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When your shop says #lessismore. A field and laboratory intervention on online communication for clothing sufficiency.

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Abstract:	<p>To keep resource consumption within planetary boundaries, current consumption levels need to drop. We investigate whether online communication interventions foster sufficiency, as multiplier potentials are ascribed to online interventions especially on social media. In two experiments in the clothing domain, reduced purchases, sharing and prolonging the lifetime of clothes were promoted. In study 1, an online field intervention was conducted. Analyses shows that all participants, both in the experimental and the control groups, reduced their clothing consumption. Hence the intervention itself did not change clothing consumption levels. Study 2 was a laboratory experiment with sufficiency-promoting social media communication. Sufficiency-promoting communication led to more sufficiency behaviour compared to neutral and consumption-promoting communication. This effect was mediated by a lower aspiration level. Also, the attitude towards the sender and the communication was more positive in the sufficiency-promoting communication than under the other two conditions. Peer endorsement of the communication by other social media users did not strengthen this effect. For social media interventions to change consumption patterns, endorsement may have to be expressed by peers known personally. Although the field intervention was not effective, social media posts can increase sufficiency behaviour in the short-term. To test long-term effects, further research is needed.</p>
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Dear Prof van der Linden,

We are enclosing our manuscript „When your shop says #lessismore. A field and laboratory intervention on online communication for clothing sufficiency“ for consideration for publication as an original research article in the Journal of Environmental Psychology.

In the following, we would like to point out the three main reasons why we are convinced our article suits the scope and topic of JEP:

Novelty: As you pointed out in your Editorial of the journal, the impact of online environments on pro-environmental behaviour is a topic of growing importance, which has not yet been thoroughly studied in environmental psychology. With our experiments on online interventions for sufficiency behaviour, we would like to contribute to advancements in environmental psychology research, as well as gain evidence on how to build a sustainable digital world. Myself and two of my co-authors belong to the research team “[Digitalization and Sustainability](#)” and have been researching this topic in various contexts. After a previous rejection of JEP (now published as Frick & Matthies, 2020: ‘Everything is just a click away’ at the Journal Sustainable Production and Consumption) you invited us to submit further work on online environments to JEP, and therefore we would like to publish our newest work with you.

Relevance: Environmental psychology research in the field of sufficiency and consumption reduction beyond energy use is still sparse. Additionally, more research on determinants of unsustainable overconsumption is needed (as pointed out by, e.g. Thøgersen, 2014, Uzzell & Rätzl, 2009). Our experiments address both research gaps. Valuable findings include the important role of aspiration levels and hedonic needs for sufficiency.

Method and reporting: In order to address both internal and external validity, we combined a field experiment with a laboratory experiment. Although non-significant results have often not been favoured in peer-reviewed journals, we felt encouraged by your recent webinar at the APA Division 34 to follow a strictly transparent reporting approach. In the paper at hand, we therefore include all hypotheses that we tested and that we initially extracted from past research and theory. It seems to us equally valuable to report on which intervention approaches did not work. Our aim in the study is not just to present under which conditions sufficiency promotion is successful, but also to point out the pitfalls for future research as well as practical implications.

Please note that the manuscript has not been published, is not under consideration for publication in another journal and will not be submitted elsewhere while under JEP review. The material in the manuscript will not infringe upon any statutory copyright. Our article can be subsumed under the themes “Ecological consequences of human actions”, as well as “psychology of sustainability and climate change”, and has a focus on online environments. We hope to provide our findings to a larger audience by seeing it published in your journal.

Thank you for your consideration and best wishes,

Vivian Frick, Maike Gossen, Tilman Santarius, and Sonja Geiger

When your shop says #lessismore. A field and laboratory intervention on online communication for clothing sufficiency.

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Ethical statement:

The laboratory experiment was accepted by the ethical committee „Ethik-Kommission der Otto-von-Guericke-Universität an der Medizinischen Fakultät und am Universitätsklinikum Magdeburg A.ö.R.“ under 02/20 Online-Experiment Suffizienzkommunikation.

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Abstract

To keep resource consumption within planetary boundaries, current consumption levels need to drop. We investigate whether online communication interventions foster sufficiency, as multiplier potentials are ascribed to online interventions especially on social media. In two experiments in the clothing domain, reduced purchases, sharing and prolonging the lifetime of clothes were promoted. In study 1, an online field intervention was conducted. Analyses shows that all participants, both in the experimental and the control groups, reduced their clothing consumption. Hence the intervention itself did not change clothing consumption levels. Study 2 was a laboratory experiment with sufficiency-promoting social media communication. Sufficiency-promoting communication led to more sufficiency behaviour compared to neutral and consumption-promoting communication. This effect was mediated by a lower aspiration level. Also, the attitude towards the sender and the communication was more positive in the sufficiency-promoting communication than under the other two conditions. Peer endorsement of the communication by other social media users did not strengthen this effect. For social media interventions to change consumption patterns, endorsement may have to be expressed by peers known personally. Although the field intervention was not effective, social media posts can increase sufficiency behaviour in the short-term. To test long-term effects, further research is needed.

Keywords: sufficiency, sustainable consumption, behaviour change, intervention, social media, online environment

Highlights:

- Sufficiency-promoting social media content promotes sufficiency behaviour in a laboratory setting
- This effect is mediated by the aspiration level
- A single online communication intervention by an existing online shop could not change sufficiency behaviour of its customers in the field
- No effect for peer endorsement by social media users could be found

1. Introduction

Consumption behaviour is increasingly influenced by online environments. Acquiring consumption goods or services has been made easier, cheaper and more accessible through e-commerce (Midden et al., 2007; Wang et al., 2015). Online environments also influence motivational determinants of consumption behaviour, such as attitudes, pro-environmental and social norms or aspiration levels by providing consumer information, containing an increasing amount of marketing or setting the stage for influencer campaigns on social media (Frick & Santarius, 2019; Reisch, 2001). As this ‘digital transformation’ gains ground, society is facing the challenge of bringing about a ‘social-ecological transformation’, i.e., building a society in which from the impact of consumption levels remain within planetary boundaries (Steffen et al., 2015). In this context, consumption must not only become more efficient and more environmentally sound, but also needs to decrease in absolute terms – which requires behavioural changes towards sufficiency (Lorek & Fuchs, 2013; Schöpke & Rauschmayer, 2014). Sufficiency denotes a self-determined reduction of material consumption levels in absolute terms while ensuring individual well-being (Princen, 2005). More specifically, sufficiency behaviour means reducing the purchase of new resource-intensive goods, choosing goods that are smaller or of lower capacity, and using resource-intensive goods and services less often (Jenny, 2016). Following this definition, sufficiency behaviour in the clothing domain means reducing the purchase of new clothing as well as prolonging product lifetime by engaging in behaviours like care, repair, second-hand acquisition, and clothing exchanges. In a similar vein, decisions to repair rather than replace a defective product lead to consumption reduction (Scott & Weaver, 2018). Clothing plays an essential role in the required transformation, being prone to overconsumption and having detrimental environmental effects (Choudhury, 2014). Yet, clothing sufficiency is currently a niche phenomenon in the Global North (Kleinhückelkotten & Neitzke, 2019), partly because the fast fashion industry and its marketing strategies go to great effort to persuade people to buy more clothes than necessary and discard them whilst they are still functional (Fletcher, 2007).

Depending on their context, online environments like social media platforms may influence consumption behaviour both ways, by promoting the intensified acquisition of goods or by supporting sufficiency. Currently, consumption-promoting communication predominates in online environments: Online marketing is ubiquitous, increasingly intrusive and primarily targets increased consumption (Pappas et al., 2017), proving even more efficient than non-digital marketing (Dinner et al., 2014). This also applies to clothing, which

is among the most strongly advertised of consumption goods online (Statista, 2019), and clothing-related communication in social media abounds. Although social media use is also related to conspicuous consumption (Taylor & Strutton, 2016; Thourunrojroje, 2014), the majority of studies concerning social media's influence on consumption focus on increasing consumption from a marketing perspective. Hence, individuals usually perceive more consumption-promoting than sufficiency-promoting content on social media. Previous research shows that only the former was found to be associated with higher individual consumption levels (Frick et al., 2020).

Nevertheless, in certain consumption segments, a growing interest in sufficiency can be observed: sustainability trends, such as minimalism, slow fashion or voluntary simplicity emphasise quality through consumption reduction (e.g. Etzioni, 1998; Jung & Jin, 2016). These trends are also being promoted in online marketing (Gossen et al., 2019). Furthermore, studies have shown that pro-environmental behaviour can be fostered through social media (Ballew et al., 2015). Hence, we propose that sufficiency-promoting communication in online environments may help individuals to adopt sufficiency behaviour, by influencing motives and strengthening norms of sufficiency.

In this paper, we report on two consecutive studies. In study 1, we conduct a field experiment with customers of a sustainable online shop. There, we examine the impact of an online intervention applying sufficiency-promoting communication in social media on behavioural change towards sufficiency in the clothing consumption domain. Study 2 is an online laboratory experiment with a representative sample for social media users. Here, we investigate the impact of sufficiency-promoting communication on sufficiency behaviour as well as on the attitude towards the communication and its sender, and compare it with the impact of consumption-promoting communication and neutral communication, i.e. communication that promotes neither more nor less consumption. Additionally, we address social media communication in more detail, testing whether peer endorsement by other social media users through likes and comments increases the effect of sufficiency-promoting or consumption-promoting communication.

1.1. Online interventions for sufficiency behaviour

With online communication and information increasing constantly, online environments offer various new possibilities for interventions using information, persuasion and communication (Guadagno & Cialdini, 2005). They offer new channels for providing sustainability-related information, such as blogs, websites, social media content or

smartphone applications, that are available anytime and accessible from anywhere (Börjesson Rivera et al., 2014; Frick & Santarius, 2019).

Behaviour change interventions can target structural change (e.g. providing incentives to reduce behavioural costs and boost self-efficacy) or information provision (changing motivational determinants, e.g. intention or personal norm) to foster pro-environmental behaviour (Abrahamse & Matthies, 2012; Mosler & Tobias, 2007). Purely informational interventions for pro-environmental behaviour were often found not to be effective (Abrahamse & Matthies, 2012; Bamberg & Möser, 2007). However, several approaches raise intervention effectiveness: Tailoring information to the recipient, providing information not only on environmental problems but also offering action knowledge on how to help solve the problems, or including social information (e.g. social norms, Abrahamse & Matthies, 2012; Goldstein et al., 2008). Research on the effectiveness of interventions promoting sufficiency behaviour – online or not – is still sparse. So far, only few empirical studies have dealt with the influence of sufficiency-promoting communication. Some authors found a positive influence on attitudes towards sufficiency-promoting communication and their senders (Armstrong Soule & Reich, 2015; Gossen & Frick, 2018; Reich & Armstrong Soule, 2016), others found that sufficiency-promoting communication actually fosters sufficiency intentions and behaviour (Ramirez et al., 2017). A laboratory study showed that sufficiency-promoting advertising leads to a lower purchase intention of clothing than traditional advertisements (Hwang et al., 2016).

Interventions on social media platforms are claimed to be especially effective because they change behaviour through social influence, with some authors claiming they can be as influential as face-to-face interactions, but have a wider reach (Goldsmith & Goldsmith, 2011). Peer communication on social media can lead to behavioural and motivational change through social influence such as social learning (Bandura, 2009), social norms or persuasion (Guadagno & Cialdini, 2005). Therefore, social media communication promoting sufficiency may be more effective when peers are visibly embracing the message by liking and commenting. Likewise, an online intervention including visible peer engagement on social media was effective in encouraging college students to save energy (Senbel et al., 2014).

1.2. Changing motives of clothing consumption

Information-based interventions change behaviour such as clothing consumption by influencing individuals' motives (Steg & Vlek, 2009). According to the multiple goals theory, three motives are relevant for determining pro-environmental behaviour: Normative motives of what one should do due to personal or social norms; gain motives of what brings personal

advantages; and hedonic motives of what feels good (Lindenberg & Steg, 2007). Pro-environmental behaviour can be fostered by strengthening normative motives, decreasing hedonic and gain motives that are opposed to pro-environmental behaviour, or aligning gain and hedonic motives with normative motives (Steg et al., 2014; Steg & Vlek, 2009).

Looking first at normative motives, the effect of social influence that is expressed in peer endorsement on social media is often explained by a change of descriptive social norms that people infer from their peer's information online, i.e. their visible online activities such as liking, commenting, posting (Ballew et al., 2015; Guadagno & Cialdini, 2005). Descriptive social norms foster behaviour by normative information on the behaviour of a peer group (Cialdini et al., 1991; Goldstein et al., 2008) and were repeatedly found to strongly influence pro-environmental behaviour (Abrahamse & Steg, 2013). In an online context, communicating the social information of sustainability-oriented descriptive norms can increase sustainable product choice (Demarque et al., 2015) and was experimentally shown to influence individual decision-making on a large scale (Bond et al., 2012). Hence, it is claimed social media has the potential to improve distribution of pro-environmental social norms (Ballew et al., 2015; Goldsmith & Goldsmith, 2011; Stephen, 2016).

Other types of normative motives address what individuals personally perceive as morally right. Recent studies discovered normative motives such as personal norms especially relevant for sufficiency behaviour in clothing (Joanes et al., 2020). Moreover, it was found that normative goal framing can increase sufficiency behaviour (Thøgersen & Alfinito, n.d.). The personal norm describes a feeling of moral obligation (Schwartz, 1977).

Further, as proposed by Lindenberg and Steg (2007), motives that may weaken sufficiency behaviour include gain and hedonic motives. In the clothing context, an example for such motives opposed to sufficiency is the aspiration level with regard to clothing, i.e., the perceived need or desire to acquire new pieces of clothing (e.g. Jenny, 2016). It has been observed that hedonic values negatively relate to sustainable fashion consumption (Geiger & Keller, 2018). As another example, materialism has been found to negatively correlate with pro-environmental behaviour (Hurst et al., 2013). Additionally, activation of self-enhancement values, such as material aspirations proved to weaken self-transcendence values such as environmentalism and benevolence, and vice versa (Maio et al., 2009). Clarifying underlying theoretical assumptions on how and in which context interventions work, we expect that framing sufficiency-promoting communication with intrinsic, non-materialistic benefits of sufficiency (e.g. lightness, freedom, autonomy, sense) decreases the hedonic motive of clothing aspiration levels and thus strengthens sufficiency behaviour (Lindenberg &

Steg, 2007; Pelletier & Sharp, 2008). It may also replace materialistic motives with non-materialistic ones: embedded in concepts such as voluntary simplicity or minimalism, sufficiency behaviour has personal advantages such as monetary savings and less pressure to earn money which can be spent (Etzioni, 1998).

1.3. Companies as senders of sufficiency-promoting communication

Sufficiency-promoting communication interventions stem mostly from political or civic actors (McKenzie-Mohr, 2011). Yet commercial actors can play an important part in fostering and spreading sufficiency (Bocken & Short, 2016; Heikkurinen et al., 2019; Makri et al., 2020). They are able to change behaviour towards sufficiency through their marketing activities, since these provide preferred tools to create and maintain customer relationships and can influence consumption decisions effectively. Sufficiency-promoting marketing focuses on satisfying ‘needs’ rather than promoting ‘wants’ and aims at only selling to the customer that which is needed at the moment of purchase (Bocken et al., 2020; Gossen & Frick, 2018). This strategy is increasingly proving its relevance – both in practice, shown, for example in Patagonia’s prominent campaign “Don’t buy this jacket” (Hwang et al., 2016), as well as in scientific discourse (Gossen et al., 2019).

Companies might refrain from implementing sufficiency-promoting marketing if it appears unusual and controversial in the eyes of their customers and leads to image loss (Gossen et al., 2019). Indeed, a few empirical studies have examined the perception and attributions of such communication. Sufficiency-promoting advertisement was shown to be attributed with altruistic motives (i.e., socially and environmentally beneficial) and strategic motives (i.e., customer acquisition, customer loyalty and profit) of the respective company, while exploitative motives in the sense of greenwashing are rather not assumed (Armstrong Soule & Reich, 2015; Gossen & Frick, 2018). Ramirez et al. (2017) support the assumption that sufficiency-promoting communication positively affects the recipient’s attitudes toward the sender. Environmental-sensitivity and trust in the company are perceived more positively by participants who are exposed to sufficiency-promoting communication. Additionally, being aware of the sender’s high credibility and altruistic motives is related to an increased intention to sufficiency behaviour (Gossen & Frick, 2018). However, the majority of marketing activities are aimed at increasing profits and sales, and advertising is primarily intended to increase consumption.

1.4. Two-study outline

We combined a field experiment (study 1) and a laboratory experiment (study 2) in order to maximize internal and external validity. The field setting maximises external validity

(Lusk et al., 2006). Furthermore, collaborating with an online shop allows for insights regarding practical implementations (Lang et al., 2012). With study 1, we focused on online sufficiency-promoting communication and tested whether it can lead to increased sufficiency behaviour and which motives mediate this effect. The longitudinal design further enabled sufficiency behaviour to be measured, by assessing consumption levels of clothing during a period of four weeks. However, the transdisciplinary approach posed practical constraints that prevented all hypotheses of this paper to be addressed. This is why we conducted a complementary laboratory experiment. Study 2 included best practice strategies that strengthen internal validity. Full randomisation is provided by the laboratory setting, and the experiment was assessed and approved by an ethical committee. In this cross-sectional design, sufficiency behaviour was assessed as an ad-hoc consumption decision. Study 2 further included and manipulated more factors, such as the comparison of sufficiency-promoting and consumption-promoting communication with a neutral communication condition, as well as peer endorsement on social media through peer likes and comments to deepen the understanding of social norms. Additionally, we addressed the organisational perspective on practicability of sufficiency-promoting communication. To find out whether it is beneficial for organisations, we tested how the attitude towards the communication and its sender differs between participants who are confronted with sufficiency-promoting communication and neutral or consumption-promoting communication.

2. Study 1: Exploratory field experiment

2.1. Hypotheses

The main hypothesis in the field experiment addresses the effectiveness of an intervention in online environments via social media and newsletters that promote sufficiency behaviour, with a clothing company sending the communication.

H1a: Sufficiency-promoting communication increases sufficiency behaviour compared to a neutral communication condition.

As environmental psychology theory and past research has established, social influence plays a major role in pro-environmental behaviour. We therefore expect that sufficiency-promoting online communication strengthens social norms, which then supports sufficiency behaviour.

H2a: The perceived descriptive social norm mediates the positive impact of sufficiency-promoting communication on sufficiency behaviour.

At the same time, moral motives are known as drivers for pro-environmental behaviour. We thus expect sufficiency-promoting communication to strengthen the personal norm for sufficiency. As a mediator, it promotes sufficiency behaviour.

H3a: The personal norm for sufficiency mediates the positive impact of sufficiency-promoting communication on sufficiency behaviour.

Sufficiency-promoting communication highlights non-materialistic values and thus decreases hedonic and gain motives for consumption. Therefore, we expect a mediating effect for the aspiration level for clothing:

H4a: A decrease in the aspiration level for clothing mediates the positive impact of sufficiency-promoting communication on sufficiency behaviour.

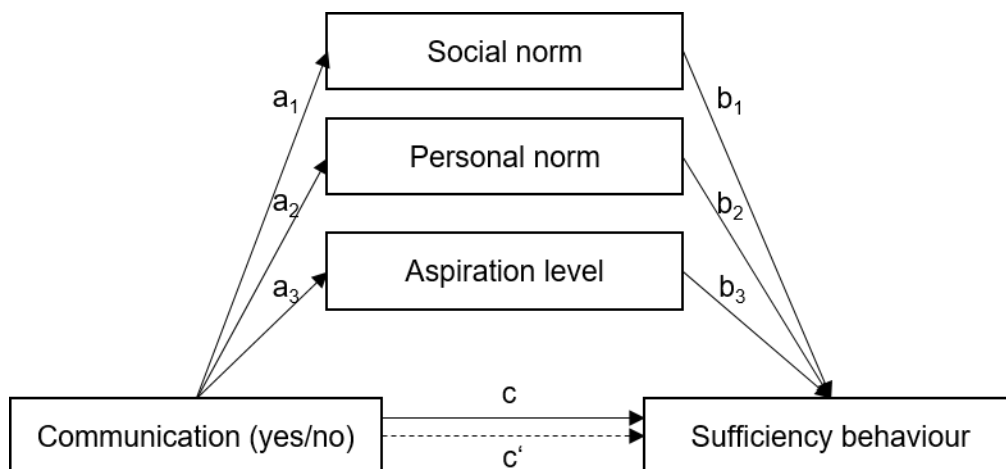


Figure 1. Hypotheses for study 1 (H1a: c; H2a: a_1b_1 ; H3a: a_2b_2 ; H4a: a_3b_3)

2.2. Method

Study 1 was designed as a field experiment to measure the impact of a sustainable online shop's sufficiency-promoting communication on its customers. In a quasi-experimental design, the subjects were assigned to either the experimental or control group by self-report of intervention perception. The longitudinal research design measured participants' sufficiency behaviour, operationalised as lower clothing consumption level, and compared this before and after the intervention, in the pre-survey (T1) and two post-surveys (T2, T3).

2.2.1. Sample

The sample consisted of customers of the sustainable online shop. Prior to the intervention, participants were recruited by the online shop's newsletter. Power analysis using G*Power indicated a sample size of only 234 participants for a medium effect size of 0.15, given $\alpha = 0.05$ and Power = 0.95. Yet sample size was determined by the return rate on the online shop's invitation. In total, $N = 3308$ participants completed the T1 questionnaire. All subjects were asked for an e-mail address in order that they could be contacted for the following surveys, resulting in a sample of $N = 3278$, to whom an invitation for the T2 questionnaire was sent. The second questionnaire was completed by $N = 2405$ participants (27 % drop-out rate). For T3, all participants who had completed T1 were again invited via e-mail, resulting in $N = 2113$ participants for the T3 questionnaire, representing the final sample (36 % drop-out rate from T1). This convenience sample (Table 1) is cannot be generalised for the German population, but was typical for the customers of the sustainable online shop, with a high rate of young, female participants, with low income and a high education level. Compared to the control group, the experimental group was younger, $t(2105) = 4.05, p < .001$, had a slightly lower education level, $\chi^2(2) = 12.46, p < .01$, and a lower income, $t(744.4) = 4.41, p < .001$ a higher percentage was female, $\chi^2(3) = 24.58, p < .001$, spent more time online, $t(2079) = -2.16, p < .001, d_{Cohen} = 0.12$, and had slightly higher environmental awareness, $t(2110) = -2.75, p < .01, d_{Cohen} = 0.13$.

Table 1. Sample description of the field experiment

	Field experiment	
	Control group $N = 1685$	Experimental group $N = 428$
Age $M (SD)$	33.5 (10.5)	30.6 (9.9)
Education level*	7.2 % secondary 30.2 % undergraduate 59.2 % graduate	10.3 % secondary 35.3 % undergrad. 49.5 % graduate
Income $M (SD)$	1524 (1134) €	1282 (981) €
Gender*	79.6 % female	90.0 % female

	18.9 % male	9.1 % male
Online h/day	2.82 (1.67)	3.02 (1.67)
Environmental awareness	4.53 (0.38)	4.58 (0.34)

Notes. Percentages not adding up to 100 % due to participants choosing “other” or “no indication”.

Range environmental awareness: 1 = very low, 5 = very high.

2.2.2. Material

The intervention was planned in a transdisciplinary process including workshops and meetings with representatives of the sustainable online shop. As a result, a ‘theme week’ intervention was implemented, during which sufficiency was communicated by the hashtag #lessismore. During the theme week, the online shop promoted clothing sufficiency through its social media accounts and a newsletter. The intervention advertised the benefits of buying less and only owning ‘favourite pieces’. In the newsletter, the idea behind #lessismore was introduced by presenting different styling options for a single clothing piece (trousers). On Instagram and Facebook, one staff member of the online shop posted photos and stories on a daily basis, showing alternative outfits for her favourite trousers and presenting capsule wardrobe collections. Also, polls for feedback were conducted, and discussions and interactions with the online shops’ followers about the benefits of being sufficiency-orientated in their dealings with fashion were initiated in the comments section of the social media channels.

2.2.3. Procedure

The sustainable online shop recruited participants by inviting its customers to take part in an online survey via their weekly newsletter, incentivised by a coupon raffle. In the first survey before the intervention (T1), the self-reported amount of new and second-hand clothing purchased in the previous four weeks, as well as aspiration level, personal norm and social norm for sufficiency were assessed. Additionally, e-mail addresses were recorded in order to send out the post-surveys. The survey contained further scales on frugality, materialism, fashion consciousness and attitude towards the sender, which are, however, not included in this study. After the intervention week, participants were invited to take part in the second survey (T2). Here, participants completed a manipulation check by stating whether they had taken note of the #lessismore theme week. By cued recall, we assessed whether participants remembered the newsletter, two exemplary posts from social media, as well as peers’ comments or comments made by themselves. If participants recalled at least one of the communication tools shown in screen-shots, they were assigned to the experimental group. Participants who did not notice the intervention were assigned to the control group. Cued recall revealed that 9 % of the sample had only seen the newsletter, 4 % only social media posts and 7 % had seen both, whereas 80 % had not seen any of the intervention.

The post-intervention survey (T2) contained the same questions as T1 except for shopping behaviour and additional questions about environmental concern, time spent online and socio-demographic variables. Only subjects in the experimental group were asked about their attitude towards the theme week and sender. The third survey (T3) was conducted four weeks after the intervention to assess behavioural impacts. This time, participants were again questioned about the self-reported number of new products and second-hand clothing purchased in the last four weeks.

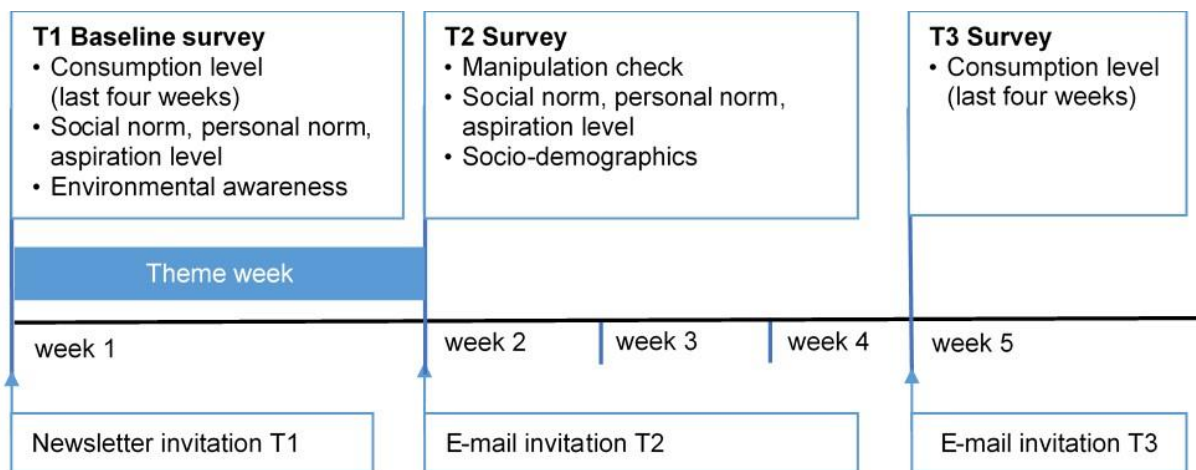


Figure 2. Procedure study 1

2.2.4. Measures

All measures can be found in Appendix A. If not otherwise specified, items were assessed on a 5-point Likert scale, with the option ‘I don’t know’, which was defined as a missing variable in subsequent analyses.

Consumption level. Sufficiency behaviour was operationalised as a low consumption level of clothing. This was assessed at T1 and T3. We asked for the amount of clothes obtained in local or secondhand-shops, clothes swapped or gifted, clothes bought online, online-reselling or online-exchange of clothing, and for the amount of self-made clothes, each on a scale from ‘0 pieces of clothing’ to ‘6 or more pieces’ during the last four weeks.

Personal norm for sufficiency consisted of three items ($\alpha_{T1} = .78$, $\alpha_{T2} = .78$) and were constructed following Schwartz (1977), e.g. ‘I feel obliged only to buy new clothes when I really need them’.

Social norm for sufficiency was assessed as the perceived descriptive social norms (Cialdini et al., 1991) of customers of the sustainable online shop as the peer group. Five items assess whether participants think other customers show sufficiency behaviour, e.g.

‘customers of the online shop buy new clothes if they really need them’ (-), $\alpha_{T1} = .78$, $\alpha_{T2} = .79$.

Perceived aspiration level of clothing was assessed by the mean of the subjectively ideal level of clothing consumption and the subjectively sufficient level of clothing consumption ($r_{T1} = .63$, $p < .001$, $r_{T2} = .62$, $p < .001$). The ideal level of clothing consumption was measured by the question ‘If time and money were no restraint, how many pieces of clothing would you ideally like to buy in a year?’ (Frick et al., 2020), and subjectively sufficiency-orientated clothing consumption level is assessed as the minimum amount participants need to buy yearly so as not to impact their well-being (Jenny, 2016).

Environmental awareness was assessed by using a short version of the German environmental awareness scale (Geiger, 2019) including 9 items, $\alpha = .66$. The option ‘I don’t know’ was also included and later defined as missing value in subsequent analyses.

Socio-demographics were gender, age, education level, and income level.

2.3. Statistical analysis

The interval-scaled variables measuring the aspiration level were tested for outliers. Outliers were identified, as proposed by Tabachnick and Fidell (2013), as values scoring higher than 3.29 standard deviations above the sample mean. They were truncated, i.e. recoded to scores one unit above the highest value within the described range. Missing data resulted in a decrease of the sample through listwise deletion. To test hypothesis 1a, repeated-measure variance analysis was applied.

Mediation analyses to test hypotheses 2a-4a and the pretest-posttest control group design from Valente and MacKinnon (2017) was applied. This method adjusts for pretest scores and thus controls for confounders invariant over time. Path analyses with manifest variables were executed with R lavaan (Rosseel, 2012), using robust maximum likelihood. In order to handle missing data, we used full information maximum likelihood (Graham, 2009; Steinmetz, 2015).

2.4. Results

All measured variables are listed in Table 3. To check whether randomisation led to comparable groups, we checked for differences in all study variables before intervention (T1) via multiple variance analysis (MANOVA). We found no significant differences between experimental and control groups, except for social norm for sufficiency, which was higher in the experimental group, $F(1) = 23.63$, $p < .001$, partial $\epsilon^2 = .015$.

Table 2. Descriptive statistics of study 1

Dependent variable	Control group (n = 1685)				Experimental group (n = 428)			
	T1		T2		T1		T2	
	M	SD	M	SD	M	SD	M	SD
Consumption level	2.41	2.58	1.98	2.29	2.51	2.60	2.08	2.34
<i>Mediators</i>								
Aspiration level	13.16	7.90	13.00	7.82	13.22	7.43	13.34	7.86
Personal norm	3.70	0.82	3.84	0.79	3.79	0.78	3.94	0.76
Social norm	3.41	0.59	3.46	0.59	3.58	0.55	3.63	0.53

Notes. Social norm: CG T1 $n = 1390$, T2 $n = 1319$; EG T1 $n = 390$, T2 $n = 386$.

Repeated-measure variance analysis showed that consumption levels dropped in both the experimental and control groups from pre- to post-intervention measurement, $F(1, 2111) = 25.94$, $p < .001$, $\epsilon = .012$. There was no main effect of the group, $F(1) = 0.91$, $p = .34$. Yet the experimental group did not differ from the control group in their consumption reduction, $F(1, 2111) < .01$, $p = .98$. The intervention therefore did not make a difference in participants' clothing consumption, but all participants reduced their clothing consumption.

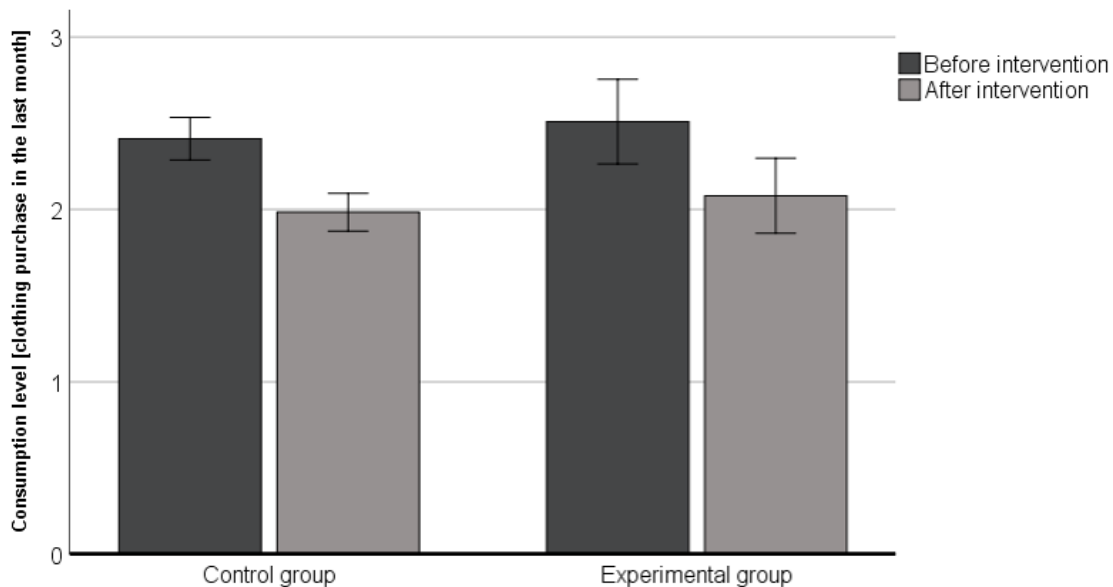


Figure 3. Clothing consumption level in the last month before (black) and a month after (grey) the theme week intervention. Error bars indicate 95% confidence intervals.

Addressing H2a-H4a, we examined whether an influence of the intervention on the consumption level was mediated by motive changes. As Table 3 shows, the intervention had a small effect on the perceived descriptive social norm for sufficiency with regards to other customers (path a_1), yet this social norm had no effect on the consumption level of clothing (path b_1). The consumption level after the intervention was influenced by the aspiration level

(path b_3). Yet the intervention had no effects on personal norm or aspiration level, and mediation effects turned out to be non-significant. It is noteworthy that although mediators were stable over time (stability sm_{1-3}), the consumption level of clothing before and after the intervention had only a weak positive relationship (stability sy).

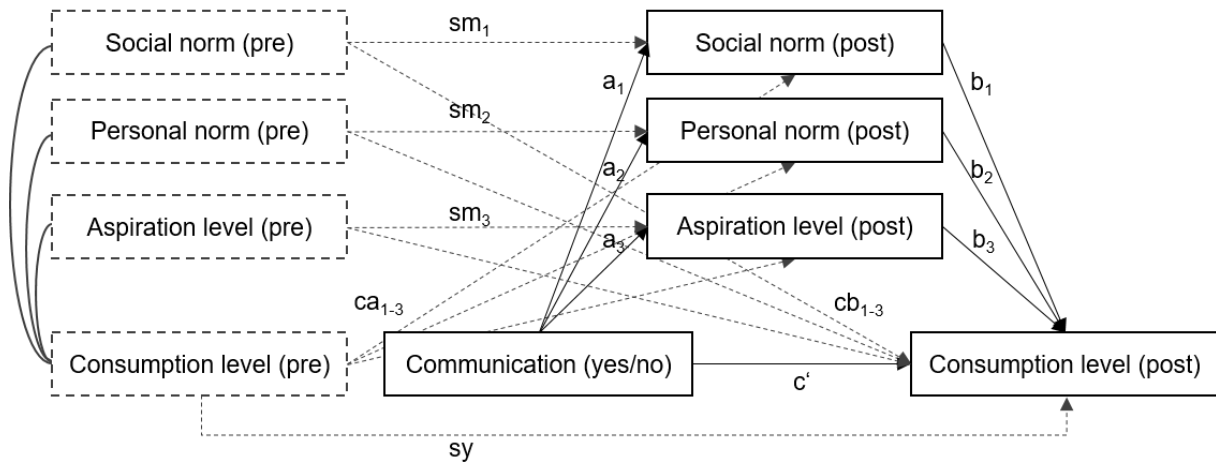


Figure 4. Mediation model of consumption reduction after Valente and MacKinnon (2017). Model includes the effects of intervention on mediators (a), effects of mediators on outcome (b), effect of intervention on outcome (c'), stability of mediators (sm) and stability of dependent variable (sy), cross-lagged effects on mediators (ca), cross-lagged effects on outcome (cb), and the pretest correlations between mediators and outcome.

Table 3. Mediation model predicting consumption reduction

	<i>b</i>	<i>se</i>	β	<i>z</i>	<i>p</i>
<i>Path</i>					
a1	0.08	0.03	.06*	3.25	<.01
a2	0.05	0.03	.03	1.75	.08
a3	0.22	0.29	.01	0.76	.45
b1	-0.05	0.13	-.01	-0.37	.71
b2	-0.13	0.09	-.04	-1.34	.18
b3	0.03	0.01	.10*	2.64	.01
c'	0.09	0.12	.02	0.74	.46
<i>Stability</i>					
sm1	0.61	0.02	.61*	26.15	<.01
sm2	0.67	0.02	.70*	40.28	<.01
sm3	0.90	0.02	.79*	44.09	<.01
sy	0.13	0.02	.14*	5.43	<.01
<i>Cross-lagged effects</i>					
ca1	-0.01	0.00	-.03	-1.43	.15
ca2	-0.01	0.01	-.05*	-2.71	.01
cb3	0.10	0.05	.03	1.94	.05
cb1	0.15	0.11	.04	1.31	.19

cb2	-0.25	0.09	-.09*	-2.77	.01
cb3	0.01	0.01	.04	1.01	.31
<i>Covariates</i>					
Consumption (pre) – social norm (pre)	0.04	0.03	.03	1.08	.28
Consumption (pre) – pers. norm (pre)	-0.21	0.05	-.10*	-4.19	<.01
Consumption (pre) – aspiration l. (pre)	3.67	0.49	.18*	7.43	<.01
<i>Indirect mediation effects</i>					
Social norm (H2)	0.00	0.01	.00	-0.37	.71
Personal norm (H3)	-0.01	0.01	.00	-1.05	.30
Aspiration level (H4)	0.01	0.01	.00	0.74	.46

Notes. SEM fit indices: $\chi^2(16) = 463.87$, CFI = .90, RMSEA = .12, SMSR = .11

2.5. Discussion

In the field experiment, all participants had reduced their clothing consumption (and thus increased their sufficiency behaviour), regardless of whether they had seen the intervention or not. This replicates findings of a similar field experiment in social media, which aimed at reducing food waste (Young et al., 2017) and yielded that both social media and control groups showed significant reductions in self-reported food waste. From this, we conclude that either the questionnaire itself had an effect, as participants reflected on their clothing consumption during the pre-test questionnaire. Accordingly, it has been shown that assessing consumption intentions alone may alter subsequent behaviour, at least in the short term (mere-measurement effect, Morwitz & Fitzsimons, 2004). Another explanation may be the point of time in a clothing consumption cycle: When participants first filled out the questionnaire, they may (irrespective of their perception of the intervention) merely have been interacting with the online shop and thus were more likely to have bought clothes, whereas a month later they may not have been in a ‘consumption phase’. Also, clothing consumption may be something which is undertaken infrequently, leading to a high error variance in the outcome variable and thus possibly weakening effects. The low stability of clothing consumption in the four weeks prior to intervention, compared to the month after intervention, supports this explanatory approach.

Mediation analysis showed that the intervention did not affect personal norm, social norm or aspiration levels, which in turn could not predict the change in consumption level from pre- to post-intervention. In any case, the non-significant results and low visibility of the theme week show that single interventions in social media may not be strong enough to have a measurable effect. The reason for this may be found in low attention levels on social media and the sheer amount of information available online (Maurer & Wiegmann, 2011).

Therefore, social media communication might be too weak when it appears as singular posts in participants' newsfeed. However, online sufficiency promotion might be able to influence consumption if repeated exposure is applied, possibly with several posts from several senders spread over time.

An additional challenge was the transdisciplinary approach, which gave us less control regarding the topic and wording of the intervention. Focussing on the hashtag #lessismore and on 'favourite pieces' within the theme week may not be explicit enough to foster sufficiency behaviour. In another recent study it was shown that reminding individuals about the environmental consequences of their purchases can effectively increase voluntary simplicity (Peifer et al., 2020), thus it seems advisable to educate individuals on the link between overconsumption and the ecological harnesses of fast fashion before they indicate their purchase intentions.

Further, whereas the study's strength lies in its sample size and external validity and practical implications through the field study approach, its methodological weaknesses should also be considered. The quasi-experimental approach, assigning participants post-hoc to experimental and control groups resulted in selection effects. As seen in the group comparison, the groups were inherently different in terms of their initial consumption level, social media use, and sociodemographic characteristics. Also, we could not completely rule out that drop-outs between T1 and T3 (36 %) were selective, even if there is no strong rationale for this. A further insight is that only 21 % of participants reported having seen any of the theme week communication activities. Finally, it must be noted that the sample was not representative for the German population. Participants were recruited among customers of a sustainable online shop, which attracted participants with higher-than-average education levels, environmental concern and mostly female gender, as was also found in other convenience sample studies concerned with consumption reduction (Herziger et al., 2020; Joanes et al., 2020).

Despite methodological weaknesses, the field experiment indicates positive effects of sufficiency-promoting communication on clothing sufficiency and provides interesting practical implications. To address these potentials, a laboratory experiment was indicated to follow up on open questions.

3. Study 2: Online laboratory experiment

3.1. Hypotheses

Study 2 adds further hypotheses to be tested along with the hypotheses from study 1 (Figure 1). As consumption promotion is more prevalent on social media than sufficiency promotion, the comparison between sufficiency-promoting and consumption-promoting communication is of practical interest. In order to get a more nuanced picture on the effects of communication effects on sufficiency behaviour, we thus compare sufficiency-promoting and consumption-promoting communication with a neutral communication condition that does not suggest any change in the recipient's consumption levels. Further, the aspiration level, personal norm and social norm for sufficiency were also expected to mediate this relationship analogous to H2a-H4a (Figure 1).

H1b: Consumption-promoting communication decreases sufficiency behaviour compared to a neutral communication condition.

H2b, H3b, H4b: The perceived descriptive social norm, personal norm and aspiration level mediate the negative impact of consumption-promoting communication on sufficiency behaviour.

In the laboratory setting, the impact of peer endorsement of communication conditions through likes and comments could be controlled for and tested. Each communication condition on social media was presented either with or without peer comments and likes. As seen in the literature, peer endorsement can be defined as a manipulated descriptive norm, and is expected to increase the effect of communication interventions. Accordingly, we hypothesise that peer endorsement of social media communication increases its effectiveness, proposing a moderating effect on the impact of communication conditions on sufficiency behaviour (Figure 5). Note that most above cited literature detected effects for peer groups that participants actually knew in person. In our research, we focus on social media communication from organisations and therefore test whether descriptive social norms shown by the more distal peer group of social media users are equally effective.

H5a, H5b: Peer endorsement moderates the positive impact of sufficiency-promoting communication on sufficiency behaviour (a) and the negative impact of consumption-promoting communication on sufficiency behaviour (b).

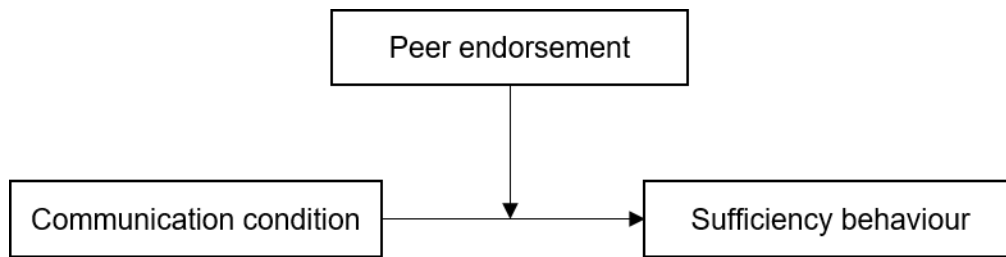


Figure 5. Moderation effect of peer endorsement by social media users

Since in study 1 we examined only customers of a sustainable online shop who reported high environmental awareness, in study 2 we controlled for such values in a representative sample. Individuals' pre-existing values influence their consumption decisions (e.g. de Groot & Steg, 2010). Participants' self-transcendence and self-enhancement values are therefore included in the analysis as a covariate (Schwartz, 1992; Steg et al., 2012). We expected that participants with high self-transcendence values (biospheric and altruistic values) would show higher sufficiency behaviour, with the opposite true for participants with high self-enhancement values (hedonistic and egoistic values).

H6: Individuals with high self-transcendence values show higher sufficiency behaviour, whereas individuals with high self-enhancement values show lower sufficiency behaviour.

Finally, the attitude towards sufficiency-promoting communication and towards the sender are expected to be more positive than in the case of consumption-promoting communication.

H7a, H7b: Sufficiency-promoting communication leads to a more positive attitude towards the communication and sender than neutral communication (a) and consumption-promoting communication (b).

3.2. Method

Study 2 was conducted as an online laboratory experiment, allowing for a representative sample, full randomisation and addressing the additional hypotheses. The participants were randomly assigned to one of six conditions in a 3x2 design, with the three communication conditions (neutral, sufficiency-promoting and consumption-promoting), each paired with only the fictional company's communication (Instagram posts) or the communication plus peer endorsement (Instagram posts with likes and comments).

3.2.1. Pre-study for the design of experimental material

In order to identify the most effective posts for the actual laboratory experiment, we conducted a pre-study. Initially, seven posts were designed (in each of the three versions

neutral, sufficiency-promoting and consumption-promoting, but not including peer endorsement). In three surveys with mixed posts, $N=105$ could rate the posts on two dimensions. First, participants' attitude towards the communication was assessed, and second, the participants rated the post on a consumption promotion scale from 1 = 'the post is intended to make me consume less', to 3 = 'neither', to 5 = 'the post is intended to make me consume more'. Based on these indicators, four posts were selected for the experiment. They were selected on the basis of the sufficiency-promoting version scoring as low as possible, the consumption-promoting version scoring as high as possible and the neutral version scoring in the middle range of the consumption promotion scale. At the same time, the posts with an overall positive attitude were chosen. The consumption promotion in the sufficiency-promoting condition was perceived as $M(SD) = 1.99(0.96)$, so on the side of 'intended to make me consume less', the mean in the consumption-promoting condition was $M(SD) = 4.16(0.82)$, 'intended to make me consume more', and in the neutral condition it was $M(SD) = 3.40(0.76)$. The sufficiency-promoting communication included both messages directed towards normative motives (as proposed by Joanes et al., 2020) and hedonic motives (as proposed by Herziger et al., 2020) to engage in sufficiency behaviour. The messages thus included both ecological and personal advantages of sufficiency.

3.2.2. Sample

The data was collected by a market research institute within its online access panel, recruiting participants from Germany. As an inclusion criterion, participants were screened for social media use (Facebook, Instagram or Twitter). Only participants who used it at least once a week were included. To provide representativeness, a socio-demographic distribution was chosen that is representative for the part of the German population who actively participate on social media. Therefore, participants were screened on the criteria of age (three age groups between 16 and 69 years), gender (two groups), education level (three levels) and income (two levels). The planned sample was $N = 1100$, as power analysis using G*Power proposes a sample size of 1093 participants for a medium effect size of 0.15, given $\alpha = 0.05$ and Power = 0.95.

$N = 2286$ people accessed the survey, $N = 815$ were excluded as they did not use social media regularly, $N = 222$ because they did not pass a control question ('please click 2 here'), $N = 13$ due to a break of more than 15 minutes within the questionnaire (as the priming effect of seeing the posts would fade over time), and $N = 259$ participants did not pass the manipulation check explained below. From the remaining $N = 977$ participants, $N = 96$ did not want to participate in the coupon raffle. The groups in the six conditions did not differ

significantly in age, $F(5) = 1.02, p = .41$, gender, $\chi^2(15) = 13.00, p = .60$, income, $F(5) = 0.76, p = .58$, education level, $\chi^2(10) = 10.44, p = .40$, or the time spent online, $F(5) = 1.36, p = .24$. The final sample of $N = 881$ is described in Table 4.

Table 4. Sample description

	Laboratory experiment Full sample <i>N</i> = 881	German Population (Destatis, 2018)
Age <i>M</i> (<i>SD</i>)	33.7 (13.4)	44.3
Education level*	52.2 % secondary 26.1 % undergrad. 18.9 % graduate	30.4 % secondary 23.1 % undergrad. 31.9 % graduate
Income <i>M</i> (<i>SD</i>)	1500 - 2000 €	1'957 € (in 2013)
Gender*	51.2 % female 48.6 % male	50.7 % female 49.3 % male
Online h/day <i>M</i> (<i>SD</i>)	3.82 (2.08)	3.27

Notes. Percentages not adding up to 100 % are due to participants choosing “other” or “no indication”.

3.2.3. Material

The manipulation comprises six communication conditions, each consisting of four Instagram posts of a fictional online clothing shop. Over the conditions, each post had an identical design, using the same picture and text design, and in the peer endorsement condition, also the same number of likes and comments. For an example of a post in the three communication versions see Figure 3. For full manipulation display, see supplementary material.

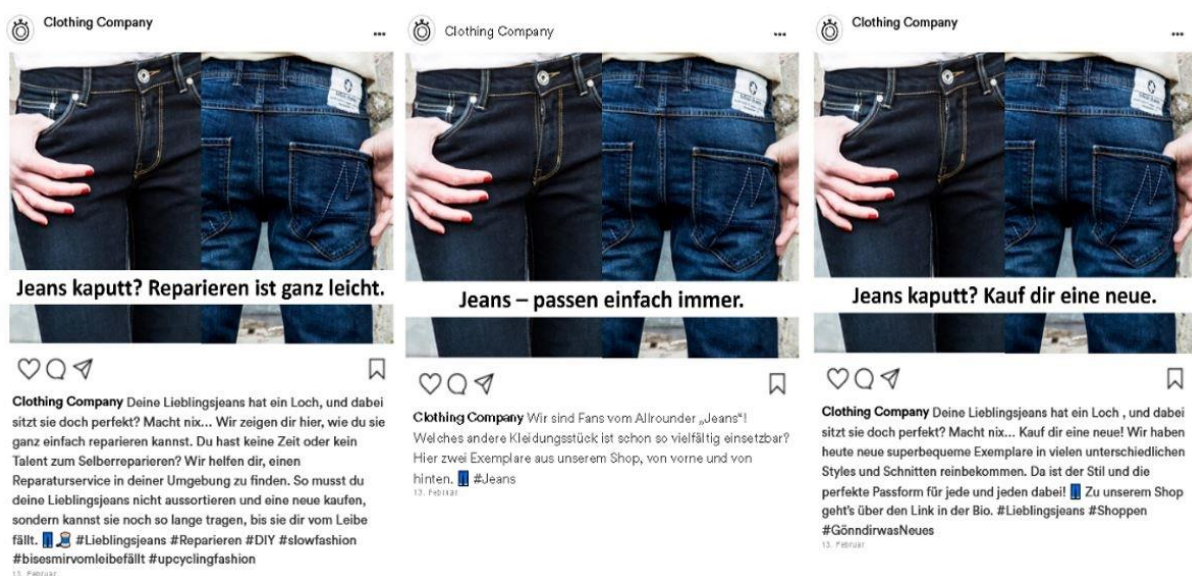


Figure 6. Manipulation from left to right: (1) Sufficiency-promoting communication: ‘Torn jeans? It’s easy to repair them.’, (2) Neutral communication: ‘Jeans - they always fit.’, (3) Consumption-promoting communication ‘Torn jeans? Buy a new pair.’.

3.2.4. Procedure

After entering the survey, a screening question covered the social media use in terms of frequency and general internet use in terms of time expenditure. Next, participants were asked for their age, education level, income level and gender, in order to screen for quotas that ensure a representative sample for the German population actively participating on social media in all six conditions. This was followed by random assignment to one of the six communication conditions and a presentation of the intervention, consisting of four Instagram posts (for an example see figure 6). Participants were asked to look at the posts for a given time and like and comment on them. Each post was shown for at least 8 seconds, and the median time that participants spent looking at each of the four posts was between 15 and 21 seconds. After manipulation, dependent variables were assessed (see next chapter).

3.2.5. Measures

All measures can be found in Appendix B. If not otherwise specified, items were assessed on a 5-point Likert scale, with the option ‘I don’t know’, which was defined as a missing variable in subsequent analyses.

Sufficiency behaviour in the domain of clothing was measured by a coupon choice. In a coupon raffle for 10 vouchers at 10 Euros each, participants could choose between four coupons: two options for popular retail shops representing a consumption-oriented choice, and two options representing sufficiency behaviour, namely a voucher for a second-hand online shop, or a donation of the given amount to a NGO that campaigns for sustainable clothing consumption. The option ‘I do not want to take part in this raffle’ was defined as a missing variable. To determine sufficiency behaviour as a dichotomous variable, voucher choices for the charity donation and second-hand online shop were coded as 1 = yes, and the regular online-shop vouchers were coded as 0 = no.

Perceived aspiration level of clothing was assessed the same way as in study 1.

Personal norm for sufficiency was assessed the same way as in study 1.

Social norm for sufficiency was assessed using a set of eight items, on the descriptive social norm of the peer group for sufficiency (e.g. reduced consumption, repair, sharing), that varied slightly from study 1, this time defined as ‘Instagram users’, $\alpha = .82$.

Attitude towards sufficiency-promoting communication was measured with five self-constructed items assessing how users liked the posts ($\alpha = .77$), e.g. ‘The social media presence of the clothing company is appealing’.

Attitude towards the sender measured how participants perceived the online shop due to its communication. The scale ‘motives of the sender’ was used (Armstrong Soule & Reich, 2015). In it, the altruistic dimension, and reversed strategic and exploitive motives were integrated ($\alpha = .77$). Each dimension consists of three items. ‘Tries to address new customers’ or ‘does not really care for the environment’ are examples for motives of the sender.

Universal values was assessed using a short version of Schwartz’s value scale (Steg et al., 2012) to measure altruistic and biospheric values in the category of self-transcendence, $\alpha = .88$, and egoistic and hedonistic values in the category of self-enhancement, $\alpha = .77$, with eight items ranging from -1 ‘opposed to my values’, 0 ‘unimportant’ to 7 ‘guiding principle’.

Manipulation check. To check whether participants received and understood the communication content, they were shown one of the four social media posts in all three communication versions (i.e., neutral, consumption-promoting, sufficiency-promoting), as well as the option ‘I did not see any of these posts’ and were instructed to pick which one of them was presented to them.

Socio-demographics. We assessed the socio-demographic variables gender, age, education level, income level and time spent online.

3.3. Statistical analysis

To test the hypotheses of sufficiency-promoting communication or consumption-promoting communication (H1), their interaction with peer endorsement on sufficiency behaviour (H5), as well as the covariates of universal values (H6), stepwise hierarchical logistic regression was applied (Field, 2009). The impact on the attitude towards the message and the sender (H7) was computed with variance analysis (ANOVAs). These analyses are computed in SPSS 25. Mediation analyses, including sufficiency-promoting communication (H2a-H4a) and consumption-promoting communication (H2b-H4b), were tested against the neutral condition in two separate models, each with a mediation analysis applying diagonal weighed least squared estimator (DWLS) in R lavaan (Rosseel, 2012; Steinmetz, 2015).

3.4. Results

Outcome and mediator variables are shown in Table 5. Sufficiency behaviour as coupon choice was rather rare, with 18.3 % of participants choosing to donate their prize to an NGO for sustainable clothing, and 9.2 % choosing the coupon for an online peer-to-peer

second-hand marketplace, whereas the other 72.5 % chose one of the two clothing shop coupons.

The influence of communication condition, peer endorsement and values as covariates on sufficiency behaviour was assessed by hierarchical logistic regression (Table 6). Hypothesis 1a was confirmed at Step 1, not including covariates. If participants were presented the sufficiency-promoting communication, they were 1.51 [95% CI 1.06 – 2.14] times as likely to choose the sufficiency coupon than participants in the neutral condition. Further analyses revealed that this effect was explained by participants with high self-transcendence values, shown in the interaction effect of self-transcendence and sufficiency promotion (Step 3). Additionally, high self-enhancement values decreased sufficiency behaviour. The participants who saw consumption-promoting communication did not choose the sufficiency option less often than those in the neutral condition (H1b). The stepwise procedure produced the best model fit ($\chi^2(6) = 35.52, p < .001$) for the model seen in Table 6 that excluded peer endorsement (Block $\chi^2(1) = 0.18, p = .67$), the interaction effect between communication conditions and peer endorsement (H5, Block $\chi^2 = 0.49, p = .78$), and the interaction effect between communication conditions and self-enhancement (Block $\chi^2(2) = 1.11, p = .57$), which had no effect on sufficiency behaviour.

Table 5. Descriptive variables

	Consumption promotion				Neutral condition				Sufficiency promotion			
	Peer endorsement:		Peer endorsement:		Peer endorsement:		Peer endorsement:		Peer endorsement:		Peer endorsement:	
	without		with		without		with		without		with	
	<i>N</i> = 129		<i>N</i> = 145		<i>N</i> = 154		<i>N</i> = 146		<i>N</i> = 162		<i>N</i> = 145	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sufficiency behaviour*	24.03%		20.00%		25.97%		25.34%		33.95%		34.48%	
Ideal level of consumption	38.48	36.8	36.46	33.84	33.44	29.58	43.02	35.02	22.64	26.19	23.26	27.26
Sufficient level of consumption	9.51	12.27	10.10	14.62	8.88	12.05	11.91	13.84	5.75	10.53	6.52	9.14
Aspiration level	24.00	22.18	23.28	21.57	21.16	18.97	27.47	21.9	14.20	16.55	14.89	16.42
Personal norm	3.21	1.12	3.19	1.13	3.17	1.04	2.99	1.11	3.33	1.03	3.45	1.04
Social norm**	2.21	0.72	2.16	0.56	2.21	0.64	2.23	0.68	2.24	0.74	2.30	0.81
Attitude towards communication	3.14	0.82	3.32	0.84	3.24	0.86	3.16	0.83	3.77	0.81	3.73	0.78
Attitude towards sender	2.49	0.48	2.52	0.48	2.66	0.49	2.69	0.45	3.25	0.59	3.23	0.64
Self-transcendence	5.18	1.21	5.13	1.09	5.32	1.15	5.2	1.05	5.23	1.23	5.08	1.10
Self-enhancement	3.68	1.11	3.57	1.08	3.52	1.19	3.5	1.12	3.37	1.16	3.57	1.01

Notes. * Dichotomous variable: percentage of participants showing sufficiency behaviour.

** *N* in the above order: 121, 134, 140, 136, 150, 135 (due to option: 'I don't know').

Table 6. Hierarchical logistic regression model predicting sufficiency behaviour

	<i>b</i>	<i>se</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	<i>odds ratio</i>	<i>Lower 95% CI</i>	<i>Upper 95% CI</i>
Step 1			11.62	2	.003			
Communication condition								
Sufficiency promotion	0.41	0.18	5.24	1	.022	1.51*	1.06	2.14
Consumption promotion	-0.21	0.20	1.12	1	.290	0.81	0.55	1.19
Step 2			10.75	2	.005			
Communication condition								
Sufficiency promotion	0.42	0.18	5.49	1	.019	1.53	1.07	2.18
Consumption promotion	-0.16	0.20	0.69	1	.408	0.85	0.57	1.25
Self-transcendence	0.18	0.07	6.86	1	.009	1.20	1.05	1.37
Self-enhancement	-0.21	0.07	8.80	1	.003	0.81	0.71	0.93
Step 3			4.68	2	.097			
Communication condition								
Sufficiency promotion	-1.94	0.90	4.64	1	.031	0.14	0.02	0.84
Consumption promotion	-0.82	0.94	0.76	1	.385	0.44	0.07	2.79
Self-transcendence	-0.03	0.12	0.05	1	.823	0.97	0.77	1.23
Self-enhancement	-0.20	0.07	7.81	1	.005	0.82*	0.72	0.94
Interaction communication * self-transcendence			7.64	2	.022			
Sufficiency * self-t.	0.45	0.17	7.16	1	.007	1.56*	1.13	2.16
Consumption * self-t.	0.12	0.18	0.48	1	.490	1.13	0.80	1.60

$R_2 = .04$ (Cox–Snell); $.06$ (Nagelkerke). Model $\chi^2(6) = 35.53$, $p < 0.001$.

The mediation model of sufficiency-promoting communication compared to the neutral condition on sufficiency behaviour (H2a – H4a), revealed that effects from sufficiency-promoting communication on sufficiency behaviour were mediated by a lower aspiration level for clothing (Table 7, Figure 3). Sufficiency communication also influenced the personal norm for sufficiency (path a_2 , $\beta = .13$), but this did not translate into more sufficiency behaviour (path b, *n.s.*). The personal norm and aspiration levels were negatively correlated, $\beta = .43$. No mediation effect could be found for the social norm of other social media users. Since logistic regression analysis had shown that consumption-promoting communication had no significant effect on sufficiency behaviour, the mediation model for consumption-promoting communication was equally non-significant (H2-4b), and can be found in Appendix B.

Table 7. Mediation model of sufficiency-promoting communication (as depicted in Figure 1)

	<i>b</i>	<i>se</i>	β	<i>z</i>	<i>p</i>
<i>Path</i>					
a1	0.05	0.06	.04	0.82	.415
a2	0.27	0.09	.13*	3.08	.002
a3	-9.60	1.71	-.25*	-5.63	<.001
b1	-0.10	0.08	-.07	-1.26	.207
b2	0.11	0.06	.11	1.84	.066
b3	-0.01	0.00	-.24*	-3.86	<.001
c	0.13	0.11	.07	1.17	.241
<i>Indirect mediation effects</i>					
Social norm	0.00	0.01	.00	-0.69	.493
Personal norm	0.03	0.02	.01	1.59	.112
Aspiration level	0.12	0.04	.06*	3.13	.002
Total effect	0.28	0.11	.14*	2.49	.013
<i>Covariates</i>					
Social norm - personal norm	0.05	0.03	.06	1.62	.106
Social norm - aspiration level	-1.19	0.63	-.09	-1.90	.058
Personal norm - aspiration level	-8.55	1.01	-.43*	-8.44	<.001

Finally, we addressed the attitude towards sufficiency-promoting communication and its sender. As hypothesised (H7), there was a significant main effect of the communication condition on the attitude towards the communication $F(2) = 42.20$, $p < .001$, partial $\varepsilon^2 = .09$. Contrasts revealed that the attitude towards the sender of sufficiency-promoting communication was more positive than to senders of both neutral communication, $b(SE) = 0.57 (0.10)$, $t = 5.91$, $p < .001$, partial $\varepsilon^2 = .04$ and consumption-promoting communication,

$b(SE) = 0.41 (0.10)$, $t = 4.21$, $p < .001$, partial $\epsilon^2 = .02$. Peer endorsement $F(1) = 0.12$, $p = .724$, and its interaction with communication, $F(2) = 2.15$, $p = .112$, did not have a significant effect. Accordingly, there was a significant main effect of the communication on the attitude towards the sender, $F(2) = 154.92$, $p < .001$, partial $\epsilon^2 = .26$. Contrasts revealed that the attitude towards the sender in the sufficiency-promoting condition was more positive than both the neutral condition, $b(SE) = 0.54 (0.06)$, $t = 8.64$, $p < .001$, partial $\epsilon^2 = .08$ and consumption-promoting condition, $b(SE) = 0.71 (0.06)$, $t = 11.44$, $p < .001$, partial $\epsilon^2 = .13$. However, in this model too, neither peer endorsement $F(1) = 0.14$, $p = .709$, nor its interaction with communication, $F(2) = 0.21$, $p = .812$, had a significant effect.

3.5. Discussion

The laboratory experiment could show that sufficiency-promoting social media communication led to more sufficiency behaviour, a better attitude towards the communication content and towards the company. Sufficiency-promoting communication led to more sufficiency behaviour compared to the other conditions. Including values as covariates revealed that the effect of sufficiency promotion was mainly effective for participants scoring high on self-transcendence values. Mediation analyses further showed that as a short-term effect, a higher aspiration level mediates the relationship between sufficiency-promoting communication and sufficiency coupon choice. Promoting sufficiency did have a positive effect on the personal norm for sufficiency, yet this seemed to be too weak to translate into actual behaviour (this is also given for study 1). An alternative explanation would also be that the effect of personal norm is mediated through a lower aspiration level, although an earlier study on sufficiency also found this lack of connection between personal norm and behaviour (Frick et al, 2020). Consumption-promoting communication, however, did not lead to less sufficiency behaviour compared to the neutral condition. This is in contrast with past research showing the consumption-increasing effects of advertisement (e.g. Hoch et al., 2016; Kasser & Kanner, 2004). Possibly, the neutral condition of the fictional company's communication was not perceived as completely neutral, but may be perceived as advertisement of some sort, as individuals expect companies' primary goal of marketing to be consumption promotion (Stoeckl & Luedicke, 2015). Another possibility to explain this lack of difference is that as consumption-promoting communication predominates in online environments, a habituation effect might be occurring, whereby one consumption-promoting post does not make a difference, whereas sufficiency-promoting communication attracts more attention due to its novel character (Gossen et al., 2019).

Effects are also found regarding the attitude towards communication and its sender. Sufficiency-promoting communication results in more positive attitudes compared to the other conditions, whereas consumption-promoting communication did not cause more negative attitudes. This is in line with previous research on institutional sufficiency-promoting marketing. Accordingly, a message amplifying sufficiency behaviour boosts favourable attitudes towards green demarketing advertising (Reich & Armstrong Soule, 2016) and enhances customers' perceptions of the firm (Ramirez et al., 2017). One possible explanation as to why consumption-promoting communication does not have the opposite, i.e. negative, effect, is the fact that advertising generally tends to trigger positive feelings and causes positive attributions towards the sender. This may also have influenced the perception of the fictional company in our laboratory experiment.

Peer endorsement did not moderate the relationship between communication and any of the dependent variables. One reason for this might be that the fictional posts and comments were perceived as 'fake'. For that matter, also the laboratory setting of the study lacks external validity, because the posts were isolated and not presented in a newsfeed along with other posts, as is common on Instagram. This resulted in less distraction than in a real-world setting. Most previous studies to have found effects of social norms included social information from real peers that participants actually knew. The study at hand conversely showed comments and likes of other social media users that participants did not personally know. Social norms of the more distant peer group of social media users are thus not as effective as social norms transported by close peers.

4. General Discussion

4.1. Summary of both studies

Our research provides insights showing that sufficiency-promoting communication in social media can be effective for enhancing sufficiency behaviour and attitudes. Table 8 provides an overview of hypotheses and respective results.

Table 8. Overview of hypotheses and results

		Study 1	Study 2
H1a	Sufficiency-promoting communication increases sufficiency behaviour compared to a neutral communication condition.	no	yes
H2a	The perceived descriptive social norm mediates the positive impact of sufficiency-promoting communication on sufficiency behaviour.	only path a	no
H3a	The personal norm for sufficiency mediates the positive impact of sufficiency-promoting communication on sufficiency behaviour.	no	only path a
H4a	A decrease of the aspiration level for clothing mediates the positive impact of sufficiency-promoting communication on sufficiency behaviour.	only path b	yes
H5a	Peer endorsement moderates the positive impact of sufficiency-promoting communication on sufficiency behaviour.		no
H1b-5b	Effects for consumption-promoting communication		no
H6	Individuals with high self-transcendence values show higher sufficiency behaviour, whereas individuals with high self-enhancement values show lower sufficiency behaviour		yes
H7a, b	Sufficiency-promoting communication leads to a more positive attitude towards the communication and sender than neutral communication (a) and consumption-promoting communication (b).		yes

In the field experiment, all participants reduced their consumption level of clothing, regardless of whether or not they had seen the intervention. From this, we assume that either the engagement with the questionnaire itself (especially among individuals with a high interest in sustainability) could evoke behaviour change towards sufficiency, or that cycles in clothing consumption are longer than a month. Yet we deem the result noteworthy, as it shows the limitations of social media when it comes to behaviour change. By eliminating the methodological weaknesses of the field experiment, the laboratory experiment showed significant short-term effects of sufficiency-promoting communication on sufficiency behaviour and attitudes towards the communication and its sender. Participants were 1.5 times more likely to choose a sufficiency-oriented coupon, and rated the communication and its sender more positive than in a neutral condition. Interestingly, this effect was apparent, mainly for participants with high self-transcendence values, replicating past research that

often finds communication-based interventions to be most effective for target groups who are already engaged in the topic.

Although the effect size was rather small, it is still worth noting that the short-term effect of sufficiency-promoting communication was as equally influential as the universal values of self-transcendence or self-enhancement. From this, we draw two implications: First, the short-term effects unleash their potential when the intervention is timed shortly before a relevant consumption decision (e.g. before customers of an online shop move to the cashier). As a practical implication, sufficiency-promoting communication would be a valuable strategy as a sufficiency nudge (Thaler & Sunstein, 2008). Secondly, as we found short-term effects, it would seem viable that long-term effects also may occur. Although single social media posts seem to be too weak as an intervention (as was also found by Young et al., 2017), it remains to be explored in more depth whether more repeated exposure to sufficiency cues from several sources has an effect.

The laboratory study 2 showed a mediation effect: Sufficiency-promoting communication changes the self-reported aspiration level in the short-term, which then influences sufficiency behaviour. In the field experiment, the relationship between the aspiration and consumption level was also present. Yet, no changes could be detected for the mediator social norm for sufficiency in both studies, and only a tendency was found for the personal norm for sufficiency in study 2.

The interventions in both studies included sufficiency-promoting messages addressing normative motives (Joanes et al., 2020) and hedonistic motives (Herziger et al., 2020). Apparently, these messages had an effect only in the laboratory setting. The sufficiency-promoting communication may have activated normative motives, as it was found that activating normative goals at the same time weakens hedonistic consumption motives (Maio et al., 2009). Also, finding the aspiration level to be a strong mediator shows the potential for environmental psychology to gain more knowledge on behavioural determinants by examining factors of unsustainable behaviour (Thøgersen, 2014). Whereas normative determinants and intentions in favour of pro-environmental behaviour have been thoroughly studied (e.g. Schwartz, 1977; Stern et al., 1999), gain and hedonistic motives that hinder pro-environmental behaviour are less often included in empirical studies (Thøgersen, 2014). As well as strengthening personal norms and pro-environmental values, attenuating hedonistic motives, such as aspiration levels, materialism, or fashion consciousness, may be a viable strategy to increase well-being and foster a sufficiency-oriented lifestyle (e.g. Geiger & Keller, 2018).

Peer endorsement by users of the respective social media platform did not influence sufficiency behaviour. The perceived norms within this group did not have a significant effect on sufficiency behaviour. We conclude that expectations on how social media may be able to change behaviour through social norms (e.g. Ballew et al., 2015; Goldsmith & Goldsmith, 2011) might have to be readjusted. Prior research exposed that the actions of others can influence behaviour (e.g. Bond et al., 2012) and that social norms are most effective when the influencing individuals are personally known in real life (Abrahamse & Steg, 2013). Perceiving peer endorsement from one's own social network has been found to be more influential than that from unknown people (Senbel et al., 2014). Since our research shows little effect, this supports the assumption that familiarity and identification with the peer group is key. Fellow customers or social media users apparently do not fulfil this precondition. From the perspective of companies or organisations, social media platforms might thus be considered more as a platform for advertisement than for engagement with their target groups, unless their followers are in more in-depth exchange with each other (as for example in closed social media groups).

Nonetheless, companies can profit from their communicational effort to support sufficiency behaviour. Our research showed that attitudes towards the communication and its sender are positive after receiving a sufficiency-promoting intervention. This supports the results of other studies that emphasise the beneficial effects of sufficiency-promoting marketing on the reputation and credibility of the respective company (Reich & Armstrong Soule, 2016; Ramirez et al., 2017).

From our analysis, we conclude that for the challenge to support sufficiency behaviour through communication in social media it is advisable to use explicit wording, to repeat the message continuously and to address normative motives in the communication. If companies take this into account when designing their online communication, positive short-term effects on sufficiency behaviour can be achieved. In order to reach a profound change in behaviour towards sustainability, however, the suitability of social media is questionable.

4.2. Strengths and weaknesses of the studies

The combination of a field experiment with a laboratory experiment can be seen as a strength of this study. It was chosen to provide both internal and external validity and both short- and long-term effect testing. Whereas the field experiment provided valuable practical insights, the laboratory experiment allowed us to adopt best practice strategies such as full randomisation and ethical approval. Further, the studies have behavioural outcome variables, which have been called for to enhance environmental psychology studies (Kormos & Gifford,

2014): In study 2, actual behaviour could be measured. The consumption level in study 1, although it is self-reported, has the advantage of being measured differently to Likert-scale measures. Further, it is expected to be prone only to memory bias, which affects both times of measurement equally, holding a possible bias constant. A further insight resulting from the study is that the time span is important if consumption levels are to be a valid measure of sufficiency behaviour. For clothing consumption, a month may not be representative.

Both approaches, however, also had their restrictions. We encountered a number of practicability issues of the transdisciplinary approach of conducting a field experiment together with an existing online shop. These included the selective convenience sample, the quasi-experimental assignment to conditions, poor control over the communication during the intervention and the limited number of research questions that could be answered. At the same time, we gained practical and methodological insights on the design, dissemination and evaluation of sufficiency-promoting communication, which we find has practical implications and is valuable for the research community. Since the laboratory experiment presented social media posts out of the usual context of an Instagram newsfeed it may lack of a realistic appearance. Further, given the hypothetical nature of the company, it is not completely clear whether individuals would react in accordance with our findings in situations with real brands, which bring a plethora of brand associations and histories.

Another challenge was the operationalisation of the concept behind sufficiency behaviour. In the field experiment, we equated clothing sufficiency behaviour with the reported number of purchased items. Thus, we applied a broad understanding of the concept, which included reduced clothing consumption, but also alternative forms of consumption that help to decrease purchases of new products (e.g. sharing or second hand purchases). Yet in the laboratory setting, a behavioural measurement fit for short-term effects had to be found. It was important that the dependent variable measures actual behaviour, and not just intentions or attitudes. To address this, we used a coupon choice with the downside that ‘consumption reduction’ could not be promoted as an option to choose. Thus, participants could opt for donating to a clothing-related NGO or choose a voucher for a second-hand marketplace.

4.3. Future research

Implications for future research firstly relate to the question of how sufficiency-promoting communication has to be designed in order to have long-term effects on sufficiency behaviour. Due to social media posts being presented in the context of a laboratory experiment, the effect should be replicated in another study, for example by integrating the communication posts in participants’ newsfeeds. Because of the fictional

sender and the related limitations, it would add support to test findings with existing companies and real social media communication. Future research should also consider the timing and nature of the sufficiency-promoting message, for instance if more concrete links would be more effective than more abstract ones (Peifer et al., 2020). Also, the laboratory experiment revealed that both the personal norm as a normative motive and aspiration level as a hedonic motive influence sufficiency behaviour. Thus, not only pro-environmental motives, but also motives that might pose a barrier towards sustainable consumption should be examined in environmental psychology research. Our research showed that peer endorsement through comments and likes of other social media users not personally known by participants does not influence sufficiency behaviour. To find out more on this issue, future research could compare social norms from known peers with that of unknown people in a real-world scenario. Another research direction would be to investigate other influential factors from the perspective of environmental psychology that may moderate the effects of sufficiency-promoting communication.

Since our findings imply that single-post interventions are too weak to change behaviour, further studies are needed to find out more about the possible long-term effects of social media communication. It is of great interest to reinvestigate the effects of social media interventions with field experiments including a representative sample, randomized group allocation and a more intense intervention with communication clearly asking participants both to reduce consumption, and to do so repeatedly. Also, the laboratory testing of other peer groups that may transfer pro-environmental social norms offers an interesting path for future research.

Examining other sufficiency fields prevalent in online environments, for example plant-based nutrition or the avoidance of air travel, could be promising. Also, the effectiveness might vary, depending on the sender of the communication. Although we could not find reactance to possible greenwashing in the sample with a fictional company, differences could be tested between actual companies with varying sustainability reputations, and also non-governmental or governmental organisations.

Last, our research did not investigate marketing techniques such as personalisation based on the evaluation of personal data from social media, user profiles and community forums. Considering the increasing importance of micro-targeting, on- and offline tracking, big data evaluations and personalised advertising compared to traditional advertising formats (Dinner et al., 2014), their importance for sufficiency-promoting communication will most likely grow as well. As study 2 showed sufficiency-promoting communication to be most

effective for people already interested in the topic, personalisation may target these groups. At the same time, people with low pro-environmental values may show even less sufficiency over time, when only confronted with conventional marketing content. There is a need for further research in this area.

4.4. Conclusion

Our research reported herein demonstrated that sufficiency-promoting communication in social media can be successful in increasing sufficiency behaviour in the short-term. Companies can also benefit from their sufficiency efforts, as customers' attitudes towards social media communication and its sender are mostly positive.

For establishing social norms for sufficiency, our attempts to boost the effect through the endorsement of distant peer groups, such as fellow customers or social media users, proved to be non-effective. This possibly dampens the hope that is often articulated, that social media is a tool for behaviour change. It seems that personal contact with personally known peers is still a necessary precondition for social norms to have an effect.

With this research, we contribute to a better understanding of the opportunities and pitfalls of sufficiency-promoting communication. Finding positive short-term effects of sufficiency promotion raises hopes: On one hand, companies are able to be actors of change. On the other hand, online communication fostering sufficiency may actually make lower consumption be perceived as being better for people and the environment in the future.

Appendix A

Items of Study 1

Sufficiency behaviour, consumption level (T1, T3):

We would like to know in which way you acquired clothing for yourself during the last four weeks.

Please estimate the amount of clothes for each. All wearable textiles should be included, e.g. shirts, pullovers, pants, jackets, underwear or socks (1 pair counts as 1 piece of clothing).

	0 clothing items	1	2	3	4	5	6 or more clothing items
Local shop (e.g. department store, chain store)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online shop (e.g. Zalando, Tchibo, Otto, Avocadostore, other shops or online brands)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Social norm for sufficiency (T1, T2):

Customers of the online shop...

... buy new clothes regularly. (recoded)

... only buy clothes if they really need them.

... try to keep the number of new purchases of clothing low.

... repair their clothes or have them repaired when they are torn, instead of buying new ones.

... treat their clothes with care, so that they last longer.

Personal norm for sufficiency (T1, T2):

I feel obliged to only buy new clothes when I really need them.

My own values tell me that it is wrong to buy unnecessary clothing.

It would give me a bad conscience to buy a new piece of clothing, despite having enough clothes in my cupboard already.

Aspiration level (T1, T2):

Given limitless availability of money and time, how many pieces of clothing would you prefer to buy for yourself annually?

no clothing items

1-5

6-10

... in steps of 5

55-60

more than 60

And how many pieces of clothing would you need to buy annually for your well-being not to be restricted?

Here, we would like you to give an estimation on how many pieces of clothing you would need to buy in order for your well-being not to be restricted.

- 1-5
- 6-10
- ... in steps of 5
- 55-60
- more than 60
- clothing is not relevant for my well-being
- I would prefer not to buy any clothes at all

Environmental awareness (T1, Geiger 2019):

I am happy about initiatives which promote sustainable ways of living (e.g. ecovillages, slowfood-movement).

It makes me angry when I see that Germany misses its goals for climate protection.

More environmental protection means improved quality of life and health for everyone.

There are natural limits of growth which our industrialised world has already reached.

Every individual has a responsibility for ensuring a habitable environment for subsequent generations.

We have to find ways to live well independently of economic growth.

I buy ecologically cultivated foods.

When shopping, I choose products with eco-labels (e.g. blauer Engel, EU organic label or EU eco-label).

For my daily travel, I use the bike, public transport or I walk.

Cued recall of intervention (T1):

Did you perceive the communication on the topic „Less is more“?

Please tick the box, if you saw the following:

[Screenshots of Social media posts and newsletter]

- No Yes, once Yes, twice Yes, more than twice

Additional items in Study 2

Sufficiency behaviour:

Within this survey a raffle of 10 vouchers worth 10 EUR each will be held.

If you win in the raffle, which of the following vouchers worth 10 Euros each would you like to receive. The raffle will take place within the next 4 weeks.

- 10 EUR donation to getchanged.net
You will not receive a voucher personally; instead the amount will be donated to Get Changed - The Fair Fashion Network. This non-profit organization promotes fair and ecological clothing production.
- 10 EUR voucher from H&M
H&M is a clothing store where you can find a wide range of fashionable clothing online or in a branch near you.
- 10 EUR voucher from C&A
C&A is a clothing store where you can find a wide range of fashionable clothing online or in a branch near you.

- 10 EUR voucher from kleiderkreisel.de
At Kleiderkreisel.de you can buy second-hand clothes from other users and you can also resell your own used clothes.
- I don't want to participate in this raffle

Social norm for sufficiency:

Most Instagram users...

- ... buy new clothes regularly.(recoded)
- ... Wear clothes of the newest fashion. (recoded)
- ... search for clothing online or in stores for fun. (recoded)
- ... only buy clothes if they really need them.
- ... treat their clothes with care, so they will be longlasting.
- ... repair their clothes or have them repaired when they are torn.
- ... pay attention to longevity when buying clothes.
- ... buy clothes second-hand instead of new.

Attitude towards communication:

- ... appeals to me.
- ... is annoying. (recoded)
- ... is attractive.
- ... is easy to understand.
- ... is informative.

Attitude towards the sender used (Armstrong Soule & Reich, 2015):

What do you think of the organisation „Clothing Company“ on the basis of their instagram appearance? The organisation...

- ... is trying to increase their profit. (-)
- ... is trying to win new clients. (-)
- ... is trying to please existing customers. (-)
- ... feels morally obliged to help the environment.
- ... is trying to give something back to the community.
- ... honestly cares for the well-being of the environment.
- ... is trying to present their products as more attractive, in order to set higher prices. (-)
- ... is using the green trend to increase takings. (-)
- ... does not really care about the environment. (-)

The full survey of study 2 can be found in the supplementary material. The universal values scale can be found with Steg et al. (2012).

Appendix B

Table 8. Mediation for consumption-promoting communication

	<i>b</i>	<i>se</i>	<i>z</i>	β	<i>p</i>
<i>Path</i>					
a1	-0.03	0.06	-0.62	-.03	.538
a2	0.08	0.09	0.84	.04	.399
a3	-0.14	1.86	-0.08	.00	.938
b1	-0.02	0.10	-0.15	-.01	.879
b2	0.09	0.07	1.32	.10	.187
b3	-0.01	0.00	-2.34	-.16*	.019
c	-0.16	0.12	-1.32	-.08	.187
<i>Indirect mediation effects</i>					
Social norm	0.00	0.00	0.15	<.01	.882
Personal norm	0.01	0.01	0.71	<.01	.479
Aspiration level	0.00	0.01	0.08	<.01	.938
total	-0.15	0.12	-1.23	-.07	.217
<i>Covariates</i>					
Social norm - personal norm	0.08	0.03	2.63	.11	.008
Social norm - aspiration level	-1.37	0.64	-2.14	-.10	.032
Personal norm - aspiration level	-10.65	1.35	-7.88	-.46	<.001

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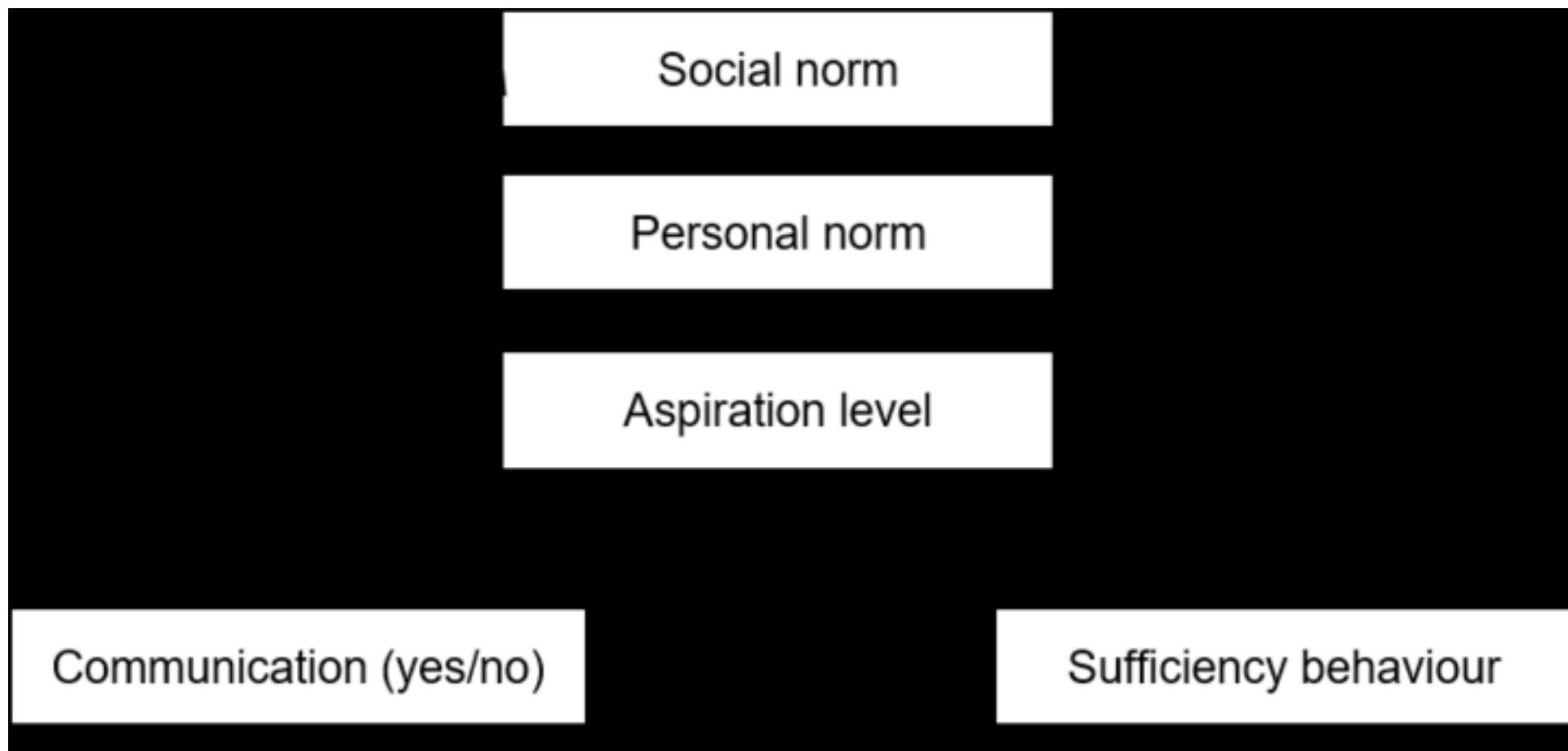
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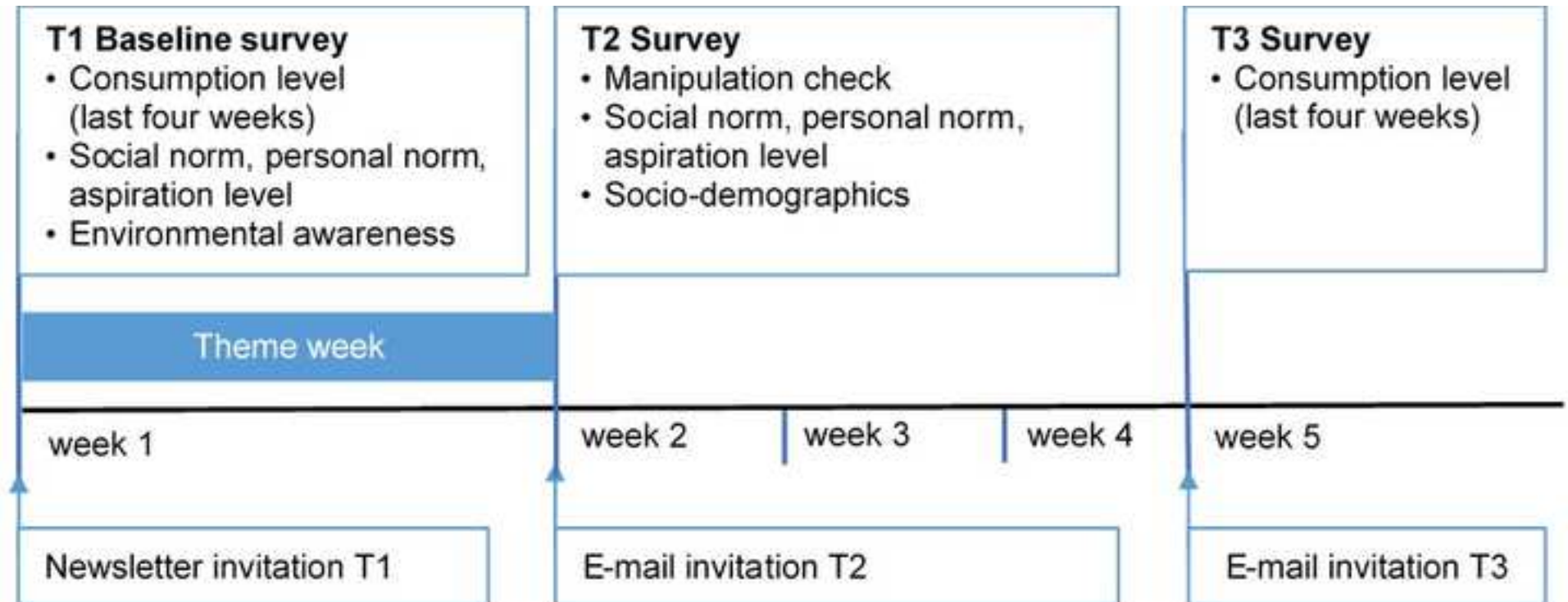
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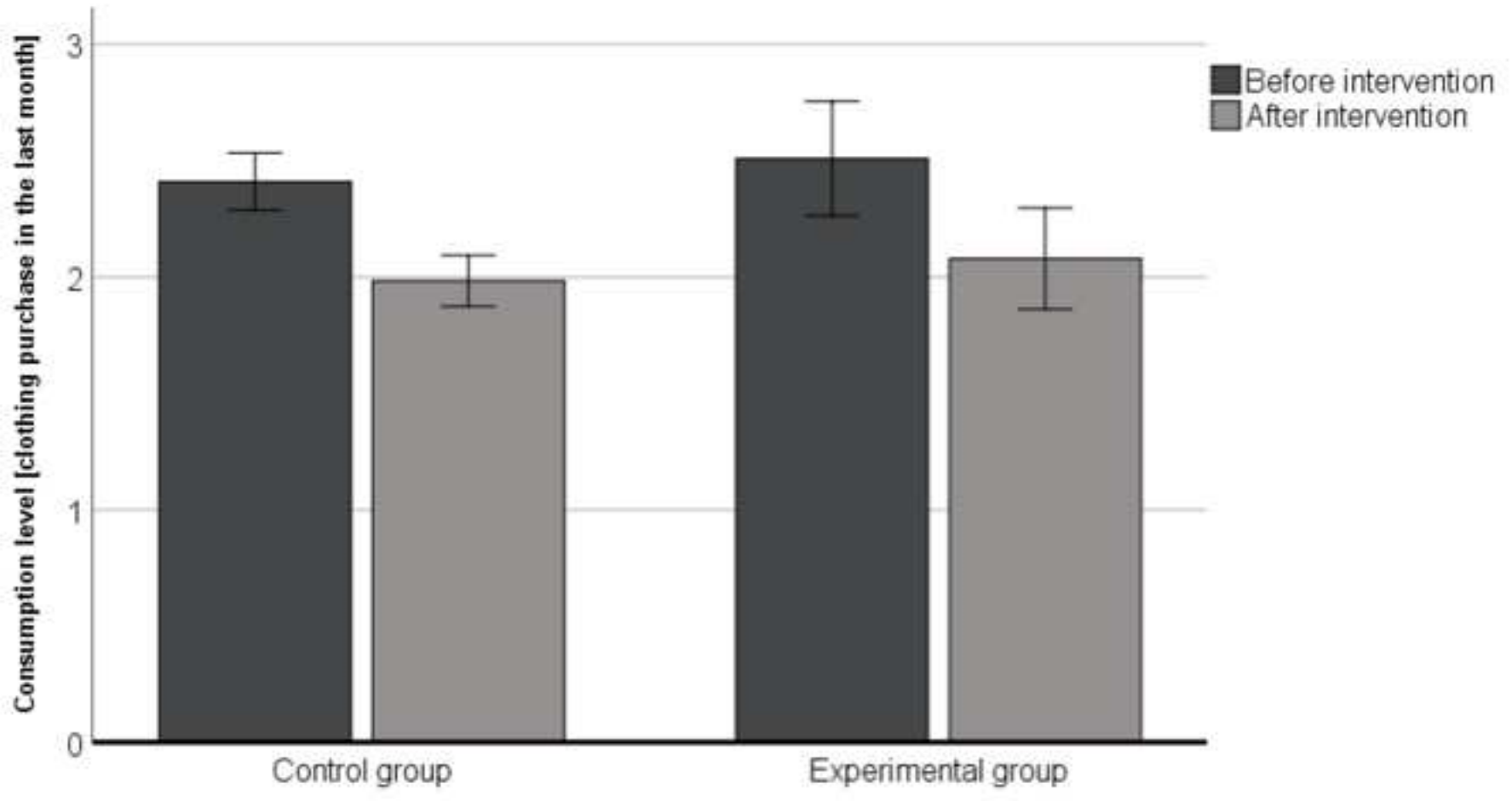
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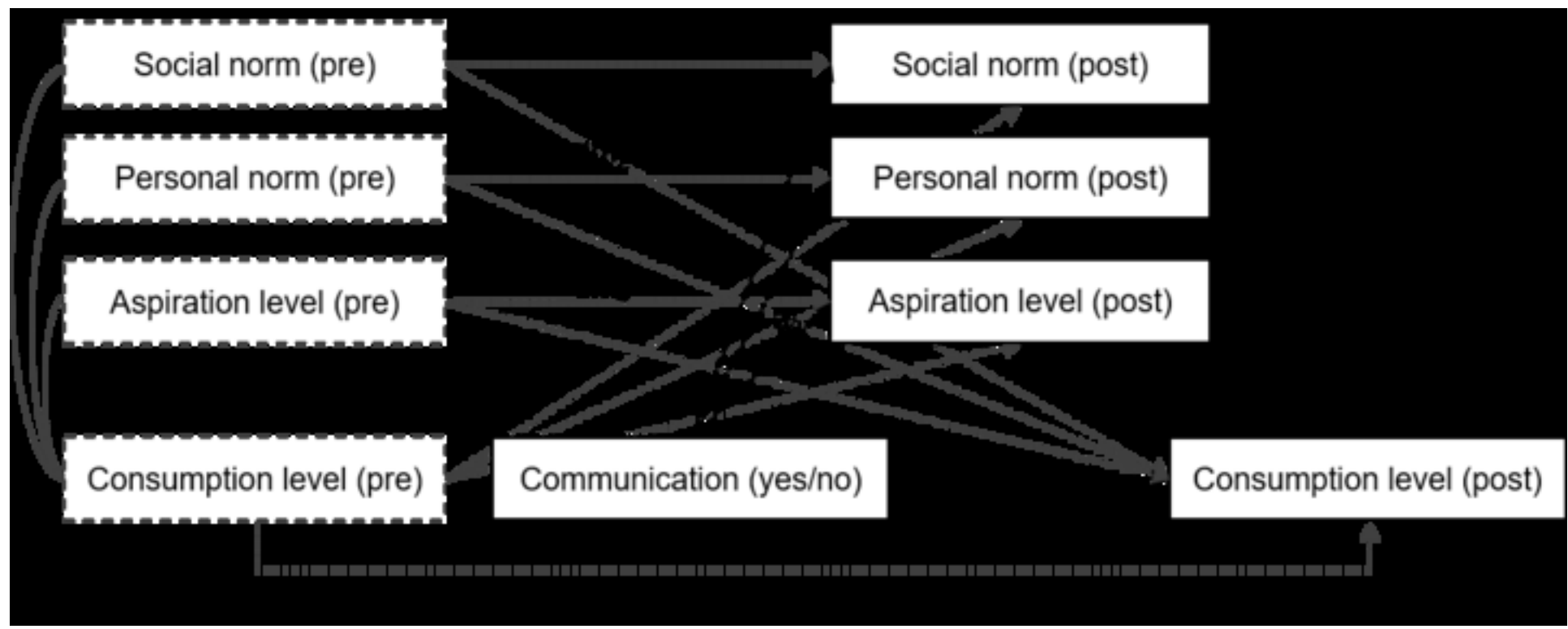
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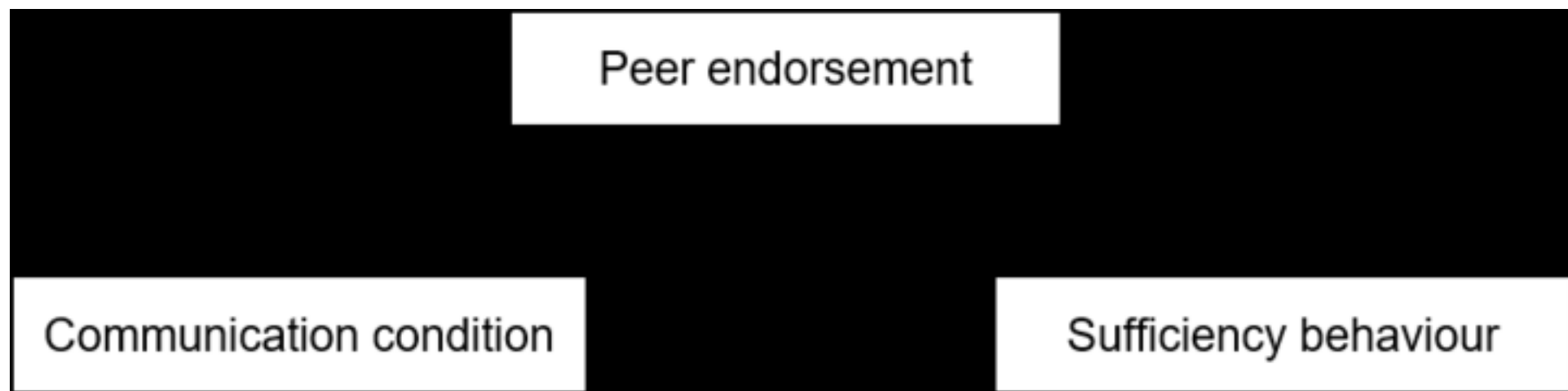
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Clothing Company



Jeans kaputt? Reparieren ist ganz leicht.



Clothing Company Deine Lieblingsjeans hat ein Loch, und dabei sitzt sie doch perfekt? Macht nix... Wir zeigen dir hier, wie du sie ganz einfach reparieren kannst. Du hast keine Zeit oder kein Talent zum Selberreparieren? Wir helfen dir, einen Reparaturservice in deiner Umgebung zu finden. So musst du deine Lieblingsjeans nicht aussortieren und eine neue kaufen, sondern kannst sie noch so lange tragen, bis sie dir vom Leibe fällt. 📍 #Lieblingsjeans #Reparieren #DIY #slowfashion #bisesmirvomleibefällt #upcyclingfashion

15. Februar

Clothing Company



Jeans – passen einfach immer.



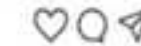
Clothing Company Wir sind Fans vom Allrounder „Jeans“! Welches andere Kleidungsstück ist schon so vielfältig einsetzbar? Hier zwei Exemplare aus unserem Shop, von vorne und von hinten. 📍 #Jeans

15. Februar

Clothing Company



Jeans kaputt? Kauf dir eine neue.



Clothing Company Deine Lieblingsjeans hat ein Loch, und dabei sitzt sie doch perfekt? Macht nix... Kauf dir eine neue! Wir haben heute neue superbequeme Exemplare in vielen unterschiedlichen Styles und Schnitten reinbekommen. Da ist der Stil und die perfekte Passform für jede und jeden dabei! 📍 Zu unserem Shop geht's über den Link in der Bio. #Lieblingsjeans #Shoppen #GönndirwasNeues

15. Februar



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Supplementary Material

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