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The expressive function of legal norms: Experimental evidence from the Supply Chain Act in Germany

February 2025

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The expressive function of legal norms: Experimental evidence from the Supply Chain Act in Germany

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Abstract

Legal norms can have a direct effect on individual behavior through their legal enforcement. However, according to the 'expressive function of law,' they can also have indirect effects on individual behavior by shaping related social norms. Since evidence for this expressive function is scarce, we consider a new law on corporate due diligence for the protection of human rights and the environment (i.e. the German Supply Chain Act) and empirically examine its indirect effects on individual sustainable purchasing behavior, as indicated by the willingness to pay (WTP) for sustainable socks, where sustainability is ensured by the certification with a label of the Fair Wear Foundation. The empirical analysis is based on data from a pre-registered and incentivized experiment implemented in a representative survey of 1,017 citizens in Germany. Before making socks purchasing decisions and the elicitation of related personal injunctive and perceived social norms, the respondents were randomly assigned to either a control group or a treatment group that received information about the German Supply Chain Act. We examine average treatment effects and, based on a causal mediation analysis, the mediating role of related personal injunctive and perceived social norms on individual sustainable purchasing behavior. A manipulation check shows that the treatment information has a significantly positive effect on individual knowledge about the objectives of the German Supply Chain Act. However, the treatment information has no significant effect on the WTP for sustainable socks with the Fair Wear Foundation label or on related norms. Although our mediation analysis reveals that personal injunctive and perceived social norms are significantly positively correlated with this WTP, our experimental analysis does not provide any evidence for the expressive function of law in the case of the German Supply Chain Act and individual sustainable purchasing behavior.

Keywords

Legal norms; Personal injunctive norm; Perceived social norms; German Supply Chain Act; Individual sustainable purchasing behavior

JEL classification

D91; K38; Q58

1. Introduction

Legal norms can have direct effects on individual behavior through their legal enforcement, i.e. through measures set by law (e.g. legal sanctions or rewards). According to the 'expressive function of law' (e.g. Sunstein, 1996), legal norms can also indirectly affect individual behavior by shaping related social norms (see also e.g. Cooter, 1998, 2000; McAdams, 2000, 2015; Bénabou and Tirole, 2011; Wittlin, 2011; Acemoglu and Jackson, 2017). This expressive effect can occur due to a 'signaling mechanism' according to which laws can signal information about the beliefs of lawmakers regarding what should be considered appropriate or desirable (e.g. McAdams, 2015). On this basis, individuals can update prior beliefs about social norms, which can affect their behavior (see also e.g. McAdams, 2000; Bénabou and Tirole, 2011; Larcom et al., 2019; Lane et al., 2023).

However, empirical evidence for the expressive effects of legal norms on individual behavior is scarce as isolating these effects is challenging. By their nature, laws restrict individual freedom of choice, or more specifically, they change the incentive structure significantly through deterrence or incentivization (e.g. Funk, 2007). Isolating the expressive effects of a legal norm empirically requires a law that is in force but does not directly interfere with individual choice options. Moreover, it is also challenging to isolate the effects of laws on social norms. Identifying the direction of causality between laws and social norms is particularly difficult since they can develop simultaneously and are often jointly explained by the same factors (for an excellent discussion, see e.g. Lane et al., 2023).

In this paper, we isolate the expressive effect of a legal norm on both individual sustainable purchasing behavior and related personal injunctive and perceived social norms by considering a new law on corporate due diligence in Germany, the so-called Supply Chain Act, that entered into force in 2023. At that time, the law only applied to companies with at least 3,000 employees (in 2024 this has changed in Germany to companies with at least 1,000 employees). By demanding corporate obligations to provide detailed documentation, the law aims to foster the protection of human rights and the environment along entire supply chains and signals to individuals the belief of lawmakers about the importance of protecting human rights and the environment throughout the supply chains of a company. However, and key to empirically isolating the expressive function of a legal norm, the law has no direct effect on individual purchasing behavior.

To analyze how such a signal affects individual sustainable purchasing behavior and related personal injunctive and perceived social norms, we conducted a pre-registered, incentivized

online experiment among 1,017 citizens in Germany between July and August 2023. We randomly assigned the respondents either to a control group or to a treatment group that received information about the German Supply Chain Act and its objectives. The treatment group learned that there are legal efforts to protect human rights and the environment along the supply chains of companies, which signals the importance of the corresponding topic for the government. In the subsequent phase of the experiment, we elicited the willingness to pay (WTP) for sustainable textiles, i.e. socks. Importantly, in our experiment, we only offered socks from companies with less than 3,000 employees, i.e. companies to which the German Supply Chain Act does not apply. As a result, the sustainability of the socks was not ensured by law, allowing individuals to continue purchasing both sustainable and less sustainable socks. Thus, the discontinuity of the law at 3,000 employees allows us to analyze the signaling effect of the law to promote the purchase of sustainable socks, without the law directly intervening in individual purchasing behavior.

All respondents had to choose between two socks options, i.e. sustainable socks and less sustainable socks. Sustainability is ensured by the certification with a label of the Fair Wear Foundation, which is an organization that works to improve social conditions along textile supply chains (e.g. Fair Wear Foundation, 2024). To capture the WTP for sustainable socks with the Fair Wear Foundation label compared to less sustainable socks without the Fair Wear Foundation label, we used a multiple price list mechanism (e.g. Andersen et al., 2006). As the two sock options are identical except for the certification with the Fair Wear Foundation label, we measure with our approach the WTP for the label in the context of socks. We incentivized the individual purchasing behavior in the experiment to ensure that the choices are consequential and that the results can be generalized to real-life behavior (e.g. Panzone et al., 2021).

In the empirical analysis, we focus on the difference in the WTP for the Fair Wear Foundation label between the control and treatment groups. A significant average treatment effect, i.e. a significant difference in the WTP, would be an indication for the expressive effect of the German Supply Chain Act on individual sustainable purchasing behavior, i.e. on the purchase of sustainable socks with the Fair Wear Foundation label, since the purchase of socks is not restricted by the law. In addition, we used incentivized experimental techniques such as the quadratic scoring rule (e.g. Brier, 1950) to examine whether information about the German Supply Chain Act affects norms related to purchasing sustainable socks.

Based on the conceptual framework of Dannenberg et al. (2024), we distinguish between three different types of related norms, namely personal injunctive norms (i.e. what is considered as appropriate to pay for the Fair Wear Foundation label), perceived social injunctive norms (what is perceived that others consider appropriate to pay for the label), and perceived social descriptive norms (i.e. what is perceived that others are actually paying for the label). We examine average treatment effects on these three related norms. To complete the analysis of the expressive effect of the German Supply Chain Act on the purchase of sustainable socks, we finally also examine the mediating role of these norms based on a causal mediation analysis.

In a manipulation check, we find that our information treatment has a significantly positive effect on individual knowledge about the German Supply Chain Act and its objectives. However, we find no significant effect of the treatment on the WTP for the Fair Wear Foundation label in the context of socks. We also find no significant treatment effect on the personal injunctive norm, the perceived social injunctive norm, and the perceived social descriptive norm. In addition, while the related personal injunctive and perceived social norms are significantly positively correlated with the WTP for the Fair Wear Foundation label, our causal mediation analysis does not suggest their mediating role on individual sustainable purchasing behavior. Therefore, our experimental analysis does not provide any evidence for the expressive function of law in the case of the German Supply Chain Act and individual sustainable purchasing behavior.

Our main contribution to the literature is fourfold. First, we contribute to the empirical and experimental literature on expressive effects of legal norms on individual behavior. Our specific experimental approach allows us to isolate the expressive effect by utilizing the firm size threshold of the German Supply Chain Act to identify the effects of this legal norm on individual sustainable purchasing behavior that go beyond legal enforcement since the participants in our survey experiment made purchasing decisions from companies not affected by the law. In line with previous field experiments (e.g. Fellner et al., 2013; Pruckner and Sausgruber, 2013), our experiment was also based on a randomized controlled trial, which ensures the analysis of causal effects of information about legal norms on individual sustainable purchasing behavior and related personal injunctive and perceived social norms. We thus complement the study of Larcom et al. (2019), which exploits differences in the timing of the introduction of plastic bag fees in different regions of the United Kingdom to examine its effect on individual stated plastic bag use.

Second, our empirical analysis is based on a highly rigorous methodological approach. Lane et al. (2023) indicate that a rigorous empirical or experimental analysis of expressive effects of legal norms on individual behavior requires the consideration of both individual behavior and related social norms. Based on a thorough identification strategy, Lane et al. (2023) themselves show empirical evidence on the effects of legal thresholds on individual perceptions of appropriate behavior below and above the threshold, i.e. on perceived social injunctive norms. We take up this approach by also examining the effect of a legal norm on social norms but additionally examine the effect of the legal norm on individual behavior such as in Galbiati et al. (2021) or Casoria et al. (2021). In particular, we address the rigorous identification of the expressive function of legal norms in our empirical analysis by employing a causal mediation analysis, as also indicated by Lane et al. (2023). This approach allows us to explicitly identify a possible mediating role of norms for individual behavior and complements our experimental approach with an appropriate empirical technique.

Third, we shed light on various types of norms as suggested in the theoretical framework of Dannenberg et al. (2024). As aforementioned, Lane et al. (2023) particularly discuss the perceived appropriateness of behavior, i.e. perceived social injunctive norms, as a possible mediator of the effects of legal norms on individual behavior. While we also address perceived social injunctive norms, we additionally consider personal injunctive norms and perceived social descriptive norms. The distinction between different types of norms enables us to disentangle the possible mediating role of norms for individual behavior, i.e. whether the expressive function of legal norms can be attributed to individual adjustments in considerations about appropriate behavior (i.e. changes in personal injunctive norms) or to individual adjustments in perceived social injunctive norms) or what others actually do (i.e. changes in perceived social descriptive norms).

Fourth, by analyzing the German Supply Chain Act, we consider a legal norm that is highly controversially discussed in the European Union (EU) including Germany. While the law is based on a compromise between the protection of human rights and limited burden of companies with the new due diligence obligations, it is nevertheless still heavily criticized, for example, by companies and company representatives due to its high administrative costs for companies and by human rights and environmental organizations due its limited direct effect on the protection of human rights and the environment in supply chains. The latter criticism in particular makes the Supply Chain Act interesting for an analysis of its signaling effect and thus

its indirect effects on individual sustainable purchasing behavior. Therefore, our empirical analysis complements the overall picture of the effectiveness of the German Supply Chain Act, which can work not only through its legal enforcement but also through its expressive effects. By specifically considering socks purchasing decisions, we address the textile industry as a main area of application for the Supply Chain Act. While the textile industry is highly globalized and makes an important contribution to the global economy, its supply chains are often not transparent (e.g. Bhaduri and Ha-Brookshire, 2011). In particular, human rights violations (e.g. inadequate wages, poor working conditions, child labor, modern slavery) and environmental degradation are widespread in this sector (e.g. European Parliament, 2021; UNICEF, 2021; ILO, 2022; Human Rights Watch, 2023).

2. Empirical approach

2.1. Selection of a legal norm and measurement of individual sustainable purchasing behavior

We chose the German Supply Chain Act to empirically analyze the expressive function of laws for two main reasons. First, the policymaker's intention of the law is clearly recognizable, which is a prerequisite for laws to fulfill an expressive function (e.g. Bénabou and Tirole, 2011). The German Supply Chain Act of 2023 obliges companies with more than 3,000 employees to comply with due diligence. Among other things, companies must conduct regular risk analyses, are obliged to provide detailed documentation, establish a complaints procedure, and take corrective action. Non-compliers can be sanctioned financially and excluded from public tenders for up to three years. Thus, the intention of the lawmaker is unequivocal: To promote sustainable products by protecting human rights and creating more transparency along supply chains.

Second, our experimental approach requires that the legal norm is not yet widely known, allowing our treatment to provide respondents with new information (e.g. Haaland et al., 2023). The German Supply Chain Act entered into force in January 2023 and the first complaint under the Act was filed in November 2023 (and thus after completing our data collection in August 2023).¹ Therefore, we likely provided individuals with some information about the law that was new to them.² Finally, the discontinuity of the law at 3,000 employees by the time of conducting

¹ The first complaint was filed by an alliance of NGOs and other organizations (e.g. Oxfam, Misereor), who raised concerns about poor working conditions on fruit farms (poverty wages and employees being forced to work, while plantations were sprayed with toxic pesticides) in the supply chain of the supermarket chains Edeka and Rewe. The accused firms deny all accusations, pointing to quality seals of purchased goods.

² In a parallel survey, which will be explained in the next section, conducted at the same time and with a similar sample as the one analyzed in this paper, we asked participants to report their knowledge of the German Supply

the survey makes it possible to analyze individual purchasing behavior while a law is in force that promotes sustainable products without interfering with what choices individuals can make. Specifically, individuals can still purchase both sustainable and less sustainable socks.

In addition to the selection of a suitable law, the choice of a specific area of consumption and the way of measuring sustainability are also crucial questions of the empirical approach. In our experiment, we focus on the textile industry, because, on the one hand, human rights violations, as well as exploitative and unfair labor conditions have been found in all stages of the production process (e.g. European Parliament, 2021; UNICEF, 2021; ILO, 2022; Human Rights Watch, 2023). On the other hand, there are already some established ways to identify products that are produced under humane conditions (e.g. through labels). Thus, individuals can directly make a change towards more social sustainability through their purchasing decisions. Specifically, we designed our experiment with socks, as they are some of the most commonly owned clothing pieces. Many people have bought socks before and thus are familiar with prices and other attributes. Moreover, socks are commonly used by all genders, they are relatively uniform in cut, and they have been used in experiments before (e.g. Prasad et al., 2004). Consequently, we expect respondents to accurately assess their WTP, thereby reducing measurement errors (e.g. Haaland et al., 2023).

In our experiment, we used the Fair Wear Foundation label to indicate sustainable socks. The Fair Wear Foundation is an established multi-stakeholder organization. It works with garment brands, garment workers, and industry influencers, to improve social conditions along the textile supply chains and to regulate compliance with labor and social standards, such as fair wages, regulated working hours, and human rights (e.g. Fair Wear Foundation, 2024). As the Fair Wear Foundation label and the German Supply Chain Act are both based on the fundamental standards of the International Labour Organization, they follow the same core objectives.

2.2 Survey

The data for our empirical analysis was collected as one out of two online surveys that were carried out in July and August 2023 in collaboration with the professional market research institute Psyma+Consulting GmbH (Psyma) in Germany. Psyma was responsible for programming the questionnaires, conducting the online surveys, and recruiting respondents via

Chain Act. The share of respondents indicated knowing the Supply Chain Act was 33% in this other survey, with only 8% assessing their knowledge of the law as 'rather high' or 'very high.'

its online panel. To make the samples as representative as possible of citizens in Germany aged 18 and over, the sample was stratified by age, gender, and the federal state of main residence. The stratification was based on quotas that were representative of the general population in Germany.

Psyma also carried out quality checks on all completed questionnaires (e.g., to screen out participants with systematic response patterns). Overall, 29,587 invitations were sent to more than 300,000 panelists, of which around 12% started a survey (including screenouts and dropouts). Of the 3,569 respondents who started one of the surveys, more than half were excluded due to screenouts or full quotas, and around 6% were excluded because they abandoned the survey. This resulted in a completion rate of about 43% and a sample of 1,524 respondents for both surveys. While 507 respondents were randomly assigned to the other survey (that included a stated choice experiment to analyze individual preferences for different designs of Supply Chain Acts), about two-thirds received the survey analyzed in this paper, resulting in a final sample of 1,017 respondents. Respondents were paid in panel points for taking part in this survey. The study was pre-registered at the American Economic Association's registry for randomized controlled trials and ethically approved by the German Association for Experimental Economic Research e.V. (GfeW).³

The survey analyzed in this paper consisted of six parts (A-F): Part A contained questions about selected socio-demographic characteristics (e.g., age, gender, and place of residence) to generate a representative sample of the population in Germany. In Part B, we asked for economic preferences and political attitudes. Part C contained questions dealing with respondents' consumption behavior regarding textiles. Part D consisted of two parts. While one subpart contained a stated choice experiment to analyze individual preferences for different designs of Supply Chain Acts, the other subpart referred to our incentivized experiment to derive respondents' WTP for the Fair Wear Foundation label, and their related norms. Part E measured general attitudes on sustainable clothing purchases and the German Supply Chain Act to shed light on the mechanisms of individual sustainable purchasing behavior observed in the experiment. The final Part F contained further questions about the socio-demographic background of the respondents. The median time taken to complete the survey was just under 15 minutes.

2.3 Elicitation of the WTP for the Fair Wear Foundation label

³ See <u>link</u> [omitted to maintain anonymity during the peer-review process].

In our experiment, we applied a multiple price list mechanism to elicit the WTP for the Fair Wear Foundation label in the context of socks purchases. The multiple price list format is a special form of the Becker-DeGroot-Marshak method for eliciting the individual valuation of a good in an incentive-compatible way that is relatively transparent and easy to understand for respondents (Andersen et al., 2006).

We informed all respondents about the Fair Wear Foundation in the introduction of our experiment. The respondents faced thirteen decisions in which they chose between two socks options. The socks only varied regarding the Fair Wear Foundation label and were otherwise similar, particularly in terms of cut, fit, material, and origin of production (all socks were produced of organic cotton in Türkiye). To avoid that respondents' familiarity with certain brand names could affect their choices, we did not report any brand names or similar information.

One option was always three pairs of socks without a Fair Wear Foundation label. These socks were offered for a price of \notin 7.50 in each of the thirteen decisions. The other option consisted of three pairs of socks certified by the Fair Wear Foundation label, available at prices ranging from \notin 6.00 to \notin 24.00 (see Table 1). To account for potential order effects, we randomized whether a respondent saw the prices of the certified socks in ascending or descending order. Additionally, it was randomized whether the certified socks were displayed on the left or the right.

< insert Table 1 here >

With such a multiple price list, we can identify the 'switching point,' i.e. the price at which respondents prefer the socks without the Fair Wear Foundation label over the socks with the Fair Wear Foundation label. For example, respondents who switched from socks with the Fair Wear Foundation label to socks without the label in the fourth purchase decision are willing to pay €9.00 for the socks with the Fair Wear Foundation label but not €10.50. Thus, the interval for the additional price these respondents are willing to pay for the Fair Wear Foundation label is between €1.50 (= €9.00 - €7.50) and just below €3.00 (= €10.50 - €7.50). We defined a respondent's WTP for the Fair Wear Foundation label most conservatively by taking the minimum of this interval, i.e., the difference between the prices for the socks with the Fair Wear Foundation label at the purchase decision before the switching point and €7.50, which is €1.50 in this example. It is usual that some individuals behave inconsistently and change more than once (e.g., Andersen et al., 2006). In our main analysis, we always considered the first switching point of each respondent. Moreover, we controlled for multiple switching behaviors by

excluding participants with inconsistent purchase choices in our robustness checks in part A of the Online Appendix.

Before showing the multiple price list, we informed the respondents about the incentivization process. Previous studies show an intention-behavior gap for ethical consumption (Hassan et al., 2016) and pro-environmental behavior (Rausch and Kopplin, 2021). To reduce this gap and hence reduce hypothetical bias, we incentivized respondents' decisions. The respondents received an initial endowment of €24.00, which they could use in each of the thirteen purchase decisions to buy one of the two socks options. They were further informed that after all respondents had finished the survey, 10% of them were randomly selected, and for these respondents, one of their thirteen choices was randomly chosen for realization. This means that for these 10% of respondents, their chosen three pairs of socks were bought and sent to the respondents. Such a probabilistic approach is often used in studies to incentivize choices while keeping the costs of the study at a reasonable level (e.g. Dohmen et al., 2011; Diederich and Goeschl, 2017). Respondents were notified that they additionally received the difference between the endowment of €24.00 and the price for the three pairs of socks in the purchase decision that was randomly selected by us. The respondents also received examples to illustrate how the incentivization works. The instructions for the experiment are shown in part B of the Online Appendix. All randomly selected respondents received their endowment and socks in October 2023.

The survey design included real, existing textile options and prices, which made it possible to elicit preferences for social sustainability in an incentive-compatible way. In addition, the multiple price list allows us to give a good estimation of the true individual WTP for sustainability as measured by the Fair Wear Foundation label in the context of socks.

2.4 Treatment

Before showing respondents the multiple price list, we randomly assigned them to one of two experimental groups without their knowledge (a control and a treatment group). The groups differed regarding the information respondents received before the thirteen purchase decisions. In the treatment group, we informed respondents about the German Supply Chain Act, which applied to companies with more than 3,000 employees at the time of the survey, and its objectives. Specifically, we informed respondents that the German Supply Chain Act aims to protect human rights along the supply chain and ensures fair working conditions, with potential penalties for non-compliance by companies (see Table 2).

< insert Table 2 here >

This information was included to emphasize the legal attempt aimed at promoting sustainably and fair produced goods among the respondents. Consequently, if respondents follow the legal norm depicted by the German Supply Chain Act and internalize it, they are likely to favor sustainable products even if the law does not apply. Therefore, we made use of the law threshold regarding company size, letting respondents purchase socks from companies with less than 3,000 employees, to which the law does not apply. Since this information about company size can influence individual purchasing behavior and some respondents may be aware of the German Supply Chain Act and its company size threshold, we also provided this information to respondents in the control group. For those who know the threshold and assume that we offer socks from companies with more than 3,000 employees, there would be no reason to pay for the Fair Wear Foundation label, as the German Supply Chain Act already ensures fair production. After receiving the specific information in the treatment and control groups, respondents could make their purchase decisions in the multiple price list. As described in the following sections, we implemented manipulation checks after these choices and asked respondents about specific norms regarding their socks purchasing decisions.

Since only a few studies tackle the 'expressive effect' of legal norms on individual sustainable purchasing behavior, the effect size is unclear ex-ante. To determine the sample size, we refer to similar studies including information treatments to measure individual sustainable behavior. Other studies in this field, like Schultz et al. (2008) and Demarque et al. (2015), detect effect sizes in the range between 0.15 and 0.32 standard deviations. Thus, using conventional levels of significance ($\alpha = 0.05$) and power ($\beta = 0.80$), we can detect an expected effect size of less than 0.2 standard deviations using a sample size of 500 per treatment, hence 1,000 respondents in total for treatment and control group.

2.5 Variables

WTP for the Fair Wear Foundation label

Our main dependent variable of this experiment results from the switching point in the multiple price list at which respondents decide to change from the socks option with the Fair Wear Foundation label to the option without the label. This switching point indicates a respondent's WTP for the Fair Wear Foundation label. Accordingly, we construct the variable *WTP for the Fair Wear Foundation label* denoting the difference between the price for the socks with the

Fair Wear Foundation label at the purchase decision before the switching point and \notin 7.50 for the socks without the label as explained in section 2.3.

Related personal injunctive and perceived social norms

We base our experimental analysis of norms on the theoretical framework and taxonomy of norm concepts by Dannenberg et al. (2024), which outlines the interrelationships between different norms and individual behavior. This framework distinguishes between, inter alia, personal injunctive, perceived social injunctive, and perceived social descriptive norms, respectively. While descriptive norms are rules about what is commonly done in specific situations, injunctive norms are rules about what ought to be done, i.e. behavior that is considered appropriate or inappropriate (e.g. Cialdini et al., 1990, 1991; Kallgren et al., 2000). The distinction between personal and social norms addresses the actors who show a certain behavior or consider it appropriate or inappropriate. While personal norms refer to a specific individual, social norms refer to a significant proportion of individuals. Finally, we can distinguish between perceived norms, referring to subjective beliefs, and objective norms, referring to actual behaviors and attitudes (personal injunctive norms are by definition subjective). The framework by Dannenberg et al. (2024) also suggests how personal norms, perceived social norms, and legal norms can directly affect individual behavior.

We asked three questions to capture the personal injunctive norm, perceived social injunctive norm, and perceived social descriptive norm after the experiment. For the personal injunctive norm, we asked respondents what reasonable additional price they would pay for the three pairs of socks with a Fair Wear Foundation label compared to the \notin 7.50 for the three pairs of socks without a Fair Wear Foundation label. Respondents could indicate the additional amount on a slider ranging from - \notin 1.50 to \notin 16.50, i.e. the whole range of the respective WTP that could be derived from the multiple price list.

The perceived social injunctive and perceived social descriptive norms were elicited similarly. Specifically, for the perceived social injunctive norm, we asked respondents to indicate their perception of what additional price the other respondents considered appropriate on average. To evaluate the perceived social descriptive norm, we finally asked respondents for the additional maximum price they think respondents paid on average. In both cases, we again asked respondents to indicate the amount on a slider ranging from -€1.50 to €16.50.

These two latter questions on the perceived social injunctive norm and the perceived social descriptive norm were incentivized via a quadratic scoring rule (e.g. Brier, 1950). Thus, 10% of all respondents were randomly selected and could receive up to \notin 3.00 for each norm

elicitation. As usual with the quadratic valuation function, the individual payoff is maximized when the estimate corresponds to the true value of the norm, and it decreases exponentially as the deviation increases.⁴ All three norm variables are considered secondary dependent variables to evaluate whether the information on the legal norm can evoke a change in norms.

Manipulation checks

We included two manipulation checks to examine whether our treatment information was read and comprehended by individuals. First, we included an open question that asked respondents to state (in a few words) two objectives of the German Supply Chain Act. The variable *Knowledge of German Supply Chain Act objectives* is created and indicates the number of correctly named objectives by the respondent out of the two main objectives "protect human rights" and "ensure fair working conditions." Thereby, we can test whether our treatment manipulation worked as intended, i.e. whether respondents in the treatment group were more likely to recall the objectives of the German Supply Chain Act than respondents in the control group.

Additionally, we test whether our treatment information changes the way how respondents perceive the legal norms regarding sustainable production in Germany. Therefore, we included the question: "How much do you think that there is currently a legal attempt in Germany to create transparency about the supply chains of companies and in particular to protect human rights along the supply chain and to ensure fair working conditions?," on a five-point Likert scale, which serves as the variable *Belief in the legal norm*. We expect respondents for whom a belief update due to the treatment information took place, to assess the German government's attempt to foster sustainable products more strongly in the treatment than in the control group. A summary of all dependent variables and variables used for the manipulation checks is shown in Table 3.

< insert Table 3 here >

Explanatory variables

First, to identify the potential effects of the different information, we create the treatment dummy variable *Information about German Supply Chain Act*, which takes the value of one if a respondent received information about the German Supply Chain Act.

⁴ The specific payoff for each norm elicitation was defined as follows (indicated in € cents): payoff = $300 - \frac{1}{300} * \text{deviation}^2$.

Moreover, following previous studies, we capture a variety of non-experimental explanatory variables to analyze how these may relate to sustainable purchasing decisions. Besides standard socio-demographics (age, gender, place of residence, education) and the socio-economic background (equivalized household income), we measured respondents' economic and social preferences (altruism, risk and time preferences, trust) using validated survey questions from the Global Preferences Survey Module (Dohmen et al., 2011). Moreover, we included measures of policy identification (conservative, social, ecological, and liberal) and general policy interest of respondents as these have been shown to affect sustainable purchasing in previous studies (e.g., Ziegler, 2021; Gleue et al., 2025). These are complemented by two measures of beliefs in law enforcement and beliefs in the expected working conditions for products sold in Germany as these beliefs might be relevant for examining the expressive effect of legal norms.

In addition, we included several variables specifically related to the individual purchasing behavior of respondents. We asked for more details regarding their clothing purchases, in particular, whether respondents buy clothing second-hand and whether they mostly buy their clothing in a store or on the internet. Furthermore, we aim to shed light on the underlying reasons for individual purchasing behavior and whether social relations may play a role. Particularly, respondents were asked to rate the degree to which respondents want to influence other people with their purchase decisions and the degree to which respondents are influenced by the purchase decisions of others. A full description of all variables that are included as explanatory variables in our econometric analysis is provided in the table in part C of the Online Appendix.

2.6 Descriptive statistics and randomization check

Figure 1 presents the distribution of the WTP for the Fair Wear Foundation label. The mode of this variable is $\notin 0$, i.e., 23% of respondents prefer socks with the Fair Wear Foundation label if they have the same price as the socks without the label. The majority of respondents (60%) is willing to pay for socks with the Fair Wear Foundation label with WTPs ranging from $\notin 1.50$ to $\notin 16.50$, which is the maximum WTP that our multiple price list can reflect and that is reached when respondents choose the socks with the label in all 13 purchase decisions (this is true for 9% of respondents). However, there is also a considerable share of respondents (17%) who choose the socks with the label, indicating a WTP of zero, a negative WTP for

the label of \in -1.50, or an even lower WTP.⁵ The left column in Table 4 shows that, on average, respondents are willing to pay \in 3.89 for the label.

- < insert Figure 1 here >
- < insert Table 4 here >

The left column in Table 4 also shows the mean values of the related norms, for the full sample and separately for both treatment groups. All mean values for the norms are significantly larger than the actual WTP for the Fair Wear Foundation label that results from our experiment (ϵ 6.76, ϵ 6.89, ϵ 7.73 for the personal injunctive, perceived social injunctive, and perceived social descriptive norms, respectively).⁶ The p-values for all corresponding pairwise t-tests between the WTP for the Fair Wear Foundation label and the related personal injunctive and perceived social norms are 0.00. Comparing these norms with each other, we find no significant differences in the personal injunctive and the perceived social injunctive norm (p-value for the corresponding t-test is 0.20), suggesting that respondents' perceptions of what others believe to be appropriate is closely aligned with their own personal belief about what should be paid. However, both of these norms are found to be significantly lower than the perceived social descriptive norm, i.e., what respondents think others are actually paying for the Fair Wear Foundation label (the p-values for both corresponding t-tests are 0.00).

Information on the descriptive statistics regarding our explanatory variables is shown in Table 5, again for the whole sample, as well as separately for the treatment and control group. On average, our respondents are more than 50 years old. 49% of the respondents are male, 86% live in Western federal states, and 40% have an education that is higher than a secondary school certificate. These results highlight the representativeness of our sample for these variables as they are consistent with the official statistics of these socio-demographic characteristics for the population in Germany (German Federal Statistical Office, 2023a; 2023b). In addition, the fourth column of Table 5 contains the differences in means between the treatment group and the control group to check if personal characteristics are equally distributed across treatments. The number of significant differences is roughly as expected by chance, so we consider the randomization successful.

< insert Table 5 here >

⁵ For the econometric analysis, we assume a WTP of €-1.50 also for those, who always choose the socks without the Fair Wear Foundation label.

⁶ Details on the distributions of our norm variables can be found in part A of the Online Appendix.

3. Empirical results

Manipulation checks

Table 6 shows the results of our two manipulation checks. First, it shows that individuals in the treatment group were able to correctly name the two objectives of the German Supply Chain Act significantly more often than respondents in the control group (0.99 versus 0.82 correct answers on average; p-value of a mean comparison t-test = 0.00). This result suggests that respondents paid attention to our treatment information and that this information effectively enhanced respondents' knowledge about the objectives of the German Supply Chain Act. Our second manipulation check examined whether respondents processed the treatment information and thereby updated their beliefs about the existing legal norm in Germany regarding fair and sustainably produced goods. The median is 3 for both groups and based on a Mann-Whitney U-test, we find no significant differences in the distribution of responses between the treatment and the control group (p-value = 0.50). Thus, respondents in the treatment group seem to be better informed about the law, but their beliefs about the current legal norm in Germany do not significantly differ from those in the control group.

<insert Table 6 >

Does information about the German Supply Chain Act affect the WTP for the Fair Wear Foundation label?

To examine whether information about the German Supply Chain Act can affect the WTP for the Fair Wear Foundation label, we use a mean comparison z-test between the treatment and the control groups. As Table 4 shows, we do not find a significant difference between the WTP for the Fair Wear Foundation label in the treatment group and the control group. In both groups, respondents have an average WTP of \in 3.89 for the Fair Wear Foundation label. Hence, receiving information about the legal norm does not significantly impact individual sustainable purchasing behavior.

We additionally estimate average treatment effects using linear regression models to control for potential confounding variables and to receive more precise estimates of the effect of the treatment on the WTP for the Fair Wear Foundation label. As shown in Table 7, we consider three model specifications. The first model specification includes the treatment dummy variable only, while the second specification additionally includes socio-demographic variables. The third specification includes all explanatory variables introduced in section 2.5, i.e., variables for economic preferences, policy identification and interest, variables concerning individual

beliefs in supply chain laws and good working conditions, and individual purchasing habits. In all three models, we control for whether the option with the Fair Wear Foundation label is displayed on the right or the left side and whether the prices in the multiple price list increase or decrease (the corresponding estimated parameters are not displayed). We do not find a significant effect of our treatment on the WTP for the Fair Wear Foundation label in any of the three model specifications. Consequently, we find no evidence that providing information about the legal norm increases the WTP for the Fair Wear Foundation label. Given that we can detect quite small minimum effect sizes, it seems that there is indeed no 'expressive function' of the German Supply Chain Act on sustainable textile purchases, as measured in our experiment.

Regarding our further explanatory variables, we find evidence that respondents who are older, more altruistic and patient, those with a social or ecological policy identification, as well as those with a higher income have a higher WTP for the Fair Wear Foundation label. Male and highly educated respondents have a significantly lower WTP for the Fair Wear Foundation label. Most of these findings, i.e., the significant positive correlations among female individuals, and those with rather ecological or social preferences, attitudes, or identification, are consistent with many other studies in the domain of individual sustainable behavior, suggesting that our dependent variable indeed reflects one form of such individual behavior (e.g., Gutsche et al., 2023; Haverkamp et al., 2023; Gleue et al., 2025).⁷

<insert Table 7 here >

Does information about the German Supply Chain Act affect personal injunctive and perceived social norms regarding the Fair Wear Foundation label?

To analyze the related personal injunctive and perceived social norms, we follow a similar approach as for the analysis of the WTP for the Fair Wear Foundation label. Again, we use a mean comparison z-test to compare the additional payments indicated by respondents in each of the three norm questions across both groups. In addition, these variables serve as dependent variables in our complementary econometric analysis. The distributions of the corresponding variables are shown in part A of the Online Appendix.

Table 4 reports the results of the mean comparison z-tests. We do not find any significant differences between the valuations of the personal injunctive norm, the perceived social

⁷ As robustness checks, we exclude the 117 respondents with multiple switching points in the multiple price list. The results can be found in part A of the Online Appendix and they are mostly similar to the models including all respondents. Most importantly, we still do not find a significant effect of our treatment on the WTP for the Fair Wear Foundation label.

injunctive norm, and the perceived social descriptive norm in the treatment group and the control group. Therefore, we do not find evidence for our treatment information to affect related personal injunctive and perceived social norms regarding sustainable purchases. Both groups generally perceive similar amounts as appropriate to pay for the Fair Wear Foundation label in the context of socks purchases.

These results are consistent with the corresponding econometric analysis (see Table 8). We find no significant effect of our treatment dummy *Information about German Supply Chain Act* on any of the norm variables. Consequently, we do not find any evidence that information about the German Supply Chain Act significantly influences the valuation of the personal injunctive norm, perceived social injunctive norm, and perceived social descriptive norm. Therefore, we find no support that the expressive function of the German Supply Chain Act changes the related personal injunctive and perceived social norms in a way that individuals perceive it as more appropriate to pay for the Fair Wear Foundation label.

Regarding the other control variables, we find similar patterns for the norms as for the WTP measure. The estimated valuation of the personal injunctive norm increases among citizens who are older, more altruistic and those with a social or ecological policy identification. Contrarily, it decreases among individuals with a higher education and a liberal policy identification. The estimated valuation of the perceived social injunctive norm increases with age and with stronger beliefs in good production conditions. However, it decreases among male respondents, those with higher education, and those with a liberal policy identification. The estimated valuation of the perceived social descriptive norm increases with higher levels of altruism, a conservative policy identification, and a social policy identification. In contrast, it decreases among respondents with higher levels of risk aversion, trust, liberal policy identification, and general interest in politics.

<insert Table 8 here >

Do norms mediate the effect of the information about the German Supply Chain Act on the WTP for the Fair Wear Foundation label?

To complement the analysis of the expressive effect of legal norms, we additionally apply a causal mediation analysis as this approach allows us to examine the mediating effect of related personal injunctive and perceived social norms which is inherent in our research question (similar to, e.g., Carpena and Zia, 2020). As highlighted in Igartua and Hayes (2021), it is useful to conduct such an analysis despite having insignificant average treatment effects.

In this analysis, we examine two additive channels that form the total effect of the information about the legal norm on the WTP for the Fair Wear Foundation label following the approach of Igartua and Hayes (2021): The indirect effect and the direct effect. The indirect effect is the one we are most interested in. It represents the change in the WTP for the Fair Wear Foundation label that is attributed to the effect of exposure to the legal norm on the related personal injunctive and perceived social norms, i.e., the expressive effect of the norm. The direct effect quantifies the impact of the treatment on the WTP for the Fair Wear Foundation label independent of the mediating variables and captures all other channels besides the one specified by the indirect effect. In sum, these two effects form the total effect of the treatment, which is similar to the average treatment effect in the previous section. As the indirect effect could cancel out the direct effect, it is useful to conduct a mediation analysis even though the average treatment effect is insignificant.

The results of one causal mediation analysis are exemplified in Figure 2, where the perceived social injunctive norm serves as a mediator. Table 9 shows the specific results of our complete causal mediation analysis for all three norm measures. Specifically, it reports the estimation results of the two components of the indirect effect, i.e., the treatment effect on the three norm measures and the effect of the three norm measures on the WTP for the Fair Wear Foundation label, as well as the direct effect, and the total effect of the causal mediation analyses.

< insert Figure 2 here >

Most importantly, we do not find significant indirect effects of the related personal injunctive and perceived social norms as mediators. Thus, all three norms do not seem to mediate the effect between the information about legal norms and the WTP for the Fair Wear Foundation label. Therefore, we find no evidence for an expressive effect of the information about the legal norm. However, although the total indirect effect is insignificant and negative, dissecting the indirect effect shows a positive correlation between all three norm measures and the WTP for the Fair Wear Foundation label. Therefore, in line with many other studies, as reviewed by Farrow et al. (2017) and Dannenberg et al. (2024), norms are significantly and positively correlated with actual behavior. However, in contrast to, e.g. Lane et al. (2023), the legal norm does not significantly affect norms in our experiment, so they cannot take on their role as mediators to influence individual purchasing behavior.

< insert Table 9 here >

4. Discussion and conclusion

We conducted an incentivized experiment to analyze the expressive function of the German Supply Chain Act on the WTP for the Fair Wear Foundation label, based on a representative survey among 1,017 respondents. While studies like Lane et al. (2023) report significant effects of legal norms on the evaluation of behavior appropriateness, i.e. on the perceived social injunctive norm, we do not find evidence supporting the 'expressive function of law' (Sunstein, 1996). In our well-powered experiment, the treatment information neither significantly affects the WTP for the Fair Wear Foundation label nor the related personal injunctive and perceived social norms. Several distinctions in our study could possibly explain this null effect.

Firstly, providing one-time information about a law may not be sufficient to alter individuals' beliefs about a legal norm, and therefore may not be adequate to change related personal injunctive and perceived social norms. Our manipulation checks speak in favor of this reasoning. The treatment information significantly affects knowledge of the law but not the beliefs about the strength of the legal attempt in Germany. More time may be required to internalize legal norms compared to processing one-time information about social descriptive or social injunctive norms, which, in general, have been proven to affect behavior significantly, e.g. in reducing individual energy demand (for a comprehensive review, see Andor and Fels, 2018). In contrast to our study, Lane et al. (2023) use several well-established laws that have existed for many decades, such as speed limits on motorways or the legal drinking age. In the case of the German Supply Chain Act, it may therefore take some time before the law can fulfill its expressive function. High-profile enforcement of the law, such as successful lawsuits against large companies and appropriate media coverage, could accelerate and contribute to the shaping of norms. It is therefore the task of politicians to ensure proper enforcement of the law so that the law does not prove to be a "toothless tiger," as some critics call the current law (e.g. Fratzscher, 2021).8

Another distinctive aspect of our experimental design is the utilization of the discontinuity in the German Supply Chain Act at 3,000 employees. This discontinuity was originally implemented to not overburden small companies from disproportionate bureaucratic efforts induced by the law. We utilize this discontinuity to observe individual behavior while a law is in force that does not directly interfere with personal freedom of choice. Hence, this experimental design aspect allows us to separate the (possible) expressive effect of the law from the direct effect of the law. However, the respondents might misinterpret the discontinuity by

⁸ This process of internalizing legal norms may further be accelerated when laws are implemented more globally. In the case of ensuring sustainable supply chains, the Corporate Sustainability Due Diligence Directive (CSDDD) aims to implement a respective law on the European level.

perceiving it as less essential to regulate smaller companies as human rights violations may be less frequent in these businesses. In this case, also individuals who are informed about the German Supply Chain Act have no reason to pay a premium for sustainable socks from small companies.

Finally, our treatment information makes it clear that there is a legal attempt to support sustainably produced products, which should also be taken into account by individuals in their purchasing choices. However, as the German Supply Chain Act obligates companies to prevent environmental and human rights violations for all their suppliers, individuals may interpret the law as a free pass. They may believe that they no longer have to worry about sustainable purchasing themselves, as it is no longer their responsibility. This topic of 'responsibility diffusion', i.e. the beliefs about who is responsible for protecting supply chains and how they are affected by legal norms, might be a promising subject for future research.

Taken together, we find no evidence for an expressive function of the German Supply Chain Act as measured in our experiment. However, our results regarding the relation of our explanatory and dependent variables are in line with previous studies. Specifically, we find that individual sustainable purchasing behavior (the WTP for the Fair Wear Foundation label) is stronger among respondents with higher income, higher levels of altruism and patience, and with an ecological or social policy identification. Moreover, our causal mediation analysis shows a strong and highly significant positive correlation between respondents' personal injunctive and perceived social norms and their WTP for the Fair Wear Foundation label. Thus, our variables appear to be credible measures of individual sustainable purchasing behavior, warranting further analysis of the reasons for the null effect. The difficulty for future research will always be to find a legal norm that is in force and should credibly affect the individuals surveyed, without directly influencing individual decision options through deterrence or legal enforcement. For example, analyzing the effects of laws in one country on the behavior of individuals in neighboring countries could be promising, as studies have provided evidence for cross-state effects (e.g. Wittlin, 2011).

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Tables

Purchase decision	Three pairs of socks without the Fair Wear Foundation label	Three pairs of socks with the Fair Wear Foundation label
1. purchase decision	€7.50	€6.00
2. purchase decision	€7.50	€7.50
3. purchase decision	€7.50	€9.00
4. purchase decision	€7.50	€10.50
5. purchase decision	€7.50	€12.00
6. purchase decision	€7.50	€13.50
7. purchase decision	€7.50	€15.00
8. purchase decision	€7.50	€16.50
9. purchase decision	€7.50	€18.00
10. purchase decision	€7.50	€19.50
11. purchase decision	€7.50	€21.00
12. purchase decision	€7.50	€22.50
13. purchase decision	€7.50	€24.00

Table 1: Example of the multiple price list

Note: This table shows one version of the multiple price list used in the survey experiment. To avoid potential order effects, we randomized at the individual level whether the socks with the Fair Wear Foundation label were displayed on the left or the right side and whether the order of the prices was ascending or descending.

Experimental groups	Text
Treatment group	Since January of this year, the so-called Supply Chain Act has been in effect in Germany, which has the goal to create more transparency about companies' supply chains. In particular, the law is intended to protect human rights along the supply chain and ensure fair working conditions. If a company fails to comply with its obligations under the law, it can be penalized (further information can be found at https://www.bmz.de/de/themen/lieferkettengesetz). The Supply Chain Act applies to all companies with more than 3,000 employees. However, we source the socks shown below from companies with fewer than 3,000 employees, so the Supply Chain Act does not apply here.
Control group	We source the socks shown below from companies with fewer than 3,000 employees.

Table 2: Information for the experimental groups prior to the multiple price list

Variable	Definition
WTP for the Fair Wear Foundation label	Difference between the prices for the socks with the Fair Wear Foundation label at the purchase decision before the switching point in the multiple price list and \notin 7.50 for the socks without the label
Personal injunctive norm	Additional payment the respondent considers appropriate for the socks with the Fair Wear Foundation label compared to the socks without the Fair Wear Foundation label
Perceived social injunctive norm	Respondent's estimate of the average additional payment that other respondents consider appropriate for the socks with the Fair Wear Foundation label compared to the socks without the Fair Wear Foun- dation label
Perceived social descriptive norm	Respondent's estimate of the additional maximum payment that other respondents actually pay for the socks with the Fair Wear Foundation label compared to the socks without the Fair Wear Foundation label
Knowledge of German Supply Chain Act objectives (manipulation check 1)	Number of objectives that are named by the respondent out of the two main objectives "protect human rights" and "ensure fair working conditions"
Belief in the legal norm (manipula- tion check 2)	Respondent's beliefs in the strength of the legal effort in Germany to create transparency about companies' supply chains and to protect human rights along the supply chain and ensure fair working condi- tions, measured on a five-point Likert scale

Table 3: Definition of the dependent variables and the variables for the manipulation checks

	Full sample	Control group	Treatment group	Difference in means be- tween treat- ment and con- trol group	P-value from t-test
WTP for the Fair Wear Foundation label	3.89	3.89	3.89	0.00	0.99
Personal injunctive norm	6.76	6.91	6.62	-0.29	0.28
Perceived social injunctive norm	6.89	7.04	6.75	-0.29	0.24
Perceived social de- scriptive norm	7.73	7.85	7.62	-0.23	0.37
Number of respondents	1,017	509	508	1,017	1,017

Table 4: Means of the WTP for the Fair Wear Foundation label and related personal injunctive and perceived social norms across experimental groups

	Full sample	Control group	Treatment group	Difference in means between treatment and control group
Age	50.20	49.10	51.31	2.21**
Male	0.49	0.48	0.50	0.02
Western federal state	0.86	0.85	0.88	0.03
Education	0.40	0.40	0.40	0.00
Equivalized income	1.86	1.90	1.83	0.06
Altruism	0.71	0.71	0.71	-0.00
Risk aversion	0.45	0.41	0.49	0.08**
Patience	0.60	0.62	0.58	-0.04
Trust	0.44	0.44	0.44	0.01
Conservative policy identification	0.25	0.26	0.25	-0.00
Social policy identification	0.56	0.54	0.58	0.04
Ecological policy identification	0.36	0.35	0.36	0.01
Liberal policy identification	0.28	0.29	0.27	-0.02
Interest in politics	0.64	0.61	0.66	-0.05
Belief in law enforcement	0.51	0.51	0.51	0.00
Belief in production conditions	0.41	0.42	0.41	-0.01
Second-hand purchases	0.21	0.21	0.22	-0.02
Offline purchases	0.48	0.48	0.48	0.00
Influencing purchasing behavior	0.11	0.12	0.11	0.01
Influenced purchasing behavior	0.04	0.03	0.05	-0.01
Number of respondents	1,017	509	508	1,017

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Note: *(**, ***) indicates that the difference in the means between the experimental groups on the basis of a mean comparison z-test is different from zero at the 10% (5%, 1%) significance level.

	Full sample	Control group	Treatment group	Difference in means / medi- ans between treatment and control group	P-value from t-test / Mann- Whitney U- test
Knowledge of German Supply Chain Act ob- jectives (mean)	0.90	0.82	0.99	0.17	0.00
Belief in the legal norm (median)	3	3	3	0	0.50
Number of respondents	1,017	509	508	1,017	1,017

Table 6: Means / medians for the manipulation checks across experimental groups

Explanatory variables	(1)	(2)	(3)
Information about German Supply Chain	0.05	0.06	0.08
Act	(0.16)	(0.19)	(0.26)
Age		0.02**	0.02**
		(2.04)	(2.03)
Male		-1.42***	-1.08***
		(-4.02)	(-2.85)
Western federal state		0.24	-0.16
		(0.50)	(-0.33)
High education		-0.35	-0.95***
		(-1.00)	(-2.79)
Equivalized income		0.61***	0.46**
		(3.05)	(2.38)
Altruism			1.58***
D 1			(4.46)
Risk aversion			-0.42
			(-1.23)
Patience			0.72**
			(2.03)
Trust			-0.07
			(-0.21)
Conservative policy identification			-0.43
			(-1.11)
Social policy identification			0.70^{**}
Feelenieel gelieu identifientieu			(1.97)
Ecological policy identification			$1.78^{-1.18}$
Liboral policy identification			(4.27)
Liberal policy identification			(0.27)
Interest in politics			(0.27)
interest in pointes			(0.74)
Belief in law enforcement			0.31
			(0.90)
Belief in production conditions			-0.59*
			(-1.76)
Second-hand purchases			0.46
I I I I I I I I I I I I I I I I I I I			(1.03)
Offline purchases			0.10
1			(0.29)
Influencing purchasing behavior			0.77
			(1.16)
Influenced purchasing behavior			-1.09
			(-1.16)
Constant	3.16***	1.64*	-0.32
	(5.42)	(1.95)	(-0.36)

Table 7: OLS estimates (heteroskedasticity robust z-statistics) in linear regression models with the WTP for the Fair Wear Foundation label as dependent variable, 1,017 respondents

Notes: All linear regression models control for the order of the multiple price list. * (**, ***) indicates that the estimated parameters are different from zero at the 10% (5%, 1%) significance level.

Explanatory variables	Personal injunctive norm	Perceived social in- junctive norm	Perceived social descriptive norm
Information about German Supply Chain	-0.30	-0.26	-0.19
Act	(-1.13)	(-1.04)	(-0.70)
Age	0.02*	0.02**	0.01
	(1.93)	(1.98)	(1.38)
Male	-0.27	-0.59**	-0.20
	(-0.93)	(-2.08)	(-0.68)
Western federal state	-0.24	-0.12	0.15
	(-0.59)	(-0.30)	(0.38)
High education	-0.59**	-0.55**	-0.45
-	(-2.05)	(-2.05)	(-1.61)
Equivalized income	0.10	0.17	0.09
-	(0.72)	(1.37)	(0.71)
Altruism	0.88***	0.25	0.65**
	(2.89)	(0.82)	(2.09)
Risk aversion	-0.16	-0.17	-0.55**
	(-0.57)	(-0.63)	(-1.96)
Patience	-0.19	-0.41	-0.36
	(-0.64)	(-1.48)	(-1.29)
Trust	-0.23	-0.35	-0.57**
	(-0.83)	(-1.35)	(-2.04)
Conservative policy identification	0.04	0.30	0.71**
1	(0.11)	(0.98)	(2.21)
Social policy identification	0.77**	0.34	0.81***
	(2.44)	(1.12)	(2.68)
Ecological policy identification	0.68**	-0.12	0.16
	(2.10)	(-0.40)	(0.48)
Liberal policy identification	-0.70**	-0.76**	-0.80**
	(-2.20)	(-2.58)	(-2.57)
Interest in politics	-0.28	-0.47	-0.82***
	(-0.96)	(-1.63)	(-2.72)
Belief in law enforcement	0.23	-0.15	-0.22
	(0.80)	(-0.55)	(-0.77)
Belief in production conditions	0.30	0.70***	0.36
-	(1.06)	(2.61)	(1.33)
Second-hand purchases	0.78**	0.34	0.30
-	(2.41)	(1.06)	(0.92)
Offline purchases	-0.04	-0.09	-0.07
-	(-0.13)	(-0.35)	(-0.25)
Influenced purchasing behavior	-0.11	-0.29	0.07
	(-0.15)	(-0.43)	(0.09)
Influencing purchasing behavior	0.78*	0.73*	0.37
	(1.80)	(1.76)	(0.76)
Constant	5.87***	6.81***	7.12***
	(7.58)	(9.48)	(9.81)

Table 8: OLS estimates (heteroskedasticity robust z-statistics) in linear regression models with personal injunctive norm, perceived social injunctive norm, and perceived social descriptive norm as dependent variables, 1,017 respondents

Note: All linear regression models control for the order of the multiple price list. * (**, ***) indicates that the estimated parameters are different from zero at the 10% (5%, 1%) significance level.

	Personal injunctive norm	Perceived social injunc- tive norm	Perceived social descrip- tive norm
Estimated treatment ef-	-0.30	-0.26	-0.19
fect on the norm	(-1.13)	(-1.04)	(-0.70)
Estimated effect of the	0.47***	0.21***	0.29***
respective norm on the WTP for the Fair Wear Foundation label	(12.98)	(5.09)	(7.55)
Estimated average indi-	-0.13	-0.05	-0.05
rect effect	(-1.14)	(-1.01)	(-0.71)
Estimated average di-	0.21	0.13	0.14
rect effect	(0.70)	(0.42)	(0.43)
Estimated total effect	0.08	0.08	0.08
	(0.25)	(0.26)	(0.32)

Table 9: OLS estimates (heteroskedasticity robust z-statistics) from the causal mediation analysis in linear regression models with personal injunctive norm, perceived social injunctive norm, and perceived social descriptive norm as mediators, 1,017 respondents

Note: This table reports the OLS estimates of the treatment effect on the norms, the effect of the norms on the WTP for the Fair Wear Foundation label, the average indirect effect, the average direct effect, and the total effect (heteroskedasticity robust z-statistics) in linear regression models with the WTP for the Fair Wear Foundation label as dependent variable and related personal injunctive and perceived social norms as mediators. The indirect effect is defined as the product of the effect of the information about the German Supply Chain Act on the respective norm and the effect of the same norm on the WTP for the Fair Wear Foundation label. Thus, it isolates the effect of the information about the German Supply Chain Act on the respective norm does include the following control variables: *Information about German Supply Chain Act, Age, Male, Western federal state, High education, Equivalized income, Altruism, Risk aversion, Patience, Trust, Conservative policy identification, Social policy identification, Liberal policy identification, Interest in politics, Belief in law enforcement, Belief in production conditions, Second-hand purchases, Offline purchases, Influencing purchasing behavior, Influenced purchasing behavior, Order of the multiple price list. * (**, ***) indicates that the estimated parameters are different from zero at the 10% (5%, 1%) significance level.*

Figures



Figure 1: Distribution of the WTP for the Fair Wear Foundation label

Notes: The figure shows the shares of respondents (in %) for the WTP for the Fair Wear Foundation label, which is based on the purchase decisions in the multiple price list. The WTP is defined by the difference between the prices for the socks with the Fair Wear Foundation label at the purchase decision before the switching point in the multiple price list and $\notin 7.50$ for the socks without the Fair Wear Foundation label.

Figure 2: Structure of the estimation results from the causal mediation analysis with perceived social injunctive norm as mediator



Notes: The figure shows the OLS estimates of the indirect and direct effect in linear regression models with the perceived social injunctive norm as mediator. The indirect effect is defined as the product of the effect of the information about the German Supply Chain Act on the perceived social injunctive norm and the effect of the perceived social injunctive norm on the WTP for the Fair Wear Foundation label. Thus, it isolates the effect of the information about the German Supply Chain Act on the WTP for the Fair Wear Foundation label that is attributed to a change in the perceived social injunctive norm, i.e., the expressive effect. * (**, ***) indicates that the estimated parameters are different from zero at the 10% (5%, 1%) significance level.

Online Appendix

Online Appendix Part A: Robustness checks and further results

Table A1: Robustness check: OLS estimates (heteroskedasticity robust z-statistics) in linear regression models with WTP for the Fair Wear Foundation label as dependent variable, 900 respondents

Explanatory variables	(1)	(2)	(3)
Information about German Supply Chain	0.14	0.13	0.22
Act	(0.38)	(0.35)	(0.64)
Age		0.02*	0.02*
-		(1.75)	(1.73)
Male		-1.24***	-0.84**
		(-3.21)	(-2.05)
Western federal state		0.18	-0.23
		(0.35)	(-0.48)
High education		-0.41	-1.05***
		(-1.11)	(-2.90)
Equivalized income		0.60***	0.42**
		(2.81)	(2.04)
Altruism			1.74***
			(4.58)
Risk aversion			-0.58
			(-1.59)
Patience			0.62
			(1.64)
Trust			0.16
			(0.43)
Conservative policy identification			-0.31
			(-0.75)
Social policy identification			0.62
			(1.61)
Ecological policy identification			2.21***
			(4.99)
Liberal policy identification			0.13
			(0.30)
Interest in politics			0.29
			(0.71)
Belief in law enforcement			0.11
			(0.30)
Belief in production conditions			-0.34
			(-0.96)
Second-hand purchases			0.45
			(0.96)
Offline purchases			0.01
			(0.07)
Influencing purchasing behavior			1.46**
			(2.04)
Influenced purchasing behavior			-1.01
			(-0.95)
Constant	3.27***	1.82**	-0.41
	(5.16)	(2.02)	(-0.43)

Note: All linear regression models control for the order of the multiple price list. * (**, ***) indicates that the estimated parameters are different from zero at the 10% (5%, 1%) significance level.

Table A2: Robustness check: OLS estimates (heteroskedasticity robust z-statistics) in linear regression models with personal injunctive norm, perceived social injunctive norm, and perceived social descriptive norm as dependent variables, 900 respondents

Explanatory variables	Personal injunctive norm	Perceived social in- junctive norm	Perceived social descriptive norm
Information about German Supply Chain	-0.22	-0.31	-0.05
Act	(-0.77)	(-1.14)	(-0.18)
Age	0.02**	0.02**	0.01
-	(2.00)	(1.98)	(1.38)
Male	-0.31	-0.59**	-0.20
	(-0.96)	(-2.08)	(-0.68)
Western federal state	-0.23	-0.12	0.15
	(-0.54)	(-0.30)	(0.38)
High education	-0.66**	-0.55**	-0.45
	(-2.13)	(-2.05)	(-1.61)
Equivalized income	0.13	0.17	0.09
	(0.94)	(1.37)	(0.71)
Altruism	0.87***	0.25	0.65**
	(2.67)	(0.82)	(2.09)
Risk aversion	-0.16	-0.17	-0.55**
	(-0.57)	(-0.63)	(-1.96)
Patience	0.06	-0.41	-0.31
	(0.19)	(-1.48)	(-1.01)
Trust	-0.31	-0.35	-0.57*
	(-1.02)	(-1.35)	(-1.89)
Conservative policy identification	-0.03	0.30	0.73**
	(-0.07)	(0.98)	(2.11)
Social policy identification	1.00***	0.34	0.96***
	(2.97)	(1.12)	(2.94)
Ecological policy identification	0.62*	-0.12	-0.04
	(1.81)	(-0.40)	(-0.10)
Liberal policy identification	-0.75**	-0.76**	-0.73**
	(-2.21)	(-2.58)	(-2.16)
Interest in politics	-0.31	-0.47	-0.93***
	(-0.97)	(-1.63)	(-2.89)
Belief in law enforcement	0.34	-0.15	-0.17
	(1.11)	(-0.55)	(-0.54)
Belief in production conditions	0.27	0.70***	0.25
	(0.87)	(2.61)	(0.86)
Second-hand purchases	0.95***	0.34	0.58
	(2.69)	(1.06)	(1.63)
Offline purchases	-0.09	-0.09	0.05
	(-0.30)	(-0.35)	(0.16)
Influenced purchasing behavior	0.35	-0.29	0.91
	(0.40)	(-0.43)	(0.99)
Influencing purchasing behavior	0.95*	0.73*	0.58
-	(1.96)	(1.76)	(1.07)
Constant	4.78***	6.81***	6.68***
	(5.83)	(9.48)	(8.71)

Note: All linear regression models control for the order of the multiple price list. * (**, ***) indicates that the estimated parameters are different from zero at the 10% (5%, 1%) significance level.



Figure A1: Distribution of the personal injunctive norm







Note: The figure shows the shares of respondents (in %) for the additional price in \in respondents think the other respondents consider as appropriate on average, i.e. what respondents indicate what they think which value the other respondents specify on average in the question on personal injunctive norms across all 1,017 respondents.



Figure A3: Distribution of the perceived social descriptive norm

Note: The figure shows the shares of respondents (in %) for the additional maximum price in € respondents think the other respondents are willing to pay on average for the 13 purchase decisions in the experiment across all 1,017 respondents.

Online Appendix Part B: Experimental instructions and survey questions for the variables in the econometric analysis (translated from German)

Experimental instructions before the purchase decision:

"Below we come to a special part of the survey that relates to your preferences when buying socks. Please read the following information carefully.

Specifically, you are asked to make 13 purchasing decisions, in each of which you have the choice between two different sock alternatives. We will provide you with \notin 24 for each of the 13 choices.

Following the survey, 100 people (approx. 10%) will be randomly selected from all participants. If you are one of those selected, you will be informed by e-mail after the survey. In this case, one of the 13 purchase decisions you made will be randomly selected and implemented by us after the end of the survey (probably in July 2023).

You will then receive the socks that you have chosen in this particular selection situation. You will also receive the remaining amount of money that you have left over from the \notin 24 after purchasing these socks.

Examples for the case that you are one of the randomly selected persons and one of your 13 purchase decisions is realized:

- If the price of the socks you selected in the randomly chosen purchase decision is $\notin 7.50$, you will receive the remaining amount of money totaling $\notin 16.50$ in addition to the socks (i.e. $\notin 24$ minus $\notin 7.50$).

- If the price is €15, you will receive an additional €9 (i.e. €24 minus €15).

- If the price is \notin 24, you will not receive any additional payment as you have spent the entire \notin 24 on the socks."

Next screen

"All of the socks available for selection were made in Turkey from organic cotton. The socks differ in particular in terms of whether the manufacturing company has been awarded a "Fair Wear Foundation" label. The Fair Wear Foundation is an independent foundation and is committed to improving social conditions along the textile supply chain in all production countries. It regulates compliance with certain labor and social standards (e.g. fair wages and regulated working hours) as well as compliance with human rights (further information can be found here).

In each of the following 13 purchase decisions, you then have the choice between three pairs of socks without a Fair Wear Foundation label and three pairs of socks with a Fair Wear Foundation label. The three pairs of socks without a Fair Wear Foundation label always cost \notin 7.50. In contrast, the prices for the three pairs of socks with a Fair Wear Foundation label differ in the 13 purchase decisions."

Next screen

"We guarantee that all this information is true and will be implemented. As the selection of the 100 participants is random, you should make your purchase decision in the following for each selection situation as if you would certainly be drawn by lot.

In the following, you can determine the color and size of the socks. If you are selected at random, we will take this information into account in order to send you the socks you have requested (if available)." **Dependent variable**: 'Willingness to pay for the Fair Wear Foundation label'

Purchase decision	Three pairs of socks without the Fair Wear Foundation label	Three pairs of socks with the Fair Wear Foundation label
1. purchase decision	€7.50	€6.00
2. purchase decision	€7.50	€7.50
3. purchase decision	€7.50	€9.00
4. purchase decision	€7.50	€10.50
5. purchase decision	€7.50	€12.00
6. purchase decision	€7.50	€13.50
7. purchase decision	€7.50	€15.00
8. purchase decision	€7.50	€16.50
9. purchase decision	€7.50	€18.00
10. purchase decision	€7.50	€19.50
11. purchase decision	€7.50	€21.00
12. purchase decision	€7.50	€22.50
13. purchase decision	€7.50	€24.00

For all 13 choices below, please indicate whether you choose to purchase three pairs of socks without a Fair Wear Foundation label or three pairs of socks with a Fair Wear Foundation label at the prices indicated.

Dependent variable: 'Personal injunctive norm'

In your opinion, what is a reasonable price to pay additionally for the three pairs of socks with the Fair Wear Foundation label described above compared to the \notin 7.50 for the three pairs of socks without the Fair Wear Foundation label?

Note: A negative price of $\in X$ means that you consider a price $\in X$ lower for the three pairs of socks with the Fair Wear Foundation label as reasonable than for the $\notin 7.50$ for the three pairs of socks without the Fair Wear Foundation label.

Slider (exa	imple)
↑	
€-1.50	€16.50
Your opinion: It is reasonable to pay $\notin X$ more (less)	for the above described three pairs of socks with

Your opinion: It is reasonable to pay $\in X$ more (less) for the above described three pairs of socks with a Fair Wear Foundation label than for the three pairs of socks without a Fair Wear Foundation label.

Dependent variable: 'Perceived social injunctive norm'

You can receive a monetary amount up to $\in 3$ for this first question.

We have just asked you what you think is a reasonable price that should be paid additionally for the three pairs of socks with a Fair Wear Foundation label described above compared to the ϵ 7.50 for the three pairs of socks without a Fair Wear Foundation label.

What do you think, what additional price do the other participants consider as reasonable on average, i.e. what value did the other participants indicate on average in the last question?

The more accurately you can estimate this price, the higher your additional payout will be if you are one of the randomly selected participants (information on the exact amount of the payout can be found here). You should therefore give an estimate as accurately as possible.



Your assessment: On average, the other participants consider it appropriate to pay $\in X$ more (less) for the three pairs of socks with a Fair Wear Foundation label described above than for the three pairs of socks without a Fair Wear Foundation label.

Dependent variable: 'Perceived social descriptive norm'

You can again receive a monetary amount of up to $\in 3$ for this question.

The previous 13 purchase decisions between the different socks options result in a maximum price that all participants are willing to pay additionally for three pairs of socks with a Fair Wear Foundation label compared to the \notin 7.50 for the three pairs of socks without a Fair Wear Foundation label.

What do you think is the maximum additional price that participants are willing to pay on average for the previous 13 purchase decisions?

The more accurately you can estimate this price, the higher your additional payout will be if you are one of the randomly selected participants (information about the exact amount of the payout can be found here). You should therefore provide an estimate as accurate as possible.



Manipulation check variable: 'Knowledge of German Supply Chain Act objectives'

Please state (in a few words) two objectives of the Supply Chain Act.

Manipulation check variable: 'Belief in the legal norm'

How much do you think there is currently a legal effort in Germany to create transparency about companies' supply chains and, in particular, to protect human rights along the supply chain and ensure fair working conditions?

Not at all	Rather little	Undecided	Rather much	Very much

companies with fewer than 3,000 employees, so the Supply Chain Act does not apply here.

Treatment variable: 'Information about German Supply Chain Act'

Thank you very much for your information! Before we get to your purchasing decisions regarding socks options, here is one more piece of information:

Since January of this year, the so-called Supply Chain Act has been in effect in Germany, the goal of which is to create more transparency about companies' supply chains. In particular, the law is intended to protect human rights along the supply chain and ensure fair working conditions. If a company fails to comply with its obligations under the law, it can be penalized (further information can be found here). The Supply Chain Act applies to all companies with more than 3,000 employees. However, we source the socks shown below from from companies with fewer than 3,000 employees, so the Supply Chain Act does not apply here.

Explanatory variable: 'Age'

Please indicate your age: _____ years

Explanatory variable: 'Male'

Please indicate your gender

Male	
Female	
Diverse	

Explanatory variable: 'Western federal state'

Please indicate in which federal state you currently live in. Again, please refer to your primary residence if you have more than one residence.

Baden-Wuerttemberg
Bavaria
Berlin
Brandenburg
Bremen
Hamburg
Hesse
Mecklenburg-Western Pomerania
Lower Saxony
North Rhine-Westphalia
Rhineland-Palatinate
Saarland
Saxony
Saxony-Anhalt
Schleswig-Holstein
Thuringia

Explanatory variable: 'High education'

Please indicate your highest high school or college degree:

(So far) no degree

Elementary / secondary school degree (GDR: 8th grade)

Secondary school degree / middle maturity (GDR: 10th grade)

Graduated from polytechnic high school (8th / 10th grade)

University entrance qualification (completion of a technical high school degree)

High school degree (Abitur) / university entrance qualification

University degree or vocational college degree (GDR: engineering and technical high school degree)

University or college degree

Doctorate or postdoctoral qualification

Other qualifications with a high school degree (Abitur)

Other qualifications without a high school degree (Abitur)

Explanatory variable: 'Equivalized income'

What is the monthly household income of all persons currently living permanently in your household?

Note: Please refer to the current monthly net amount, i.e. after deduction of taxes and social security contributions, and please add regular payments such as pensions, housing allowance, child benefit, BAföG or alimony. If you are not sure, estimate the monthly amount.

Less than €500
€500 to under €1.000
€1.000 to under €1.500
€1.500 to under €2.000
€2.000 to under €2.500
€2.500 to under €3.000
€3.000 to under €3.500
€3.500 to under €4.000
€4.000 to under €4.500
€4.500 to under €5.000
€5.000 to under €5.500
€5.500 to under €6.000
€6.000 to under €6.500
€6.500 to under €7.000
€7.000 to under €7.500
€7.500 to under €8.000
€8.000 to under €8.500
€8.500 to under €9.000
€9.000 to under €9.500
€9.500 to under €10.000
€10.000 or more

Explanatory variable: 'Altruism'

Completely unwilling	Rather unwilling	Undecided	Rather willing	Completely willing

How much are you willing to give to a good cause without expecting anything in return?

Explanatory variable: 'Risk aversion'

How willing are you personally to take risks?

Completely unwilling to take risks	Rather unwilling to take risks	Undecided	Rather willing to take risks	Completely willing to take risks

Explanatory variable: 'Patience'

How much are you willing to give up something that benefits you today in order to benefit more in the future?

Completely unwilling	Rather unwilling	Undecided	Rather willing	Completely willing

Explanatory variable: 'Trust'

Please indicate the extent to which you agree with the following statement, "I suspect people have only the best intentions."

Totally disagree	Rather disagree	Undecided	Rather agree	Totally agree

Explanatory variables: 'Conservative policy identification,' 'Social policy identification,' 'Ecological policy identification,' 'Liberal policy identification,' Interest in politics,' 'Belief in law enforcement,' 'Belief in production conditions'

The following is about your attitude towards various political and social aspects. Please indicate the extent to which you agree with the following statements:

	Totally disagree	Rather disagree	Undecided	Rather agree	Totally agree
I identify myself with conservatively oriented politics					
I identify myself with socially oriented politics					
I identify myself with ecologically oriented politics					
I identify myself with liberally oriented politics					
I am interested in politics					
I assume that existing laws in Germany will be enforced					
I trust that products sold in Germany are manufactured under appropriate social conditions					

Explanatory variables: 'Second-hand purchases,' 'Offline purchases,' 'Influencing purchasing behavior,' 'Influenced purchasing behavior'

	Totally disagree	Rather disagree	Undecided	Rather agree	Totally agree
I often buy my clothes used or second-hand					
I prefer to buy my clothes in a store rather than online on the Internet					
I would like to influence the buying behavior of other people with my behavior when buying clothes					
When buying clothes, I follow the buying behavior of other people					

Please indicate the extent to which you agree with the following statements:

Variable	Definition
Treatment variable	
Information about German Supply Chain Act	Dummy variable that takes the value of one if the respondent received information about the German Supply Chain Act
Socio-demographics	
Age	Age of the respondent in years
Male	Dummy variable that takes the value of one if the respondent is male
Western federal state	Dummy variable that takes the value of one if the respondent is living in a Western federal state
High education	Dummy variable that takes the value of one if the respondent has at least a university entrance qualification
Equivalized income	Household income of the respondent divided by a measure that assigns a value of one to the first household member, a value of 0.5 to each additional adult, and a value of 0.3 to each child
Preferences and attitudes	
Altruism	Dummy variable that takes the value of one if the respondent states to be 'rather' or 'very' willing to give to a good cause without expecting anything in return
Risk aversion	Dummy variable that takes the value of one if the respondent states to be 'rather not' or 'not at all' willing to take risks
Patience	Dummy variable that takes the value of one if the respondent states to be 'rather' or 'completely' willing to give up something that benefits them today to benefit more in the future
Trust	Dummy variable that takes the value of one if the respondent 'rather' or 'completely' agrees with the statement "I assume that people have only the best intentions"
Conservative policy identification	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I identify myself with conser- vatively oriented policy"
Social policy identification	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I identify myself with socially oriented policy"
Ecological policy identification	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I identify myself with ecologi- cally oriented policy"
Liberal policy identification	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I identify myself with liberally oriented policy"
Interest in politics	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I am interested in politics"

Online Appendix Part C: Table with the definition of the explanatory variables

Belief in law enforcement	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I assume that existing laws in Germany will be enforced"
Belief in production conditions	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I assume that products sold in Germany are produced under appropriate social conditions"
Purchasing behavior	
Second-hand purchases	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I often buy my clothes second- hand"
Offline purchases	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "I tend to buy my clothes in shops rather than online on the internet"
Influencing purchasing behavior	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "With my behavior when buying clothes, I want to influence the buying behavior of other people"
Influenced purchasing behavior	Dummy variable that takes the value of one if the respondent 'rather' or 'totally' agrees with the statement "When buying clothes, I follow the buying behavior of other people"

Note: This table reports all variables used as explanatory variables in the econometric analyses.