions as replacing conventional products with sustainable alternatives in their shopping carts. In this way, they intend to support the company's effort to become more sustainable.

Furthermore, we introduce the concept of embeddedness of CS activities in the companies' core business (Aguinis & Glavas, 2013) as a critical boundary condition for the link between customer involvement and psychological ownership. We argue that embedded CS activities, which rely on a company's core competencies and are integrated into its strategy and operations, constitute a more desirable object of psychological ownership than peripheral activities that are not related to a company's core business. Examples of such embedded activities are reducing CO<sub>2</sub> emissions in the production process or offering fair payment to workers.

Customers are inclined to engage in these activities as they signal a company's genuine commitment to CS more strongly and exert a more substantial and longer-lasting impact on the company and society than peripheral CS activities like philanthropic giving (e.g., Aguinis & Glavas, 2013; Halme & Laurila, 2009; Porter & Kramer, 2006). Therefore, we suggest that customers are more likely to develop psychological ownership through involvement in embedded rather than peripheral CS.

To test our theorizing, we conducted three experiments in collaboration with a large German fashion retailer: two lab experiments, in which we captured consumption behavior via an online shop simulation, and one field experiment, in which we manipulated the retailer's newsletter and observed real customer behavior. Our findings broadly support our theorizing. First, they show that customer involvement enhances sustainable consumption behavior by increasing the proportion of sustainable products in customers' shopping carts, and customers' feelings of psychological ownership toward the company's CS efforts mediate this relationship. Furthermore, the results show that the embeddedness of CS moderates the link between customer involvement and psychological ownership. This indicates that the development of psychological ownership of a company's CS activities is context-specific depending on the type of CS activity. Beyond that, we also observed increased email opening and feedback rates, along with more extensive feedback texts, as a form of extra-role behavior in the case of embedded compared to peripheral CSR.

Our study contributes to the literature on marketing and sustainable consumption in several meaningful ways. First, it offers new insights into incentivizing sustainable consumer behavior by examining the role of customer involvement in CS activities as a form of two-way communication. We thereby move beyond traditional one-way communication strategies and explore the potential of aspects related to customer engagement marketing (i.e., encouraging customers' active participation, leveraging their resources, and increasing their sense of control and influence; Harmeling et al., 2017) to mitigate the intention-behavior gap in sustainable consumption. We also join the conversation about the broader movement in general marketing research that aims to understand how marketing can have a positive impact on sustainable development beyond traditional financial outcomes (Chandy et al., 2021; Davis & Pechmann, 2020; de Ruyter et al., 2022; Mende & Scott, 2021).

Second, we argue and show that psychological ownership of a company's CS activities is critical for understanding the link between customer involvement and sustainable consumption. In doing so, we emphasize that a lack of psychological ownership is an often overlooked barrier that contributes to the intention-behavior gap (e.g., Gleim et al., 2013). In addition, we demonstrate how psychological

ownership of CS activities can also foster extra-role behaviors, as observed through feedback on these activities which guides companies' strategies toward becoming more sustainable (i.e., consumer-based strategy, Hamilton, 2016).

Finally, we draw on the concept of CS embeddedness to argue and demonstrate that the connection between customer involvement and psychological ownership is context-dependent. Particularly, psychological ownership is more effectively stimulated by activities integral to a company's core business than those detached from it. Consequently, we infer and show that communicating about and involving customers in embedded CS activities offers various advantages to companies compared to peripheral CS initiatives.

In what follows, we provide an overview of selected literature from which we draw to gradually develop our hypotheses connecting the elements of customer involvement, psychological ownership, and sustainable consumption to our conceptual framework. Subsequently, we present the three studies that test our hypotheses. Afterward, we conclude with a discussion of the conceptual and practical implications arising from our findings.

## Conceptual background and hypotheses

### Overview of relevant literature streams

In this study, we investigate the link between customer involvement, psychological ownership, and sustainable consumer behavior. Table 1 provides a systematic overview of the literature streams that we integrate to derive our conceptual framework. It shows that, despite the interrelation of these three elements, scholars have not yet integrated them into a comprehensive framework to investigate how sustainable behavior among consumers can be fostered. Instead, they focused on the interlinkages of these elements separately, such as the connection between customer involvement and psychological ownership or psychological ownership and sustainable consumer behavior. In the subsequent chapters, we derive our conceptual framework and hypotheses by drawing from the literature fields in Table 1 to argue that the link between customer involvement and sustainable consumer behavior is mediated by customers' feelings of psychological ownership of a company's sustainability activities.

### The intention-behavior gap in sustainable consumption

Responsible consumption and production, i.e., the twelfth of the United Nations' Sustainable Development Goals, is at the center of the global sustainable development agenda (United Nations, 2022). Although sources in academia,

business, and government agree that consumption patterns must become more sustainable, little consensus exists on what sustainable consumption is (Fischer et al., 2021; Lim, 2017). The debate about the concept is framed in terms of what should change and how. Should we reduce consumption in general, or only prioritize sustainable over conventional products (Lorek & Fuchs, 2013)? Should we restrict the concept of sustainable consumption to the purchase and use of the product, making it the consumer's responsibility, or should we broaden its scope to include the whole product life cycle, making it everyone's responsibility (Fischer et al., 2021)?

Some researchers question the very idea of sustainable consumption, arguing that it is impossible and oxymoronic since consumption always involves the depletion or destruction of resources (Lim, 2017). Acknowledging the complex nature of the concept, we use the term sustainable consumption to relate to the sustainability of purchasing decisions, as individuals seek to act responsibly while fulfilling their consumption needs (Vermeir & Verbeke, 2006). Depending on the relative strengths of their desire to act responsibly and their need to consume resources, consumers will choose sustainable products over conventional products or vice versa. Numerous surveys confirm the desire for a more eco-friendly and socially responsible lifestyle, a trend that has increased during the COVID-19 pandemic (IBM, 2020). Against this backdrop, it is noteworthy that price and convenience remain the key factors for purchasing decisions (PwC, 2022). This observation points to the discrepancy between intentions to buy sustainable products and the extent to which these intentions translate into real behaviors (Gleim et al., 2013). Scholars refer to this discrepancy as the intention-behavior gap (Hulland & Houston, 2021).

The inconsistency between individuals' attitudes and intentions and their actual behavior is a well-known phenomenon in social science (Sheeran & Webb, 2016) observed and investigated in various contexts, such as health and education. Prior research explored factors contributing to this disparity and developed interventions to bridge the gap in specific contexts (for a comprehensive overview, see, e.g., Glasman & Albarracín, 2006; Sheeran, 2002; Webb & Sheeran, 2006). In recent decades, the intention-behavior gap has received increasing attention in sustainable consumption research (Kollmuss & Agyeman, 2002). Extant literature attributes the gap to a combination of factors: a lack of information about, and availability of, sustainable product alternatives; the social and physical context of each purchase; consumers' financial situations; and beliefs, perceptions, and biases related to sustainable products (Chatzidakis et al., 2007; ElHaffar et al., 2020; Gleim et al., 2013; Janssen & Vanhamme, 2015; Luchs et al., 2010; Öberseder et al., 2011; Park & Lin, 2020).

The intention-behavior gap is a critical issue for companies facing the dilemma that most of their customers demand, but

**Table 1** Selected research on customer involvement, psychological ownership, and sustainable consumer behavior

Authors / Year	Form of Involvement	Form of Ownership	Outcome	Findings	Contribution
<i>Customer Involvement → Sustainable Consumer Behavior</i>					
Hankammer et al., (2021)	Co-design in a mass customization (MC) setting	/	Purchase of sustainable products	MC supports sustainable consumption behavior. Companies can nudge consumers toward more sustainable choices by designing more environmentally-friendly default options in configurators (e.g., for TVs)	MC enables customers to transfer their pro-environmental attitudes into action (i.e., more sustainable product choices)
Weber et al., (2021)	Interactive workshop at a consumer fair	/	Willingness to pay for sustainable products	Experiential marketing tools can foster sustainable consumption. Among other findings, the study shows that participation in an interactive presentation of a sustainable coffee company at a consumer fair increases attendees' willingness to pay more (WTP) for sustainable coffee	Marketing interventions using two-way communication formats can enhance WTP for sustainable products
Korschun and Du, (2013)	Co-creation via virtual customer dialogues	/	Support for a co-created social cause	Framework explaining how virtual CS dialogs generate value. Among other things, it suggests that these dialogs between a company and its customers lead to support for the social cause in which customers are involved depending on their identification with the dialog community	CS dialogs between a company and its customers can lead to the co-creation of value for both the company and society
<i>Customer Involvement → Psychological Ownership (PO)</i>					
Carrozzi et al., (2019)	Customization of augmented reality (AR) holograms	PO of AR holograms	PO for AR holograms of physical products	Customers' customization of AR holograms can generate PO similar to that of physical products. This sense of PO is particularly influenced by shared experiences and social identity processes among users	Customization of intangible objects (such as holograms) can lead to PO feelings toward these objects
Jaakkola and Alexander, (2014)	Stakeholder involvement program in a railway station	PO of railway station and its offerings	Customer engagement behaviors for the railway station	Individuals' involvement in the service provision of a railway station enables them to develop PO feelings toward this station, which drive customer engagement behavior (e.g., provision of own resources)	Involving stakeholders in the development of a project fosters PO toward this project among them

Table 1 (continued)

Authors / Year	Form of Involvement	Form of Ownership	Outcome	Findings	Contribution
Fuchs et al., (2010)	Customer involvement in product selection	PO of product	Purchase intention of self-selected products	Customers empowered to select products marketed by the company experience a heightened sense of PO for these products, which increases the product demand	Involving customers in strategically relevant decisions, such as selecting products to be marketed, leads to PO
<i>Psychological Ownership → Sustainable (Consumer) Behavior</i>					
Peck et al., (2021)	/	PO of public goods such as the natural environment	Stewardship behavior for public goods	Enhancing an individual's PO of a public good promotes stewardship behavior, including activities like cleaning up a lake and making donations, with perceived responsibility mediating the effect of PO on these behaviors	Increasing PO can enhance stewardship behavior for public goods and shared resources, such as the natural environment
Fritze et al., (2020)	/	PO of access-based services	Reduction of material use	Triggering feelings of PO for access-based services (e.g., carsharing) through various measures increases customers' willingness to adopt these services as substitutes for material possessions	PO of access-based services can increase service use and reduce own material ownership
Felix and Almaguer, (2019)	/	PO of the natural environment	Recycling intentions and the intention to purchase green products	Individuals' PO feelings toward the natural environment are positively related to recycling intentions and the intention to purchase green products	PO feelings toward the natural environment can foster sustainable consumption behavior
<i>Customer Involvement → Psychological Ownership (PO) → Sustainable Consumer Behavior</i>					
This paper	Customer involvement in CS activities	PO of a company's CS activities	Proportion of sustainable products in shopping carts	Customer involvement in a company's CS activities leads to PO of these activities, which, in turn, facilitates sustainable consumption behavior when shopping with the company. CS embeddedness moderates this mechanism	Customer involvement in CS activities fosters sustainable consumption behavior via PO



do not purchase, sustainable products and services (White et al., 2019a, 2019b). To engage with the gap, companies are increasingly exploring new ways to interact with their customers and incentivize sustainable consumption (Bocken, 2017), for instance, as demonstrated by companies that have joined the European Commission Sustainable Consumption Pledge launched in 2021 (European Commission, n.d.). One of Europe's largest fashion retailers published a report describing how it wants to work with consumers to close the intention-behavior gap for sustainable fashion (Zalando, 2021). However, to encourage consumers to change their behavior, companies not only need to be committed to the idea but also need to know how to put it into practice.

One way to engage with consumers is through marketing interventions incentivizing sustainable behavior, sometimes referred to as “demarketing” or green and social marketing (Gordon et al., 2011; Kotler, 2011; Peattie & Peattie, 2009). These interventions include, for example, nudging techniques to influence individuals' judgment through signaling or labeling (Kristensson et al., 2017), and changing the physical purchase environment or the default option (Hankammer et al., 2021; Lehner et al., 2016; Pilaj, 2017). Another way to engage with customers is through appeal-based communication about sustainable behavior (Mai et al., 2021), such as need-based appeals (White et al., 2012), normative appeals (White & Simpson, 2013), benefit-oriented appeals (White & Peloza, 2009), and motivation-based appeals (Edinger-Schons et al., 2018). Marketing research provides valuable insights into understanding and leveraging the impact of these interventions on consumers. For instance, White et al., (2019a) provide an overview of how different appeal types can influence sustainable behavior by affecting individuals' sense of self, emotions, and cognition.

### Sustainable consumption and customer involvement

Although the existing body of marketing research provides insights that can help narrow the intention-behavior gap in sustainable consumption, it mainly considers interventions as one-way dissemination of information to customers, but neglects the potential of two-way interaction for green and social marketing (Fischer et al., 2021; Peattie & Peattie, 2009). Few studies illustrate the potential to foster sustainable consumption. Hankammer et al. (2021) show how customer co-creation in a mass customization setting can be utilized to increase the purchases of TVs with a lower carbon footprint. Further, Weber et al. (2021) observed that participation in an interactive presentation about a sustainable coffee company at a consumer fair resulted in an increased willingness to pay for the company's products. Korschun and Du (2013) developed a framework explaining how companies engaging in virtual customer sustainability dialogues and co-creation encourage sustainable behavior.

Besides these studies, there is a limited understanding of how various forms of customer involvement in the context of CS impact sustainable consumer behavior. Instead, most research in this field focuses on customer involvement as a means to increase traditional, non-sustainability-related customer outcomes, such as purchase intention and loyalty (e.g., Iglesias et al., 2020; Lee et al., 2021). For instance, Edinger-Schons et al. (2020) found that involving customers in CS activities by asking them for feedback and inviting them into a dialogue strengthens their loyalty and identification with the company. Similarly, studies on cause-related marketing highlight the potential positive influence of customer involvement via customers' choice of cause to enhance outcomes such as purchase intentions (Robinson et al., 2012), word-of-mouth (Christofi et al., 2020), participation intentions (Howie et al., 2018), and brand attitude and attachment (Kull & Heath, 2016). In sum, existing research consistently shows links between customer involvement in CS and various customer outcomes. Although most studies focus on conventional, non-sustainability-related outcomes, some studies provide initial evidence for the case of sustainable consumption. This leads us to argue that customer involvement could be a promising avenue to enhance sustainable consumption and deserves further investigation.

### Psychological ownership and consumer research

We will now delve into the psychological mechanisms that drive the potential influence of customer involvement on sustainable consumption behavior. To date, we know little about these psychological mechanisms. Research suggests that customers' psychological ownership, which emerges from their active participation in company activities, plays a pivotal role in shaping their general attitudes and behaviors toward a company (Harmeling et al., 2017). This research serves as our starting point for developing a more comprehensive understanding of how customer involvement may translate into sustainable behavior through psychological ownership.

According to Pierce et al. (1991), ownership takes two forms: formal (objective) ownership and psychologically experienced ownership. The latter type – psychological ownership – is a state in which an individual feels as though a target object is his or her “own” (i.e., this is “my shirt” rather than “a shirt”) regardless of the presence of legal rights or physical possession (Pierce et al., 2001). Research in psychological ownership attempts to answer three main questions: For which objects do we develop feelings of psychological ownership? Why? And how?

As for the “what,” individuals can develop feelings of possession for almost anything, including non-physical objects, such as augmented reality holograms (Carrozzi et al., 2019) and ideas (Schäper et al., 2021), or physical objects, such as the workplace (Pierce et al., 2004), products (Peck & Shu,

2009), and entities held in common by all humans, such as the natural environment (Peck et al., 2021). As for the “why,” feelings of ownership depend on the characteristics that a target embodies, which fulfill basic human needs such as individuals’ self-identity, efficacy, and effectance. Self-identity refers to individuals’ understanding and perception of themselves and their unique characteristics. Efficacy is individuals’ ability to produce a desired or intended result, while effectance describes their perceived competence or effectiveness in changing their environment (Pierce et al., 2001). A psychologically owned target needs to be attractive and relevant to the self to satisfy the self-identity motive, and manipulable and controllable to enhance individuals’ efficacy and effectance (Pierce & Peck, 2018). As for “how,” if these characteristics are present, it is possible to derive a sense of ownership for the target through different routes, such as exercising control over and investing oneself in it through money, time, or psychological effort (Brown et al., 2014).

Several studies in consumer research illustrate how companies can activate these routes toward psychological ownership through different forms of customer involvement. For instance, customers experience ownership feelings for a product when they co-develop it, enabling them to exercise control over and invest themselves in it (Harmeling et al., 2017). Some studies also refer to this as the “Ikea effect” (Mochon et al., 2012; Sarstedt et al., 2017) or the “I designed it myself effect” (Franke et al., 2010). Carrozzini et al. (2019) show that the customization of augmented reality holograms allows customers to feel psychological ownership similar to that of physical products. Similarly, Fuchs and colleagues demonstrate that when customers are empowered to choose which products a company should promote, there is a notable increase in demand for these products (Fuchs et al., 2010). The authors attribute this higher demand to customers’ increased sense of psychological ownership over the products they have selected. In a different context, Jaakkola and Alexander (2014) show how the involvement of stakeholders in the provision of services at a train station, such as gardening, bookshops, and community meeting places, leads to ownership feelings toward this station, which, in turn, drives customer engagement behavior.

### **Psychological ownership, customer involvement in CS, and sustainable consumption**

Building on the notion above, we argue that customers can also develop ownership feelings for companies’ CS activities through involvement. Specifically, we expect that customers’ involvement in a company’s CS will enhance their sustainable consumption behavior and that this relationship will be mediated by their psychological ownership of the company’s sustainability. Several arguments support this claim.

First, sustainability is a topic of increasing societal importance (Chandy et al., 2021; de Ruyter et al., 2022). Hence, companies’ sustainability efforts can embody characteristics perceived as attractive, relevant, socially esteemed, and self-revealing for consumers. Such characteristics satisfy the motive for self-identity that can lead to feelings of psychological ownership (Griskevicius et al., 2010). When a company communicates its CS activities to consumers, these activities, and the company’s sustainability efforts in general, become a potential target for ownership. Inviting consumers to participate in these CS activities strengthens the feeling that the ownership target is, at least to a certain extent, manipulable and controllable, satisfying their need for self-efficacy and effectance (Pierce et al., 2001). Depending on the extent of the involvement, that is, depending on the extent to which the customers receive information, can provide feedback, and engage in a dialogue (Morsing & Schultz, 2006), the salience of manipulability and controllability can vary.

Involving customers in CS activities shapes the target’s characteristics, making its possession more desirable and enabling the experience of psychological ownership through the customer’s perceived control over and possibility to invest in those activities. Thus, we conclude that all conditions are fulfilled for a company’s CS activities to be an attractive target of psychological ownership and that involvement creates the experience necessary to instill psychological ownership in customers.

Second, an increase in psychological ownership typically enhances the valuation of, and attitudes toward, the object of ownership. This is known as the endowment effect (Kahneman et al., 1990; Shu & Peck, 2011), and induces favorable behavior to protect, maintain, develop, and nurture the object (Peck et al., 2021). For example, in one of their studies Peck and colleagues (2021) asked customers at a kayak rental on a local lake to propose a nickname for the lake before starting the kayak tour. This intervention can be considered an investment of the self. The research team found that the individuals who were asked to propose a name picked up floating trash during their tour significantly more frequently than individuals in the control group. A survey revealed that higher psychological ownership feelings mediated the trash-collecting. In the same vein, Felix and Almaguer (2019) give evidence for the idea that individuals’ feelings of psychological ownership toward the natural environment are positively related to their intention to recycle and buy sustainable products. Additionally, Fritze et al. (2020) provide insights into how offering customers access-based services, rather than physical ownership of material goods, evokes a sense of psychological ownership, fostering sustainable behavior by reducing material consumption. As we see from these findings, psychological ownership can foster sustainable behavior. However, the relationship between psychological



ownership and sustainable behavior still merits further exploration (Süssenbach & Kamleitner, 2018). This is particularly true in terms of investigating how companies can leverage psychological ownership to promote sustainable consumption and successfully shape the transition toward a sustainable economy.

Taken together, we suggest that customer involvement in a company's CS activities will lead to enhanced feelings of ownership of the company's sustainability. This will translate into an increased willingness among customers to engage in sustainable consumption, as they will consider the company's sustainability efforts as their own project, which they want to support and make successful (i.e., the endowment effect). Therefore, we hypothesize:

- H1** Customer involvement in a company's CS activities will positively affect customers' sustainable consumption behavior with the company.
- H2** Customers' psychological ownership of a company's CS activities mediates the positive effect of customer involvement on sustainable consumption with the company.

### **The role of corporate sustainability embeddedness for psychological ownership**

In the last decade, many companies have begun to communicate about their CS efforts to the public. Their efforts range from talking about substantive transformational practices to advertising CS activities somewhat disconnected from the company's core business (Wickert et al., 2016). Prior research confirms that CS communicating in general has the potential to positively influence customers' attitudes and behaviors toward a company (e.g., Du et al., 2010; Sen et al., 2016). For instance, previous research has demonstrated that customers experience benefits such as "warm glow" feelings when buying from a company engaged in good deeds (Andrews et al., 2014; Habel et al., 2016; Koschate-Fischer et al., 2012). However, researchers share the notion that stakeholders perceive different CS activities differently (de Jong & van der Meer, 2017).

CS activities vary in the extent to which they shape specific outcomes related to stakeholders' perception of a company's CS efforts and their core business relevance (e.g., Rodrigo et al., 2019; Vredenburg et al., 2020; Wang et al., 2017). Therefore, scholars developed various frameworks to classify different CS practices depending on their alignment with a company's core business (de Jong & van der Meer, 2017; Peloza & Shang, 2011; Yuan et al., 2011). In this article, we use Aguinis and Glavas's (2013) concept of CS embeddedness. We distinguish "embedded" and "peripheral" activities to argue that the development of psychological ownership feelings depends on the type of activities customers are involved in.

Embedded CS activities are sustainability activities at the core of companies' competencies. They are holistically integrated into the strategies, routines, and operations of the company. Examples of such activities would be redesigning business operations to reduce emissions or sourcing more sustainable materials from suppliers that comply with labor rights standards (Aguinis & Glavas, 2013). Peripheral CS activities are those activities not aligned with the core business, such as philanthropic giving, community development, and volunteering initiatives. Based on these distinct characteristics of CS activities, we reason that consumers perceive embedded CS activities as a stronger signal of a company's genuine commitment to CS while yielding a stronger, longer-lasting impact on the company and society than peripheral CS activities (Aguinis & Glavas, 2013; Halme & Laurila, 2009; Porter & Kramer, 2006). This argument can also be found in related literature investigating how similarities between the characteristics of a company and the characteristics of its CS activities determine the perception of these activities by stakeholders (i.e., CSR fit literature; de Jong & van der Meer, 2017; Yuan et al., 2011). In this vein, consumers could perceive embedded activities as a more attractive and meaningful target of psychological ownership than peripheral ones. This is due to the assumption that ownership of embedded activities more strongly addresses customers' need for self-identity, efficacy, and effectance.

To expand on the above, past literature suggests that individuals form judgments about companies or activities based on cues they observe, which can indicate such things as the company's characteristics and values (Purohit & Srivastava, 2001; Skowronski & Carlston, 1987). Cues can vary in their predictive value, that is, in the degree to which the information they provide is valid. We argue that cues with high predictive value allow clear and unambiguous judgment of a company's characteristics and values (Purohit & Srivastava, 2001). Since embedded CS activities provide a stronger link between a company's true nature and the greater good, they should have a higher predictive value concerning the company's purpose and impact on its environment than peripheral activities. Thus, embedded activities could incentivize customers to affiliate more with the company's sustainability efforts than peripheral activities. This affiliation could increase customers' positive self-concept and self-determination. Accordingly, we argue that customer involvement in embedded, compared to peripheral, CS activities has distinct effects on the development of feelings of psychological ownership for these activities. Hence, we hypothesize:

- H3** The embeddedness of a company's CS efforts moderates the positive link between customer involvement in CS activities and psychological ownership of these activities such that the link will be more pronounced for embedded than for peripheral CS.

To test our three hypotheses that establish the conceptual framework of this paper, we conducted three studies. Figure 1 illustrates our conceptual framework and provides an overview of the studies we conducted. In what follows, we will describe each of the three studies in more detail. The first two are lab experiments in which we observed consumption behavior via an online shop simulation. The third study is a field experiment in collaboration with a fashion retailer in which we observed real online shopping behavior to replicate Studies 1 and 2 and prove the external validity of our findings.

## Study 1

### Method

Study 1, with a German fashion retailer in 2021, tested the effect of involvement in CS activities on the proportion of sustainable products in consumers' shopping carts (H1) and the mediating role of consumers' sense of psychological ownership (H2). We developed this study and the subsequent Studies 2 and 3 with the retailer. With over 12,000 employees and 1,900 stores across the country, this company is among the largest retailers in Germany. It offers clothes and accessories, mainly for women and children.

The study was designed as a single factor (customer involvement in CS versus no involvement in CS) between-subjects scenario experiment with a control group (communication about non-sustainable company activities without involvement). For the treatment development, we applied the retailer's newsletter template. Appendix A Figure 4 shows that we manipulated it to provide information about some of the company's embedded CS activities along the value chain, such as sourcing sustainable organic cotton and providing daycare services to employees. Additionally, the newsletter offered participants in the involvement group the opportunity to give feedback and develop these activities further (see Appendix B Figure 6). The control group received a non-sustainability-related newsletter without involvement, including information about general business activities, such as expanding the store network and implementing a logistics system (see Appendix A).

### Procedure

The experiment comprised four parts. First, we allocated and presented the manipulated newsletter to 377 participants recruited via Prolific, an online platform for connecting researchers and study participants. Since most Prolific users are from the UK, we focused on this market in Studies 1 and 2. We informed respondents that the retailer intended to expand into the UK market. Second, after the participants had read the newsletter texts, we invited only those in the

involvement group to give their ideas and feedback on the activities we presented through several tasks (Appendix B). These tasks included evaluating the activities on a scale, prioritizing them, and providing suggestions for how to develop and publicize them on the retailer's website. We conducted this experiment in line with studies on task-based involvement found in extant research (Harmeling et al., 2017; Pan-sari & Kumar, 2017).

Third, we asked all the respondents to pretend to shop in the retailer's online shop. To render the experience realistic, we simulated an online shop visit by directing them to a self-programmed, mock online shop with the retailer's branding. This opened in a separate window to avoid disrupting the survey's flow. We asked them to compile a shopping cart by choosing from about 150 products, a subset of which were labeled sustainable. The product portfolio and pricing were aligned with those used by the retailer. Please refer to Web Appendix A for screenshots of the online shop and additional details regarding the product assortment and pricing. We instructed respondents to behave as they would during a real online store visit (please see Web Appendix B for the instructions).

Fourth, after respondents completed the online shopping, we again showed them the newsletter and asked all participants to continue with the online survey and to respond to a subsequent questionnaire programmed as a series of web pages. Of the 377 recruited participants, we could match the survey data with the shop data in 266 cases ( $n_{\text{involvement}} = 106$ ;  $n_{\text{no involvement}} = 84$ ;  $n_{\text{control}} = 76$ ). The dropout rate resulted from human error (e.g., participants missed clicking on the "checkout" button) and technical glitches (e.g., slow shop response times due to high simultaneous user access). We found no systematic biases in our data caused by the dropout of participants (see Appendix F). Figure 2 shows details regarding the data collection procedure and dropout rates in Studies 1 to 3. The final sample of Study 1 consists mostly of women (68.4%) from the UK, with an average age of 36 years (see Appendix C Table 4).

### Measurement and scale evaluation

We measured sustainable consumption by calculating the percentage of products with a sustainability tag in the customer's shopping cart, ranging from 0 to 100%. We captured psychological ownership using well-established scales, which we adapted slightly to fit this study's context. Specifically, based on Brown et al. (2014), Fuchs et al. (2010), and Kirk et al. (2018), we included five items covering both the possessive nature (e.g., "I feel a sense of personal ownership of [company]'s sustainability activities") and the extended-self nature of psychological ownership (e.g., "I feel connected to the sustainability activities of [company]") measured on a 7-point Likert scale (1 = "Strongly disagree"; 7 = "Strongly agree").

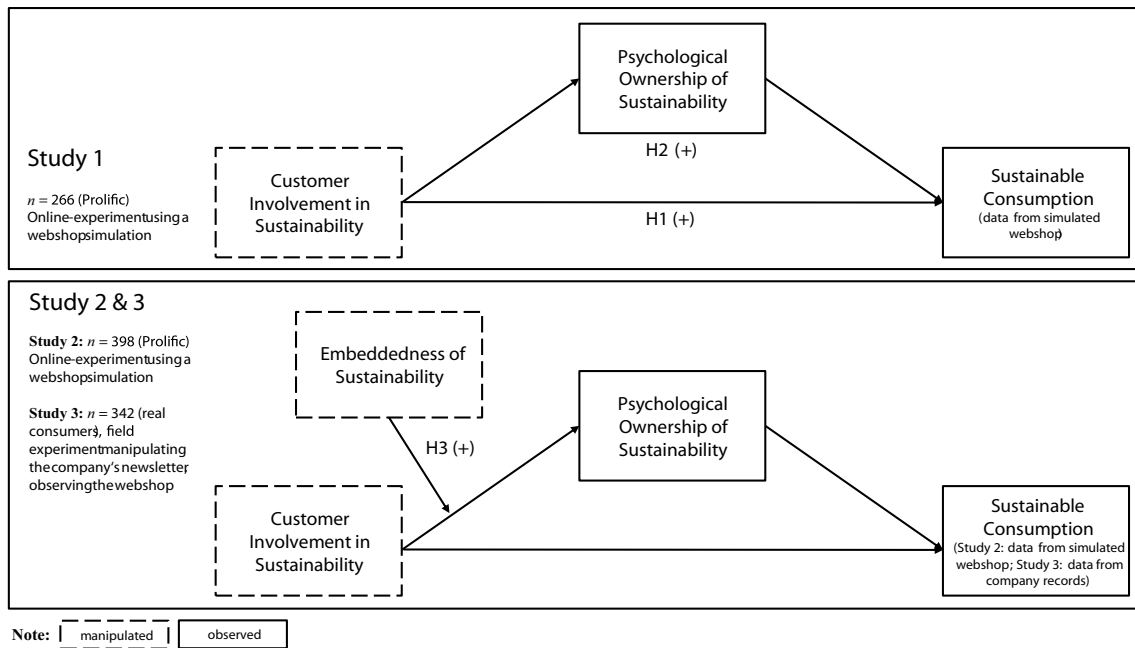


Fig. 1 Conceptual framework and study overview

agree”). The measure achieved adequate values for Cronbach’s alpha ( $\alpha=0.93$ ) (Nunnally, 1978) and average variance extracted (AVE=0.71) (Fornell & Larcker, 1981). Furthermore, we controlled for sustainable consumption involvement (SCI; “I take initiatives to act in environmentally and socially friendly ways in my daily life”). We took this step to factor out the potentially intervening effect of general pro-sustainability values and attitudes. We also included demographic factors (age, gender, and income) in our model. For a complete list of items used in the reported models across all studies and the scale evaluation, please see Appendix D Table 5).

## Results

### Manipulation checks

We performed a manipulation check to ensure that the manipulation worked as intended. For this, we developed three items to measure the degree of customers’ perceived involvement in the retailer’s embedded CS activities (e.g., “[company] offered me the opportunity to become involved in planning and developing its future sustainability activities”;  $\alpha=0.93$ ). All items were rated on 7-point Likert scales ranging from 1 “Strongly disagree” to 7 “Strongly agree.” We used a one-way analysis of variance (ANOVA) to compare the means between the treatment groups. The results revealed that the groups’ reported values on the perceived involvement scale varied significantly ( $F(2, 225)=82.73, p<0.001$ ). Participants in the involvement group reported the highest values on average ( $M=5.99, SD=1.05$ ) compared to the

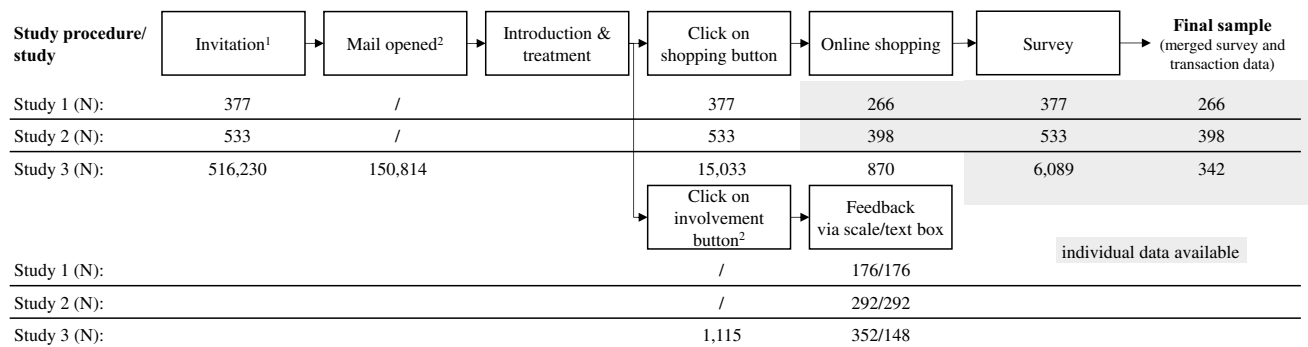
non-involvement ( $M=3.46, SD=1.34$ ) and control groups ( $M=3.42, SD=1.63$ ). Appendix E Table 6 shows the manipulation check items for all studies.

### Hypothesis testing

We created dummy variables for the involvement manipulation (1 for involvement and 0 for no involvement). For an overview of the descriptive statistics and correlations, please refer to Table 2. To test H1, we first ran an ANOVA to estimate the effect of the involvement treatment on participants’ sustainable consumption behavior. The ANOVA showed that the percentage of sustainable products in the shopping cart differed significantly across the treatment groups ( $F(2, 263)=14.25, p<0.001$ ). A Bonferroni post hoc test further indicated that the percentage of sustainable products was significantly higher for respondents in the group involved in the development of the CS activities ( $M=81.66, SD=28.96$ ) as opposed to the non-involvement ( $M=70.95, SD=34.00$ ) and control groups ( $M=57.45, SD=27.23$ ). The results confirm H1. Figure 3 illustrates the mean value comparisons of psychological ownership and sustainable consumption across the groups for Studies 1 to 3.

We conducted a second ANOVA using involvement as the independent variable and psychological ownership as the dependent variable. We found a significant difference between the groups in customers’ feelings of psychological ownership of the company’s sustainability efforts ( $F(2, 263)=11.53, p<0.001$ ). According to a Bonferroni post hoc test, the highest psychological ownership values were

## Data Collection Procedure Study 1-3



Notes: <sup>1</sup>invitations were distributed via Prolific in the lab experiment and via the company's mailing list in the field study; <sup>2</sup>these steps only apply to Study 3 (the field study); please note that in Study 3, the data related to the steps from "invitation to "online shopping" was collected at t0, while the survey data was collected two days later (t1).

**Fig. 2** Data collection procedure Studies 1 to 3

displayed by the involvement group ( $M_{\text{involvement}} = 3.98$ ,  $SD = 1.36$ ,  $M_{\text{no involvement}} = 3.36$ ,  $SD = 1.36$ ,  $M_{\text{control}} = 3.01$ ,  $SD = 1.42$ ). To empirically test the indirect effect of involvement on sustainable consumption behavior via psychological ownership feelings (i.e., H2), we used SPSS Version 28 and the SPSS PROCESS Macro 4.0 (Hayes, 2017). We ran Model 4 (5,000 bootstrap samples) with involvement in CS as an independent dummy variable (and no involvement in CS as the reference category). We used psychological ownership as a mediator, and the proportion of sustainable products as the dependent variable. We did not include the control group. In support of H2, we found a significant positive effect of involvement on customers' psychological ownership feelings ( $\beta = 0.44$ ,  $p = 0.026$ ). We also found a significant positive indirect effect of involvement on sustainable consumption via psychological ownership ( $\beta = 1.85$ , 95% CI = 0.09 to 4.73). Table 3 depicts the results.

In addition, we analyzed whether the treatments affected other outcomes, such as the total product cart value and the total number of sustainable products purchased. The results show no significant differences across the groups (Web Appendix E. To account for non-normality in our data, we conducted non-parametric tests and non-linear regressions as robustness checks for all three studies (Web Appendix C and D). The results of these checks are in line with our presented findings. Appendix F also addresses potential nonresponse and common method biases for all studies.

## Discussion

Study 1 supports our theorizing that involvement of customers in CS activities can incentivize them to replace conventional with sustainable products. Our results further support the assumption that customers' feelings of psychological ownership for the company's CS activities are an underlying mechanism to explain this observation. Our findings give insights into new

pathways to foster sustainable consumption behavior, but raise further questions about the conditions under which involvement works. Therefore, Study 2 replicates Study 1 while differentiating between customer involvement in embedded versus peripheral CS.

## Study 2

### Method, procedure, and measurement

In Study 2, we tested the entire conceptual framework as depicted in Fig. 1. This time, we incorporated CS embeddedness as a moderator of the link between involvement in CS activities and psychological ownership as part of the mediation of the relationship between customer involvement in CS activities and sustainable consumption (H3). The design, procedure, and applied measures in this study were identical to those in Study 1, with two exceptions. First, we distinguished between the type of sustainability the retailer engages in, resulting in a 2 (involvement versus no involvement)  $\times$  2 (embedded CS versus peripheral CS) between-subject scenario design. The CS activities used in the Study 1 treatments were directly related to the company's value creation. Thus, these activities fell into the "embedded" category. We added activities of the retailer to the second study that can be categorized as "peripheral." These are philanthropic activities unrelated to the company's core business. Participants in the peripheral CS group saw a newsletter containing information about activities such as sponsoring youth sports programs and supporting reforestation initiatives.

Second, we did not include a control group that would not receive sustainability communication, since we had already determined a baseline in Study 1. We used Prolific to invite 533 respondents to participate and assigned them to one of the treatment groups. The final sample, including the

**Table 2** Descriptive statistics and correlations Studies 1 to 3

Variable	M	SD	1	2	3	4	5
<b>Study 1</b>							
(1) Sustainable consumption <sup>a</sup>	71.36	31.66					
(2) Psychological ownership	3.51	1.43	0.23***				
(3) Customer involvement in CS <sup>b</sup>	—	—	0.27***	0.27***			
(4) Sustainable consumption involvement	4.78	1.38	0.24***	0.26***	0.17***		
<b>Study 2</b>							
(1) Sustainable consumption <sup>a</sup>	69.84	35.03					
(2) Psychological ownership	3.70	1.54	0.18***				
(3) Customer involvement in CS <sup>b</sup>	—	—	0.21***	0.11**			
(4) CS embeddedness <sup>c</sup>	—	—	0.11**	0.16***	0.16***		
(5) Sustainable consumption involvement	4.94	1.50	0.21***	0.33***	0.17***	0.05	
<b>Study 3</b>							
(1) Sustainable consumption <sup>a</sup>	33.35	30.36					
(2) Psychological ownership	4.63	1.34	0.20***				
(3) Customer involvement in CS <sup>b</sup>	—	—	0.12*	0.03			
(4) CS embeddedness <sup>c</sup>	—	—	0.09	0.24***	0.02		
(5) Sustainable consumption involvement	4.82	1.44	0.04	0.42***	0.03	0.09	
(6) Customer-company identification	4.67	1.48	0.00	0.49***	0.00	0.13**	0.29***

*M* mean, *SD* standard deviation

<sup>a</sup>Item ranging from 0–100 percentage points of sustainable products in customers' shopping cart

<sup>b</sup>Dummy: non-involvement in CS (0) vs. involvement in CS (1)

<sup>c</sup>Dummy: peripheral CS (0) vs. embedded CS (1)

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$  (two-tailed)

matched shop and survey data, comprised 398 valid cases ( $n_{\text{embedded}} = 81$ ,  $n_{\text{peripheral}} = 105$ ,  $n_{\text{embedded \& involvement}} = 127$ ,  $n_{\text{peripheral \& involvement}} = 85$ ). The participants' demographics closely resembled those in Study 1 (all  $ps > 0.10$ ).

## Results

### Manipulation checks

We again asked participants in the involvement and non-involvement groups to assess the extent to which they felt involved in the retailer's CS activities. As in Study 1, we found significantly different perceptions between the groups. In this study, we additionally evaluated respondents' perceptions of the CS activities as embedded in or peripheral to the retailer's core business. We measured embedded ( $\alpha = 0.96$ ) and peripheral CS ( $\alpha = 0.96$ ) with three items each (scale anchors from 1 = "Strongly disagree" to 7 = "Strongly agree"). As intended, participants in the embedded group as opposed to the peripheral group reported significantly higher values on the embedded scale ( $M_{\text{embedded}} = 5.96$ ,  $SD = 0.98$ ,  $M_{\text{peripheral}} = 3.99$ ,  $SD = 1.90$ ,  $F(1, 396) = 173.12$ ,  $p < 0.001$ ) and lower values on the peripheral scale ( $M_{\text{embedded}} = 3.28$ ,  $SD = 1.71$ ;  $M_{\text{peripheral}} = 5.91$ ,  $SD = 0.92$ ,  $F(1, 396) = 355.44$ ,  $p < 0.001$ ). We found no unintended cross-effects between the CS embeddedness and involvement treatments. Overall, we consider the manipulation to be successful.

### Hypothesis testing

As a first step, we ran an ANOVA with involvement in CS as the predictor of the proportion of sustainable products in the shopping cart. The results, again, confirmed H1, showing that the participants chose sustainable products more frequently when they had been invited to get involved ( $M = 76.83$ ,  $SD = 31.70$ ) than when they had not ( $M = 61.87$ ,  $SD = 36.98$ ,  $F(1, 396) = 18.88$ ,  $p < 0.001$ ). We then began the testing of H3 with a pair of two-way ANOVAs in which involvement in CS and CS embeddedness were the independent variables. Sustainable consumption and psychological ownership were dependent variables.

The results of the first ANOVA indicate a significant main effect of involvement on sustainable consumption ( $F(1, 394) = 16.28$ ,  $p < 0.001$ ). The main effect of CS embeddedness ( $F(1, 394) = 2.58$ ,  $p = 0.109$ ) and the interaction effect of involvement and CS embeddedness on sustainable consumption ( $F(1, 394) = 0.06$ ,  $p = 0.810$ ) are not significant. The results of the second ANOVA reveal no significant main effect of involvement ( $F(1, 394) = 2.47$ ,  $p = 0.117$ ), a significant main effect of CS embeddedness ( $F(1, 394) = 7.27$ ,  $p = 0.007$ ), and a significant interaction effect of involvement and CS embeddedness on psychological ownership ( $F(1, 394) = 7.07$ ,  $p = 0.008$ ). As H3 projects, simple effects indicate that in the embedded CS condition, psychological ownership was significantly higher when they had become



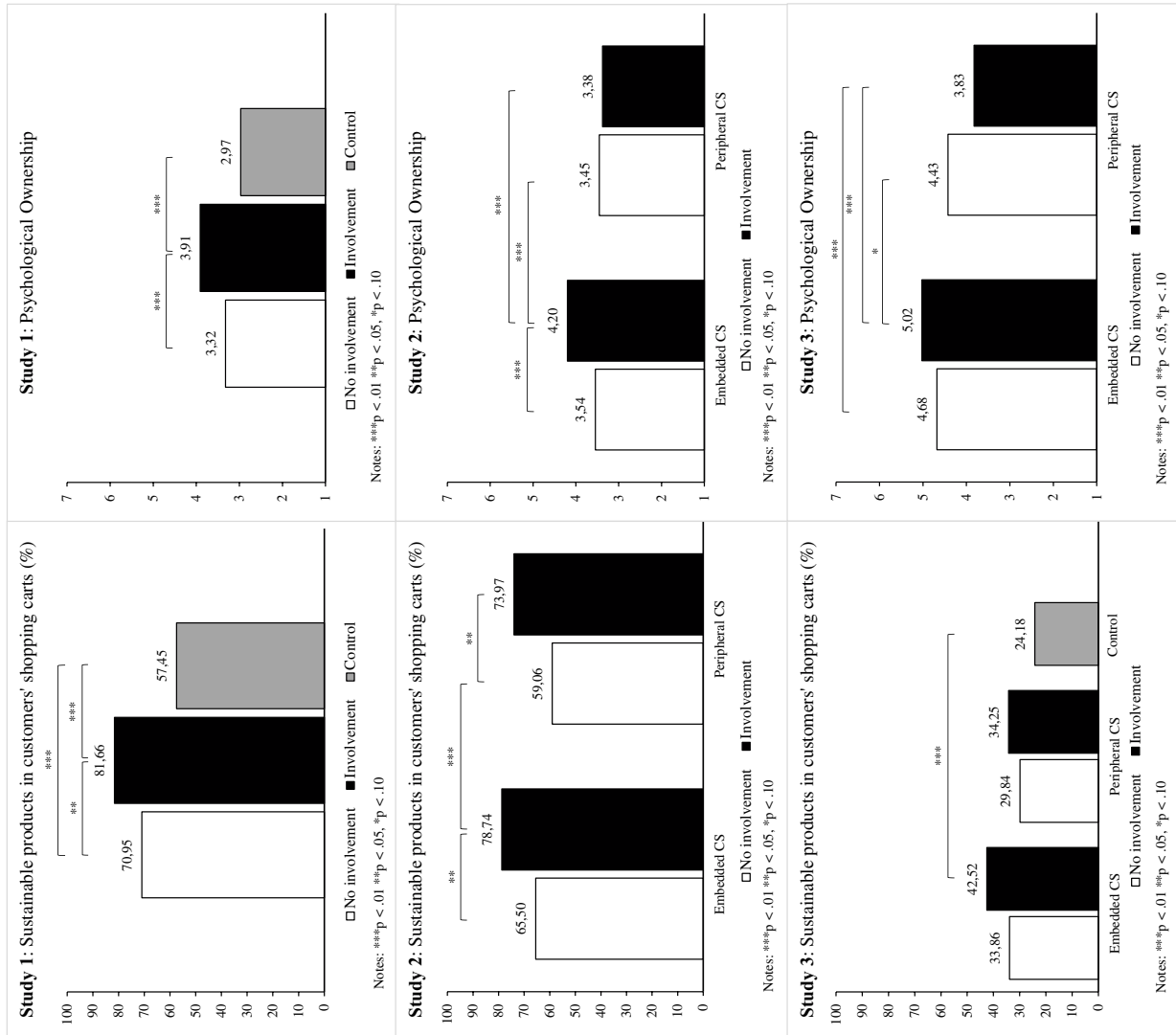


Fig. 3 Mean value comparison Studies 1 to 3

**Table 3** Results of (moderated) mediation analysis of Studies 1 to 3 (using SPSS process)

	Study 1	Study 2	Study 3
Main effects on sustainable consumption			
Customer involvement in CS	6.83 (4.55)	13.28 (3.43)***	7.28 (3.82)*
Psychological ownership	4.21 (1.69)**	2.55 (1.17)**	5.17 (1.71)***
Main effects on psychological ownership			
Customer involvement in CS	0.44 (0.20)**	-0.40 (0.21)*	-0.52 (0.24)**
CS embeddedness		0.01 (0.21)	0.08 (0.20)
Interaction effect on psychological ownership			
Customer involvement in CS × CS embeddedness		0.88 (0.29)***	0.73 (0.35)**
Controlled effects on sustainable consumption			
Sustainable consumption involvement	4.49 (1.74)**	3.41 (1.20)***	0.01 (1.39)
Customer-company identification			-1.27 (1.48)
Gender	-0.90 (4.48)	-9.08 (3.62)**	1.54 (17.66)
Age	-0.05 (0.18)	0.14 (0.13)	-0.28 (0.17)
Income	-2.76 (1.18)*	-0.88 (0.89)	
Education			-2.84 (2.12)
Controlled effects on psychological ownership			
Sustainable consumption involvement	0.28 (0.07)***	0.34 (0.29)***	0.26 (0.05)***
Customer-company identification			0.35 (0.05)***
Gender	-0.21 (0.20)	-0.02 (0.16)	0.59 (0.63)
Age	0.01 (0.01)	0.01 (0.01)**	-0.00 (0.01)
Income	0.08 (0.05)	0.08 (0.04)**	
Education			0.12 (0.08)
Conditional indirect effects of customer involvement in CS on sustainable consumption			
Type of CS = embedded	1.85 (1.21)	1.22 (0.78)	1.07 (0.94)
CI (95%)	0.09 to 4.73	0.05 to 3.02	-0.60 to 3.14
Type of CS = peripheral		-1.01 (0.65)	-2.69 (1.56)
CI (95%)		-2.39 to 0.16	-6.32 to -0.24
Index of moderated mediation		2.23 (1.16)	3.76 (1.97)
CI (95%)		0.23 to 4.72	0.64 to 8.12
N	190	398	264

Unstandardized coefficients displayed. Standard errors in parentheses

CI confidence interval. The conditional indirect effect of customer involvement in peripheral CS on sustainable consumption in Study 2 is statistically significant when applying a CI of 90%

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

involved ( $M = 4.18$ ,  $SD = 1.41$ ) compared to when they had not ( $M = 3.53$ ,  $SD = 1.60$ ,  $F(1, 394) = 9.19$ ,  $p = 0.003$ ). In the peripheral CS condition, in contrast, we observed no significant differences between the involvement ( $M = 3.35$ ,  $SD = 1.58$ ) and non-involvement groups ( $M = 3.52$ ,  $SD = 1.49$ ,  $F(1, 394) = 0.58$ ,  $p = 0.449$ ).

To empirically test the moderated mediation (i.e., H3), we used SPSS PROCESS Model 7 (5,000 bootstrap samples) with involvement (versus no involvement) as the independent variable, psychological ownership as the mediator, and embedded CS as a moderator (peripheral CS is the reference

category). The results in Table 3 support H3, as they show a significant moderation effect of CS embeddedness on the link between customer involvement and psychological ownership ( $\beta = 0.88$ ,  $p = 0.003$ ). There is also a significant moderated mediation (index of moderated mediation = 2.23, 95% CI = 0.23 to 4.72), indicating that customer involvement in CS significantly increases sustainable consumption via psychological ownership in the case of embedded CS ( $\beta = 1.22$ , 95% CI = 0.05 to 3.02). In contrast, the moderated indirect effect of peripheral CS is marginally significant and negative ( $\beta = -1.01$ , 90% CI = -2.12 to -0.02).

## Discussion

Overall, the results of Study 2 confirm our findings in Study 1 and add to them by indicating that the mediation effect of involvement on sustainable consumption behavior via psychological ownership feelings depends on customers' involvement in embedded or peripheral CS activities, as stated in H3. This observation aligns with our reasoning that embedded CS activities serve as a cue with higher predictive value, making them a more substantial reflection of a company's commitment to change than peripheral CS activities. Hence, inviting individuals to become involved in the company's embedded CS activities gives them a deeper sense of having a significant and longer-lasting impact through their participation. This makes embedded CS a more appealing ownership object with which individuals are more inclined to associate compared to peripheral CS, as it more effectively addresses customers' needs for self-identity, efficacy, and effectance. In contrast, involving customers in the development of peripheral CS activities makes the characteristics of this CS type more salient, leading, according to our results, to no statistically significant change in psychological ownership and a marginally negative indirect effect on sustainable consumption. This indicates that the mechanism by which customer involvement evokes ownership feelings, which in turn stimulates sustainable consumption, only occurs for embedded CS and even leads to a potential negative effect in the case of peripheral CS. These findings resonate with those of Wang et al. (2017). They observed that customers are likelier to engage in conservation behaviors in the hospitality context when they see the company as genuinely committed to the cause, and that "these perceptions will be influenced by visible cues of the firm's environmental efforts" (Wang et al., 2017, p. 481). A request to engage in conservation behavior resulted in higher reactance when the company demonstrated insufficient effort to do its part. Similarly, Yoon and colleagues show that customers' inferred sincerity of a company's peripheral CS engagement explains their evaluation of the company (Yoon et al., 2006).

Lastly, it is worth noting that, although not proposed, we did not observe a statistically significant direct effect of CS embeddedness on sustainable consumption. This implies that, although we found evidence that the type of CS moderates the degree to which customer involvement fosters psychological ownership and, consequently, indirectly impacts sustainable consumption, CS embeddedness itself has no significant direct effect on the proportion of sustainable products. We will discuss this observation later as a path for future research.

## Study 3

### Method and procedure

In Study 3, we conducted a field experiment with the fashion retailer in which we were allowed to manipulate the company's newsletter and observe customers' subsequent online shopping behavior. This experiment served to determine whether there was support for our theoretical framework (H1 to H3) under real conditions. In addition to Studies 1 and 2, we further investigated outcomes related to newsletter opening rates and customers' extra-role behaviors, approximated by their willingness to provide feedback to the retailer. Such customer feedback can be valuable in informing a company's strategy.

We adopted the 2 (involvement versus no involvement)  $\times$  2 (embedded versus peripheral CS) between-subjects design from Study 2 and added a control group that received no information about the retailer's CS activities and no opportunity to become involved. We slightly adapted the experimental procedure and the treatments in line with the preferences of the partner company. This time, we collected data at two different times. At  $t_0$ , customers on the retailer's mailing list received the manipulated newsletters. In each newsletter, we included buttons that customers could click, which opened additional windows. In all groups, we included a button directing customers to the online shop. In the involvement group, we included a second button that opened a feedback window.

After a discussion with the partner company, we reduced the length of the newsletter texts and involvement tasks to prevent customers from becoming cognitively exhausted. In the newsletter texts, we shortened the information about the individual CS activities. Further, since the company engages in a wide variety of embedded CS activities, we decided to create two different versions of the newsletter for the embeddedness stimulus, which included a selection of the activities used in the previous studies. This way, we could test the robustness of our manipulation by using two different lists of embedded activities. In the involvement group, we asked customers to evaluate the activities and share their ideas and suggestions in a text field, as in Studies 1 and 2. However, at the retailer's request, we did not ask them to prioritize the activities. Furthermore, to avoid creating unrealistic expectations, we gave them less specific information about how the retailer planned to use their feedback. Two days after the first newsletter mailing at  $t_0$ , we invited the customers to participate in an online survey ( $t_1$ ). At the start of the survey, we again presented the manipulated newsletter to remind the participants of the treatments. We invited the respondents in the involvement groups to give feedback if they had not

already done so at  $t_0$ . Subsequently, we asked all the participants to answer the survey.

We sent the manipulated newsletters in  $t_0$  and the survey invitation in  $t_1$  to 516,230 German customers on the retailer's mailing list. We received 6,089 survey responses and matched them with the collected purchase data, resulting in a sample of 342 customers ( $n_{\text{involvement \& embedded}} = 86$ ;  $n_{\text{embedded}} = 98$ ;  $n_{\text{involvement \& peripheral}} = 36$ ;  $n_{\text{peripheral}} = 44$ ;  $n_{\text{control}} = 78$ ) comprising 99.1% women with a mean age of 46. The demographic profiles of the participants in the matched sample (i.e., purchasers only) resemble those of the full sample (i.e., purchasers and non-purchasers). Figure 2 shows the dropout of participants in Study 3. The partner company considers them normal and we did not find any systematic biases in our data caused by the dropout of participants (Appendix F). As for the reduction from 15,033 (click on the shopping button) to 870 (available transaction data) in Figure 2, it is important to note that these are the respondents who clicked on the shopping button in the newsletter and directly purchased something in the online shop. This number does not include purchases outside the 2-day time frame and purchases made within the time frame but without clicking the shopping button (i.e., opening the shop in a separate window), as we could not track and combine those. Within this 2-day time frame, no further newsletter mailings were conducted to avoid interference with our treatment.

## Measurement

We tracked the shopping behavior of customers who clicked on the shopping button. As in our programmed online shop simulation, the retailer used tags for the sustainability features of its products. This allowed us to measure sustainable consumption as in Studies 1 and 2. Due to constraints on the questionnaire's length and the retailer's preferences, we slightly reduced and adjusted the items to assess customers' psychological ownership. As in Study 2, we accounted for SCI and demographic factors. This time, we further included a single item to control for customer-company identification (CCI; "I strongly identify with [company]") as a related construct (Korschun et al., 2014) and potential alternative mechanism for explaining sustainable consumption (Bhattacharya & Sen, 2003; Wiggins, 2018).

## Results

### Manipulation checks

We checked to see if all manipulations worked as expected by using the same items as in the prior studies to evaluate the degree of perceived involvement in the activities as well as embedded and peripheral CS. The results of an ANOVA revealed that participants' perceptions of the newsletters

varied significantly across the groups. Participants in the involvement groups reported a higher perception of involvement ( $M_{\text{involvement}} = 5.76$ ,  $SD = 1.14$ ) than those in the non-involvement groups ( $M_{\text{no involvement}} = 5.08$ ,  $SD = 1.39$ ,  $F(1, 5382) = 379.21$ ,  $p < 0.001$ ). Likewise, respondents in the embeddedness groups perceived the activities presented in the newsletter as significantly more related to the retailer's core business than respondents in the peripheral groups ( $M_{\text{embedded}} = 5.22$ ,  $SD = 1.08$ ,  $M_{\text{peripheral}} = 4.74$ ,  $SD = 1.30$ ,  $F(1, 5382) = 197.67$ ,  $p < 0.001$ ). Conversely, respondents in the peripheral CS groups reported higher values on the items measuring perceived peripheral CS than respondents from the embedded CS groups ( $M_{\text{embedded}} = 4.90$ ,  $SD = 1.28$ ,  $M_{\text{peripheral}} = 5.28$ ,  $SD = 1.12$ ,  $F(1, 5382) = 110.46$ ,  $p < 0.001$ ). We also checked for cross-effects of the treatments, which did not show any unintended effects of concern.

As a subsequent step, we ran an ANOVA. This confirmed that the two versions of the embedded CS newsletter were rated similarly on the embedded CS manipulation check scale. The two newsletter versions did not differ in terms of general likeability of the newsletter (i.e., "I liked the newsletter shown at the beginning") and the presented activities (all  $ps > 0.10$ ). No differences exist in customer perceptions between the two versions of the embedded CS treatment, so we collapsed them into one group for further analyses (i.e., we created a dummy with the value 1 for both versions of the embedded manipulation and 0 for the peripheral stimulus).

### Hypothesis testing

First, we conducted an ANOVA to replicate H1 with involvement as the predictor of the percentages of sustainable products in the customers' shopping carts. The results again indicated that customers tended to replace conventional with sustainable products if they had been previously involved in the retailer's CS activities ( $M_{\text{involvement}} = 40.08$ ,  $SD = 31.70$ ,  $M_{\text{no involvement}} = 32.61$ ,  $SD = 29.93$ ,  $F(1, 262) = 3.87$ ,  $p = 0.050$ ). As in Study 2, we then conducted a pair of two-way ANOVAs in which customer involvement and CS embeddedness were the independent variables, and sustainable consumption and psychological ownership were the dependent variables.

Similar Study 2, the first ANOVA revealed no significant main effects of involvement ( $F(1, 260) = 2.50$ ,  $p = 0.120$ ), or CS embeddedness ( $F(1, 260) = 2.21$ ,  $p = 0.138$ ), and a non-significant interaction effect of involvement and CS embeddedness on sustainable consumption ( $F(1, 260) = 0.27$ ,  $p = 0.607$ ). The results of the second ANOVA indicate, as in Study 2, a non-significant main effect of involvement ( $F(1, 260) = 0.55$ ,  $p = 0.459$ ), a significant main effect of CS embeddedness ( $F(1, 260) = 17.49$ ,  $p < 0.001$ ), and a significant interaction effect of involvement and CS embeddedness on psychological

ownership ( $F(1, 260) = 7.36, p = 0.007$ ). Simple effects further showed that psychological ownership indicated by customers in the embedded CS group was marginally significantly higher when they were involved ( $M = 5.02, SD = 1.40$ ) than when they were not ( $M = 4.68; SD = 1.27, F(1, 260) = 3.22, p = 0.074$ ). In the peripheral CS condition, in contrast, we observed a significant negative difference between the involvement ( $M = 3.83, SD = 1.09$ ) and non-involvement condition ( $M = 4.43, SD = 1.27, F(1, 260) = 4.27, p = 0.040$ ).

Next, we tested the moderated mediation (H3) empirically using SPSS PROCESS Model 7 (5,000 bootstrap samples) with involvement (versus no involvement) as an independent variable, psychological ownership as a mediator, sustainable consumption behavior as a dependent variable, and embedded (versus peripheral) sustainability as a moderator. We found evidence in support of the theorized moderated mediation. As shown in Table 3, the embeddedness of the CS activities moderated the effect of involvement on perceived psychological ownership ( $\beta = 0.73, p = 0.013$ ) and, through this, affected the proportion of sustainable products in the shopping cart (index of moderated mediation = 3.76, 95% CI = 0.64 to 8.12). The results of Studies 2 and 3 differ slightly concerning the moderated mediation effect. In Study 2, involvement had a positive and significant effect on sustainable consumption behavior via psychological ownership for embedded CS. In Study 3, the positive effect of involvement in embedded CS is positive but insignificant ( $\beta = 1.07, 95\% CI = -0.60$  to  $3.14$ ). In terms of peripheral CS, Study 3 indicates that the effect of involvement in peripheral CS on sustainable consumption behavior via psychological ownership turns out to be significantly negative ( $\beta = -2.69, 95\% CI = -6.32$  to  $-0.24$ ), consistent with Study 2, although the effect here is only marginally significant. Thus, the results of Studies 2 and 3 represent two sides of the same coin. While Study 2 shows the positive indirect effect of involving customers in embedded CS, Study 3 reveals the negative indirect effect of involving customers in peripheral CS. In both studies, CS embeddedness moderates the mediation effect of involvement on sustainable consumption via ownership, as proposed in H3.

As a robustness check, we replicated the moderation effect of CS embeddedness on the customer involvement-psychological ownership relationship using our full sample comprising all 6,089 survey responses, including those with and without transaction data. Consistent with the results in the smaller sample used in our main analyses above (transaction data matched with survey data), we found that CS embeddedness has a significant and positive moderation effect ( $\beta = 0.31, p < 0.001$ ). Furthermore, we ran various models to test potential alternative mechanisms that could explain our results, such as CCI and trust. The results further

strengthen our results by showing that these constructs are no alternative mechanisms (Web Appendix G).

## Supplemental analyses

In addition to customers' purchasing behavior, we collected data concerning their willingness to give feedback in the involvement groups as a type of extra-role behavior (Karaosmanoglu et al., 2016). Customers in the involvement groups could share ideas and suggestions after the initial newsletter mailing at  $t_0$  and the beginning of the survey at  $t_1$  if they submitted no feedback at  $t_0$ . We created two variables intended to approximate the extent to which the customers became engaged. The first extra-role behavior measure ranged from 1 to 3, coded 1 if customers in the involvement group did not provide feedback, 2 if they participated in one of the two involvement tasks (either evaluating the activities using the slider or writing feedback in the open text field), and 3 if they performed both tasks. Furthermore, we created a second variable capturing the length of the feedback text by the number of characters. When analyzing the responses, we only included those in our analysis that were related to the retailer's CS activities and excluded unrelated feedback, such as that regarding products or the newsletter's design. As we only have these extra-role outcomes in the involvement groups, we only included participants from these groups in the analysis.

According to our theorizing, we would expect that CS embeddedness increases the two extra-role behavior outcomes and that this effect is mediated by psychological ownership. Therefore, we conducted a multinomial logit regression to examine the mediation effect for the first extra-role behavior variable (tasks performed) using Mplus. The results confirm our assumption, indicating that CS embeddedness increases the likelihood that customers develop feelings of psychological ownership, thereby enhancing the extent to which they share feedback. Appendix G Table 8 displays the model results. For the second extra-role behavior outcome, i.e., the text length, we did not observe a significant mediation effect. Yet, an ANOVA with CS embeddedness as the independent variable and text length as the dependent variable reveals a direct effect—customers were more willing to share feedback when the company involved them in embedded CS activities compared to peripheral ones. ( $M_{\text{embedded}} = 100.86, SD = 121.89, M_{\text{peripheral}} = 70.08, SD = 84.86, F(1, 461) = 5.52, p = 0.019$ ).

To further substantiate the link between CS embeddedness and extra-role behavior, we conducted various additional analyses investigating click and feedback rates. These analyses show that the newsletters in the embedded CS condition received higher e-mail openings and involvement button click rates compared to peripheral CS (see Web Appendix F). We conclude that these results strengthen our conceptual framework, particularly the



argumentation that embedded CS yields more opportunities for companies to create value through customers' extra-role behavior than peripheral CS does.

## Discussion

Overall, the field experiment provides further support for the hypotheses stated in our conceptual framework. Most importantly, our findings indicate that customer involvement in embedded CS leads to higher psychological ownership than involvement in peripheral CS does. This affects sustainable consumption behavior and also incentivizes extra-role behavior in the form of additional feedback that can be exploited to develop CS activities further.

## General discussion

### Summary of findings

The results of our three studies widely support our theorizing. Particularly, they show that customer involvement in CS leads to sustainable consumption behavior and that psychological ownership mediates this link. We also found that the embeddedness of the CS activity in a company's core business moderates the link between customer involvement in CS activities and psychological ownership. Additionally, embedded CS stimulates customers' extra-role behavior more strongly than peripheral CS. Consequently, we deem embedded CS more advantageous for companies overall than peripheral CS. These findings extend the existing marketing research in several meaningful directions and yield valuable implications for companies to expand the marketing toolbox and activate consumers to engage with CS-related content and participate in sustainable consumption.

### Implications for research

This study integrates the literature streams of customer involvement, psychological ownership, and sustainable consumer behavior to derive and test a conceptual framework that yields several implications for marketing research at the intersections of these streams.

First, we offer novel insights into research about incentivizing sustainable consumer behavior to mitigate the intention-behavior gap in sustainable consumption. We do this by exploring the role of customer involvement as a two-way communication in a company's CS-related organizational development. This research focus goes beyond prior marketing studies examining well-established marketing interventions to change consumer behavior in the sustainability context. Such prior work has focused on subjects like appeal-based one-way communication (e.g., White &

Simpson, 2013) and choice of cause in cause-related marketing, where customers choose a specific philanthropic cause tied to a purchase (e.g., Robinson et al., 2012). Our findings demonstrate that a company's involvement of customers can shift consumer behavior toward replacing conventional products with sustainable ones. Specifically, our work builds on research focusing on understanding the relationship between customer involvement and sustainable consumption behavior to address the societal challenge posed by unsustainable consumption patterns.

Moreover, we illustrate how involving customers in an organization's development encourages them to contribute ideas and thoughts, shaping the company's future CS approach beyond economic transactions. This shows how marketing can contribute to organizational strategy development based on customer insights (i.e., consumer-based strategy; Hamilton, 2016). We thereby enrich the research landscape of customer engagement marketing, traditionally centered on investigating marketing functions and customer-related outcomes in contexts unrelated to sustainability (for an overview, see Harmeling et al., 2017).

Second, we argue and show that psychological ownership of a company's CS engagement is a crucial construct in elucidating the relationship between customer involvement in organizational development and sustainable consumer behavior. Put another way, our study illustrates that a lack of customers' psychological ownership can be an additional, yet less recognized, barrier to explaining the intention-behavior gap in sustainable consumption. In this regard, a lack of psychological ownership can take its place among already well-documented barriers in prior research, like a lack of product availability, insufficient information, or price premium (e.g., Gleim et al., 2013). Prior studies intertwining customer involvement and psychological ownership have predominantly taken place in non-sustainability contexts, focusing on product selection, customization, and assembly (e.g., Fuchs et al., 2010). Conversely, studies investigating customer involvement in sustainability have thus far often neglected the psychological ownership concept (e.g., Edinger-Schons et al., 2020). In fact, existing research is generally limited to a few studies exploring how ownership feelings toward the natural environment lead to pro-environmental behavior (e.g., Peck et al., 2021).

Consequently, we contribute to the understanding of how a sense of psychological ownership of a company's engagement in a strategically relevant topic such as CS can be instilled in customers. Additionally, we explore how companies can leverage these ownership feelings to promote sustainable consumption patterns and elicit extra-role behaviors. Through this, our findings enrich the marketing toolbox to address the intention-behavior gap in sustainable consumption, thereby contributing to the shift in general marketing research toward exploring and better understanding the spectrum of ways in

which marketing can contribute to sustainable development (e.g., de Ruyter et al., 2022; Mende & Scott, 2021).

Third, we use the concept of embedded and peripheral CS to argue and demonstrate that the underlying mechanism between involvement and psychological ownership is context-specific. Specifically, our findings suggest that psychological ownership feelings toward a company's CS engagement are stimulated if the activity is embedded within the company's core business. This indicates that embedded CS activities yield a higher predictive value than peripheral CS activities, allowing for a more precise assessment of the social relevance and individual impact on the environment stemming from involvement in these activities. Thus, we suggest that the type of activity in which a company invites the customer to participate facilitates the development of psychological ownership.

This notion also contributes to research on embedded CS and extra-role behavior. Aguinis and Glavas (2013) propose that involving employees in embedded CS can result in extra-role behavior, such as organizational citizenship. Although they admit the possibility that this mechanism similarly applies to customers, one could argue that this transfer cannot be easily made. The role of customers differs substantially from the role of employees, who are more closely connected to the company. Our results indicate that the embeddedness of CS activities indeed plays a role in extra-role behavior by enhancing customer feedback.

Finally, in line with recent studies in marketing research (Hankammer et al., 2021; Howe et al., 2022), we applied an online shop simulation to observe customers' consumption behavior in our lab experiments. Thereby, we respond to recent calls in marketing research to create more realism in experimental designs, moving beyond measuring traditional scale-based intentions to increase the veracity and believability of research (Morales et al., 2017; van Heerde et al., 2021). We contribute to research by demonstrating that an online shop simulation can be considered an externally valid method to measure consumer behavior, since we were able to replicate our lab results in our field experiment that measured real consumer behavior. Our study further exemplifies how the additional outcomes observed in an online shop simulation (e.g., the proportion of sustainable products) can contribute to theorizing in research and deriving meaningful managerial implications (Hamilton, 2016; Hulland & Houston, 2021).

## Practical implications

Beyond theoretical implications, our research provides several important practical ones. Companies increasingly realize it is no longer enough to offer sustainable products and services to foster sustainable consumption. They need additional measures to steer customers toward buying these products. Our study proposes that involving customers in CS activities in a

company's core business is a promising approach to narrowing the intention-behavior gap in sustainable consumption. Engaging with customers in two-way interaction yields not only the potential to encourage more sustainable behavior. It is also a way to learn about customers' expectations and generate new ideas to improve and innovate on the product and organizational level (Cui & Wu, 2016; Pansari & Kumar, 2017). Moreover, we identified psychological ownership among customers as a mechanism that connects customer involvement and sustainable consumption. Knowing this can inform decision-makers to create lively customer interactions by integrating the routes to psychological ownership, such as control and self-investment. Potential interaction and co-creation formats include newsletters, social media, workshops, and innovation platforms.

We consider a company's decision about the extent to which it provides customers with control and self-investment opportunities as highly strategic. This is particularly true when involving customers in core business-related issues, because this determines the customers' future expectations that the company will act according to his or her feedback (Korschun & Du, 2013). Relatedly, embedded CS can take substantial effort, cost, and trade-offs arising from conflicting stakeholder interests, all of which need diligent management by the company (Hahn et al., 2010; Hengst et al., 2020). Consequently, a company's willingness, along with having the structures and resources needed to integrate the customers' thoughts, wishes, and ideas into the company's business is necessary to benefit from customer involvement. These things are also essential in avoiding potential backlash stemming from unfulfilled customer expectations (Harmeling et al., 2017; Heidenreich et al., 2015; Korschun & Du, 2013).

Besides a company's readiness to engage customers in CS and establish internal structures, the company needs to critically reflect on the scope and frequency of customer involvement. A broad involvement of customers signals a company's commitment to CS to a larger customer base. However, a more exclusive involvement of a smaller group could potentially evoke stronger identification and ownership feelings due to the customer being made to feel special (Brewer, 1991; Brewer et al., 1993). Additionally, as we will discuss in the limitation section, high involvement effort due to frequent engagement with customers may lead to potential backlash (Howie et al., 2018). Apparently, consumers cannot engage frequently with dozens of brands. However, given the rapid development of digital tools and platforms, consumer interactions are increasingly convenient and effective for both companies and consumers (Jurietti et al., 2017; Korschun & Du, 2013). Even if a company only attracts a small proportion of its customers to become involved, their behavioral change could inspire others who notice it to adapt sustainable consumption patterns, and thus amplify the impact of the involvement measure (Phipps et al., 2013). Similarly, even if a company only conducts customer involvement once or occasionally, behavioral change induced by such an intervention can spill

over into future behavior with fashion consumption, as well as other consumption domains, as prior researchers have suggested (Thøgersen, 1999; Thøgersen & Ölander, 2003).

The aspects discussed above can further contextualize how to apply our findings. We conclude that to fully realize the potential of customer involvement in promoting sustainable consumption, companies must critically assess and tailor the scope (i.e., exclusiveness), design (i.e., degree of control and self-investment), and frequency of customer involvement to align with the company's unique capabilities and objectives. In that way, customer involvement, as a two-way interaction format, can enrich a company's marketing toolbox by complementing one-way interaction instruments, collectively fostering sustainable consumption.

### Limitations and future research

This study has several limitations that yield potential for future research. First, we do not claim that psychological ownership is the only suitable mechanism to explain how customer involvement in CS translates into sustainable consumption behavior. We propose that it is one important mechanism among others (Harmeling et al., 2017). We encourage researchers to explore further potential mechanisms, such as customers' perceived personal roles (Robinson et al., 2012). Understanding such mechanisms can contribute to a better understanding of leveraging customer involvement in CS to change behavior in consumption.

Relatedly, some of the potential alternative mechanisms between CS communication and sustainable consumption behavior might be triggered regardless of the type of CS (i.e., its embeddedness). In our Studies 2 and 3, we observed a higher but statistically non-significant proportion of sustainable products in the carts of customers who received the embedded (vs. peripheral) CS treatment. Past literature presents ambivalent arguments and evidence related to this observation. On the one hand, embedded CS could signal a company's commitment to sustainable development more strongly, encouraging customers to behave sustainably too and averting potential greenwashing concerns (Leonidou & Skarmeas, 2017; Vredenburg et al., 2020) that inhibit sustainable consumption (Szabo & Webster, 2021; Zhang et al., 2018). Conversely, prior research suggests that communicating about and involving customers in CS, in general, positively influences their attitudes and behaviors toward a company. This positive effect includes customers' intentions to purchase sustainable products (e.g., Sen et al., 2016) since customers experience benefits such as "warm glow" feelings when buying from a company engaged in good deeds (Andrews et al., 2014; Habel et al., 2016; Koschate-Fischer et al., 2012). This ambivalence leaves room for future research on sustainable consumption to account for potentially contradictory mechanisms triggered by different CS types.

Second, our studies are cross-sectional. Using longitudinal data would allow observing the development of customers' psychological ownership and subsequent changes in consumption patterns. This would be promising for two reasons. One reason is that, according to existing literature, psychological ownership evolves through repeated interaction with the target object by strengthening the experiences linked to ownership feelings (i.e., control and self-investment; Peck & Luangrath, 2018). Further studies might deal with potential backlash from repeated involvement and the consequences for sustainable consumption. Backlash could be due to, for example, customers' perceptions of high involvement effort (Howie et al., 2018), territorial behavior resulting from psychological ownership feelings (Kirk et al., 2018), and unmet expectations (Korschun & Du, 2013). We encourage researchers to explore how ownership develops and affects sustainable consumption behavior over time while also considering potential side effects. The other reason is that longitudinal data would enable us to observe the extent to which behavioral change induced by only once or occasional involvement of customers in CS can influence their future behavior regarding the consumption of fashion and also in other consumption domains (Thøgersen, 1999; Thøgersen & Ölander, 2003). We encourage future research to explore such potential spillover effects.

Third, Kamleitner and Mitchell (2018) suggest another research direction by describing different forms of control (e.g., spatial, configuration-related, temporal, and transformational) and self-investment (e.g., through creation, repair, maintenance, and preference recall). The application of these forms is context-specific. These forms might vary in their potential to evoke psychological ownership among customers. Therefore, we consider the differentiation between these forms important in understanding how to most effectively increase sustainable consumption through psychological ownership.

Fourth, the company's characteristics, such as its size and legal ownership structure, could also intervene in the process of psychological ownership development. These company characteristics could lead to different perceptions of the characteristics of the target (i.e., the CS activity). Such perceptions could affect the extent to which the object is considered controllable and the investment in it meaningful to the self. For example, Bernhard and O'Driscoll (2011) show how psychological ownership leads to organizational citizenship behavior among employees in small, family-owned organizations. They argue that the physical and psychological barriers between the organization's legal owners and the employees are less solid. We conducted our study in cooperation with a family-owned retailer and communicated this characteristic prominently in our treatments. Researchers might build on this by investigating whether the proposed framework in this paper also applies to companies with other ownership structures.

Finally, researchers could apply online shop simulations more frequently in future studies (for an open-source shop, see Howe et al., 2022) to expand marketing research in at least two ways. One is to reveal the types of sustainable consumption patterns triggered by marketing interventions in terms of the type (conventional versus sustainable) and amount of products bought (buying less versus more). This would clarify the potential economic impact

of social marketing interventions. Beyond that, researchers could use online shop simulations as a more realistic alternative, which is likely to suffer less from contextual and measurement biases than traditional scale-based measures (Hulland & Houston, 2021; Morales et al., 2017), to study phenomena like the intention-behavior gap in sustainable consumption.

## Appendix A

1.



Embedded CS

2.



Peripheral CS

3.



Control Group

Note: Newsletters 1. and 3. were applied in Study 1. Newsletters 1. to 3. were applied in Study 2.

**Fig. 4** Manipulated company newsletter in Studies 1 and 2 (treatment: CS embeddedness)





Note: The newsletter texts shown have been translated from German to English.

**Fig. 5** Manipulated company newsletter in Study 3 (treatment: CS embeddedness)



## Appendix B

**WE WOULD LOVE TO INVOLVE YOU**

We would like you to be involved in planning and developing our future sustainability strategy and activities. Therefore, we invite you to participate in the following tasks.

First, we would like to know how do you like our sustainability activities mentioned before by using the slider:

I don't like the activities 
○
○
 I like the activities very much

As a participant of this study, you have a decisive vote! The future sustainability activities of [company name] will be prioritized and developed based on the results of our study. Therefore, we invite you to decide which of the activities we should increase our engagement with by ranking them below.

I vote for...

(Please arrange the items in descending order of your priority by using the drag and drop function)

The use of more sustainable production materials

→

What do you expect from us when developing our sustainability activities further? Please share your own ideas and suggestions with us. We will incorporate them in our next steps.

Lastly, we would like to involve you in our brainstorming on communicating our sustainability products in our stores and the online shop. Which 3 adjectives should we use to present our sustainability products to customers? Please explain your answer briefly.

**WE WOULD LOVE TO INVOLVE YOU**

Your opinion is important to us for the further development of our activities. Therefore, we invite you to share your feedback and ideas with us by clicking on the bottom below.

[Become involved](#)

**Your opinion matters!**

We would like to know how do you like our sustainability activities mentioned before by using the slider:

I don't like the activities 
○
○
 I like the activities very much

What do you expect from us when developing our sustainability activities further? Please share your own ideas and suggestions with us.

[send](#)

Involvement in CS (Studies 1 and 2)

Involvement in CS (Study 3)

**Fig. 6** Manipulated company newsletter in Studies 1 to 3 (treatment: involvement in CS)

## Appendix C

**Table 4** Sample distributions by gender, age, income, and education

	Study 1	Study 2	Study 3
Number of participants	266	398	342
Gender			
Female	68.4	67.6	99.1
Male	31.6	32.4	0.9
Age			
18–34 years	54.5	46.0	15.8
35–54 years	36.1	41.5	65.5
More than 55 years	9.4	12.6	18.7
Income			
Less than 1,000 £/€	28.9	30.4	/
1,001–2,500 £/€	57.1	51.5	
2,501–3,500 £/€	9.8	12.6	
More than 3,501 £/€	4.2	5.5	
Education Level			
Elementary school	1.5	0.8	7.3
High school	46.6	42.7	69.0
Academic degree	51.9	56.5	23.7
Nationality			
German	0.0	0.0	97.6
British	99.2	99.7	0.0
Others	0.8	0.3	2.4

All numbers are percentages

## Appendix D

**Table 5** Measures and scale evaluation of variables used in regression analysis

Construct and items	FL	AVE	CR	CA
<b>STUDY 1</b>				
Sustainable consumption		/	/	/
Proportion of sustainable products in customers' shopping carts, ranging from 0 to 100 percentage points (online shop simulation)	/			
Psychological ownership		0.71	0.93	0.93
(1) I feel a sense of personal ownership of [company]'s sustainability activities	0.81			
(2) The success of [company]'s sustainability activities is also MY responsibility	0.83			
(3) Sustainability at [company] is MY topic	0.85			
(4) I feel connected to the sustainability activities of [company]	0.84			
(5) I feel a strong sense of closeness with the sustainability activities of [company]	0.90			
Sustainable consumption involvement		/	/	/
(1) I take initiatives to act in environmentally and socially friendly ways in my daily life	/			
<b>STUDY 2</b>				
Sustainable consumption		/	/	/
Proportion of sustainable products in customers' shopping carts, ranging from 0 to 100 percentage points (online shop simulation)	/			
Psychological ownership		0.73	0.93	0.93
(1) I feel a sense of personal ownership of [company]'s sustainability activities	0.81			
(2) The success of [company]'s sustainability activities is also MY responsibility	0.85			
(3) Sustainability at [company] is MY topic	0.87			
(4) I feel connected to the sustainability activities of [company]	0.87			
(5) I feel a strong sense of closeness with the sustainability activities of [company]	0.88			
Sustainable consumption involvement		/	/	/
(1) I take initiatives to act in environmentally and socially friendly ways in my daily life	/			
<b>STUDY 3</b>				
Sustainable consumption		/	/	/
Proportion of sustainable products in customers' shopping carts, ranging from 0 to 100 percentage points (real online shop)	/			
Psychological ownership		0.78	0.91	0.92
(1) I feel a sense of personal ownership of [company]'s sustainability activities	0.87			
(2) The success of [company]'s sustainability activities is also MY responsibility	0.92			
(3) I would like to support [company] in bringing the sustainability activities to life	0.80			
(4) I would be interested in participating in the further development of [company]'s sustainability activities	0.83			
Sustainable consumption involvement		/	/	/
(1) I take initiatives to act in environmentally and socially friendly ways in my daily life	/			
Customer-company identification ( <i>applied in Study 3</i> )		/	/	/
(1) I identify strongly with [company]	/			

Sources: psychological ownership is based on Brown et al. (2014), Fuchs et al. (2010), and Kirk et al. (2018). To measure psychological ownership in Study 3, we excluded one item and slightly adjusted items (3) and (4) in line with the partner company's preferences. Sustainable consumption involvement is based on Edinger-Schons et al. (2018). Customer-company identification is based on Korschun et al. (2014)

FL factor loadings. AVE average variance extracted. CR composite reliability. CA Cronbach's alpha

## Appendix E

**Table 6** Measures and scale evaluation of manipulation checks

Construct and items	FL	AVE	CR	CA
Customer involvement ( <i>applied in Studies 1–3</i> ) [Company]...		0.82	0.93	0.93
offered me the opportunity to become involved in planning and developing its future sustainability activities	0.93			
asked for my ideas and suggestions about further developing their sustainability activities	0.93			
told me that my feedback will inform the prioritization and development of its future sustainability activities	0.86			
Embedded CS ( <i>applied in Studies 2 &amp; 3</i> ) <i>The activities of [company] described in the newsletter...</i>		0.88	0.96	0.96
are closely linked to its core business	0.97			
are part of the production and sale of its clothing	0.96			
describe how it operates in its daily core business	0.89			
Peripheral CS ( <i>applied in Studies 2 &amp; 3</i> ) <i>The activities of [company] described in the newsletter...</i>		0.88	0.96	0.96
are of a charitable nature, whereby [company] donates a part of its profits to a charitable cause	0.95			
are made possible by donations from [company]	0.91			
involve [company] giving something back to society through its charitable activities	0.97			

The wording of some manipulation check items in Study 3 underwent minor adjustments for translation purposes and to align with the preferences of the partner company, while preserving the original meaning of the items

FL factor loadings. AVE average variance extracted. CR composite reliability. CA Cronbach's alpha

## Appendix F

Hereafter, we assess systematic biases (nonresponse and common method) in Studies 1 to 3.

### Nonresponse bias

#### Early vs. late response comparison

To control for nonresponse bias in Studies 1 to 3, we started by comparing the demographics (gender, age, income, and education) between early and late respondents by splitting the respective samples equally depending on participants' response dates (Armstrong & Overton, 1977; Cui & Wu, 2016). The results show no significant differences between early and late joiners except in terms of the average age in Studies 2 and 3 (Study 2:  $M_{\text{early}} = 35.67$ ,  $M_{\text{late}} = 40.41$ ; Study 3:  $M_{\text{early}} = 46.24$ ,  $M_{\text{late}} = 45.63$ ) and the proportion of men in Studies 1 and 2 (Study 1:  $M_{\text{early}} = 37.6\%$ ,  $M_{\text{late}} = 25.6\%$ ; Study 2:  $M_{\text{early}} = 25.1\%$ ,  $M_{\text{late}} = 39.7\%$ ). However, given that the age differences are somewhat small, age bias appears unlikely. To control for gender bias, we conducted various moderation analyses using SPSS PROCESS Model 1 (5,000 bootstrap samples) with the treatments (involvement in CS

and CS embeddedness) as independent variables, psychological ownership and sustainable consumption as dependent variables, and gender as a moderating factor. We did not find any moderating effect of gender that would indicate a bias in our results.

#### Purchasers vs. non-purchasers comparison

To rule out the possibility of any systematic biases between those for which transaction data is available and those for which data is not (see Fig. 2 for an overview of the samples and data collection procedure), we compare the demographics (age, gender, education, and income) and the degree of sustainable consumption involvement among these two groups across all studies. In Studies 1 and 2, missing transaction data resulted from human error and technical glitches, as explained on page 18. In Study 1, we found marginally significant differences ( $p < 0.1$ ) in terms of gender ( $M_{\text{no purchase}} = 36.0\%$ ,  $M_{\text{purchase}} = 31.2\%$ ) and age ( $M_{\text{no purchase}} = 35.19$ ,  $M_{\text{purchase}} = 38.04$ ). In Study 2, we observed marginally significant differences regarding the income class (scale: 1 = < 1,000 £, 2 = 1,001–2,500 £, 3 = 2,501–3,500 £, 4 = > 3,501 £) of participants ( $M_{\text{no purchase}} = 2.08$ ,  $M_{\text{purchase}} = 1.93$ ). Since the mean value

**Table 7** Comparison of the entire customer base with the finale sample in Study 3

	Active customer base <sup>1</sup> ( <i>N</i> = 1,569,326)	Finale sample <sup>2</sup> ( <i>N</i> = 264)
Age	45.70	45.90
Female	97.1%	98.9%
AVG number of orders <sup>3</sup>	2.16	9.55
AVG order value <sup>3</sup>	55.19 Euro	49.60 Euro
AVG % of the order value attributed to sustainable products <sup>3,4</sup>	2.4%	2.2%

<sup>1</sup>The data includes all newsletter subscribers who made at least one purchase in 2021, irrespective of the distribution channels (in-store and online)

<sup>2</sup>The data from the field experiment was collected in December 2021

<sup>3</sup>The values represent the mean for 2021

<sup>4</sup>The mean values pertain to a specific sustainable fashion collection from the partner company, serving as a proxy for the entire sustainable fashion product assortment due to the unavailability of information on the latter

differences between the groups in terms of these variables are relatively small and we controlled for them in our models, we assume that there are no biases caused by the dropout of participants that could affect our results' validity.

We also examined potential systematic differences regarding gender, age, education, and sustainable consumption involvement between purchasers and non-purchasers in Study 3. The data collection in the field study was more complex as it comprised several steps with high (but normal) dropout rates (see Fig. 2). We conducted ANOVAs to

compare purchasers and non-purchasers using the sample of 6,089 survey participants (i.e., responses with and without transaction data). The results revealed no significant differences, save for a very marginal gender difference, deemed negligible. We also obtained aggregated data from the partner company concerning various characteristics of the entire active customer base (*N* = 1,569,326) and compared it with our final sample of 264 participants. This final sample includes those participants involved in the main analysis, incorporating the merged survey data at *t* = 1 and transaction data at *t* = 0. The control group participants were excluded from the main analysis. The table below illustrates a high degree of similarity between the samples in terms of demographics and shopping behavior, indicating no systematic bias due to participant dropout that could impact the validity of our results (Table 7).

### Common method bias

Common method bias is very likely not a major concern for all three studies, since we examine a moderated (mediation) effect, which respondents are less likely to be able to anticipate (Wilden & Gudergan, 2015). In addition, the variables “customer involvement in CS” and “CS embeddedness” were manipulated, and sustainable consumption behavior was observed in the (simulated) online shop. Psychological ownership was the only relevant variable in our framework that we measured on a Likert scale via surveys. Furthermore, customers in Study 3 were also unaware of participating in a study when shopping online, making common method bias even less likely.

## Appendix G

**Table 8** Multinomial logit regression (supplemental analysis Study 3) using Mplus

DV (number of feedback options used):	One feedback option vs no feedback option	Both feedback options vs no feedback option	Both feedback options vs one feedback option
Main effects on degree of feedback			
Involvement in embedded (vs. peripheral) CS	0.01 (0.10) / 1.01	0.17 (0.22) / 1.19	0.16 (0.22) / 1.18
Psychological ownership	0.20 (0.04)*** / 1.22	0.48 (0.10)*** / 1.62	0.28 (0.10)*** / 1.32
Main effect on psychological ownership			
Involvement in embedded (vs. peripheral) CS	0.64 (0.06)***		
Indirect effects on degree of feedback			
CS embeddedness	0.15 (0.03)	0.31 (0.07)	0.18 (0.06)
CI (95%)	0.08 to 0.18	0.18 to 0.45	0.06 to 0.30
<i>N</i>	2.488		

Unstandardized coefficients and odds ratio displayed. Standard errors in parentheses. *CI* confidence interval. The model includes the control variables gender, age, and education

\*\*\**p* < 0.01



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## Declarations

**Conflict of interest** The authors have no conflict of interest to declare that are relevant to this article.

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