# Excuse My Behavior: Social Norms and Moral Costs

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February 28, 2025, preliminary draft

#### Abstract

Excuses are common to ex-post justify socially irresponsible behaviors. But can excusableness shape economically relevant behaviors? This project studies the effect of excusableness on consumption choices that involve a trade-off between personal benefits and social costs (externalities). Participants in our between-subject survey experiment face hypothetical, incentivized consumption choices where they trade off private monetary gains and carbon emissions. We aim to disentangle the consequences of replacement excuses (RE), when own behavior can be defended with others' replacement behavior in case of relinquishment, and of waste excuses (WE), when forgoing own consumption may lead to resource waste. Preliminary results show that both RE and WE excuses increase selfish consumption choices, with the WE treatment having the most pronounced effects. Additionally, we find that these excuses significantly shape participants' beliefs about the prevalence of selfish behavior and their perceptions of social acceptance, while also reducing moral costs associated with selfish consumption.

This project was pre-registered under RCT ID AEARCTR-0015264.

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### **1** Introduction

Many consumers believe to make independent choices when their decision-making in fact may depend on others. For example, consumers might excuse selfish or morally precarious behavior by invoking actions of others (Danzer, 2024): "If I don't do it, someone else will". This reasoning aligns with the so-called replacement excuse (RE) which can explain why even morally conscientious individuals occasionally act in contrast to their own convictions. For instance, environmentally conscious individuals may be frequent fliers (Barr et al., 2011). Choosing a cheaper plane ticket over a train ride might be justified based on the belief that someone else will purchase the ticket, meaning total carbon emissions remain unaffected. Alternatively, the same behavior could be excused by a narrative we call the waste excuse (WE): "If I don't do it and no one else will, resources might be wasted." Consumers may argue that an empty seat in a scheduled airplane represents wasted resources. Although both excuses attempt to justify some socially contested behavior, they offer opposing interpretations of the decision context. Therefore, it is crucial to understand how the availability of different excuses influences economic decision-making.

Moral values and their influence on behavior are central to research on excuses. In economics, morality typically arises when decisions involve a trade-off between personal utility gains (e.g., money) and negative externalities for third parties (e.g., carbon emissions, canceling donations etc.). Actions associated with externalities are often viewed as immoral. Research on the RE and its connection to morality is still in its early stages and has produced mixed results, while no direct research appears to exist on the WE. Bartling and Ozdemir (2023) experimentally show that the availability of the RE has a limited impact on moral behavior, largely due to counteracting social norms. In contrast, Ziegler et al. (2024) demonstrate the full erosion of moral values in an experimental market when the RE is present. Although individuals agree with a social norm that disapproves RE behavior, they do not adhere to the norm. Given this discrepancy and the lack of empirical evidence, our project aims to investigate the relevance of the RE, the WE and social norms for morally and environmentally relevant behavior in greater depth. A key distinguishing feature of our study from prior research is that we introduce and compare two distinct types of excuses but do not alter market design in the experimental setting. We introduce narratives that invoke the RE and WE while keeping all other factors constant: providing different interpretations of the same objective information triggers excuses for socially suboptimal consumption choices.

Previous research has primarily tested the existence of the RE in abstract settings. In contrast, we apply the WE and RE to three different real-world consumer product categories: frequent or daily purchases (e.g., food), durable goods (e.g., clothing), and transportation (e.g., flights and train rides). In a survey experiment with one control group and three treatments, we randomly assign "replacement statements" and "waste statements" designed to trigger the WE and RE to a subset of the sample. Additionally, participants are assigned to a control group and another treatment group providing objective information but no excuses. Since these excuses provide interpretations of objective information, our experimental design includes one treatment that presents only the objective information, but no excuse. The additional RE and WE treatments incorporate this same information and add the associated excuse. The control group receives neither objective information nor excuse statements. Objective information, for example, indicates that there are still free seats available on the train and the plane. The RE and WE statements emphasize whether others might choose to fly or not, potentially providing justifications for the decision. Even though the consumption scenarios are hypothetical, we incentivize choices. Additionally, we aim to study mechanisms. Social norms are key predictors and determinants of individual behavior, especially in contexts involving moral trade-offs. Therefore, we elicit (prescriptive and descriptive) social norms to investigate if perceived norms differ with, without and between excuse statements. This will also provide insights into the diverging results reported in the previous literature.

Both excuses frame externalities as inevitable and beyond individual control, but they differ in one crucial aspect. The RE suggests that others might act selfishly, potentially increasing the perceived prevalence of selfish behavior and shaping descriptive norms accordingly. This framing could shift descriptive norms by increasing the perceived share of selfish individuals in the population. In contrast, the WE assumes that others might act unselfishly, which could lead to resource waste. The WE frames selfish actions as preventing resource waste, which might alter prescriptive norms by making such actions seem socially more acceptable. Understanding the underlying reasons for behavior reminiscent of the excuses is highly policy relevant. Changes in norms could also influence moral costs—-an important factor in individual decision-making—which we aim to measure. From a theoretical perspective, a utility-maximizing agent will act immorally when the perceived moral costs are lower than the monetary gains from the consumption decision. While Ziegler et al. (2024) measure moral costs, they assume these costs remain constant with and without the RE. Our study directly challenges this assumption by eliciting moral costs using multiple price lists (MPL) under different excuse treatments.

Preliminary results indicate that both RE and WE excuses significantly influence individuals' consumption choices, with the WE treatment having the most pronounced effect. Participants exposed to the WE treatment are significantly more likely to choose less environmentally friendly options in all three product categories, while the RE treatment also leads to more selfish choices (i.e., choices associated with higher CO2 emissions), especially regarding transportation and clothing. Additionally, both treatments increase participants' beliefs about the prevalence of selfish behaviors in the population and alter their perceptions of social acceptance, showing that narratives such as excuses can shape both individual behavior and social norms. Furthermore, we find that these excuses reduce moral costs, where the WE was especially effective. These findings suggest that excuses can influence individual consumption choices, change social norms, and lower moral costs and, hence, induce more selfish consumption patterns.

The remainder of the paper proceeds with details on the sample, the experimental design, a simple conceptual framework, and the hypotheses. After the empirical strategy and first preliminary results, we conclude.

## 2 Survey and Sample

We collect a sample of 2414 individuals representative of the German population. Data collection lasted from January 27 to February 7, 2025. Survey participants were recruited by the professional survey company Bilendi and paid a usual participation fee. Conditioning on non-missing variables, we analyze a sample of 2369 respondents in total. All participants were invited to a second survey wave from February 12 till February 21, 2025 (80% response rate). We collect the following information: First, participants answer demographic and socio-economic questions including age, gender, education, income, employment status, having minor children (and if so how many), and the residential federal state.

Afterwards, the respondents take part in an incentivized survey experiment that we describe in detail below. Incentives offered in this experiment are additional bonuses. Payment is conditional on finishing the survey. Since we want to elicit revealed preferences, the experiment involves donations to "atmosfair". "atmosfair" is a NGO that conducts and supports projects aimed at reducing CO2 in the atmosphere, e.g., by funding renewable energy projects in developing countries. This ensures that decisions in the experiment have actual environmental consequences. To help participants better understand the magnitude of one kilogram of CO2 emissions, we ask them to estimate how far one would need to drive a car to produce this amount. Afterwards, we provide them with the accurate value of on average 6 kilometers.

Finally, survey respondents answer a concluding questionnaire. Since the experiment introduces a trade-off between personal monetary gains and CO2 in the atmosphere it includes questions about support and views on regulations targeting the reduction of CO2 emissions. Among them are CO2 labels, preferential placement of the least carbon intensive products at eye level in supermarkets, bans of carbon intensive products, setting a maximum value of carbon emissions for a product, and carbon pricing in general. For each policy, we elicit personal acceptance, perceived effectiveness, the belief about the acceptance in the population (share of respondents accepting a specific policy) and anticipated personal financial consequences. We also inquire general views towards governmental regulations in markets, consumption decisions and CO2 emissions. Additionally, the questionnaire elicits beliefs concerning whether climate change actually exists, whether it is caused by humans, perceived as a problem and how respondents rate the personal impact caused by climate change. We measure the willingness to take risks, the willingness to postpone receiving a reward now for a greater benefit later, and locus of control according to questions from the German Socio Economic Panel. The willingness to take risks and to postpone are measured on an 11 point Likert-scales ranging from 0 to 10 with higher values indicating higher willingness to take risk and patience, respectively. We compute a composite score for the locus of control metric from a set of ten statements regarding the respondents' beliefs in personal control over life outcomes. Participants rate their agreement with

each statement where higher values indicate a stronger belief in personal control, on a possible score range between 1 and 4.

Table 1 presents summary statistics for demographic and socio-economic characteristics as well as attitudes. Columns (1) to (5) display means and standard deviations for the full sample and the four experimental groups: Control, Info, RE, and WE. Individuals in the sample are, on average, around 49 years old, and half of them are female. Personal net income averages approximately C2,526. About 39% of participants have at least an A-level education, around 27% have minor children and, on average, 2.49 minor children live in a household. Regarding employment status, 45% of the sample is employed full-time, 16% work part-time, 10% are not working, and 25% are retired. A small proportion of participants is furloughed (2%) or in training or studying (3%). The two political parties most relevant to our analysis are the AfD ("Alternative für Deutschland") and the Green Party ("Die Grünen"). 23% of the sample supports the AfD, a far-right party known for its opposition to climate policies, while 12% support the green party advocating for strong climate action.

Table 1 also includes behavioral and attitudinal metrics. The average locus of control score is 2.34. Willingness to take risks is at 4.10, and the willingness to postpone rewards is at 5.45. 63% of participants agree that climate change is human-made, and 72% believe that climate change exists.

Insert Table 1 here.

# 3 Experimental Design

Each participant faces three hypothetical but incentivized decisions, each involving a choice between two products with different prices and environmental impact. In each scenario, the cheaper option generates higher CO2 emissions, while the more expensive option has a smaller environmental impact. The product prices and CO2 emissions reflect realistic values based on actual market values. To control for order effects, we randomize the sequence of the three consumption decisions for participants. These decisions cover the consumption categories transportation, food, and clothing:

- 1. Flight vs. train ride: Decision between a flight (costs of €85 and emissions of 180 kg CO2) and a train ride (costs of €110 and 24 kg CO2) from Munich to Paris.
- 1 kg of Apples from New Zealand (costs of €3.75 and emissions of 0.8 kg CO2) vs. 1 kg of Apples from Germany (costs of €4.50 and emissions of 0.3 kg CO2)
- 3. Regular cotton shirt (costs of €10 and emissions of 7 kg CO2) vs. organic cotton shirt (costs of €13 and emissions of 3.8 kg CO2)

Throughout the paper, we refer to the cheaper, more carbon-intensive option as the selfish choice, as it generates a negative externality in exchange for monetary gains. In the "flight vs. train ride" scenario, we inform participants that both modes of transport have the same time requirement to travel from Munich to Paris. This accounts for check-in and check-out, and total time spent at the airport. For the apples and shirts decisions, participants are explicitly informed that the quality, feel, taste and other product characteristics are identical across options. This aims at eliciting product choices that are purely driven by differences in prices and emissions. In order to measure revealed preferences, we incentivize these product choices. Choosing the cheaper, more carbon-intensive option yields a monetary payoff based on the price differential (e.g., C25 for selecting the flight instead of the train). Choosing the more expensive, less carbonintensive option results in a CO2 reduction proportional to the emission differential (e.g., a 156 kg CO2 reduction for selecting the train). CO2 reductions are implemented through a donation to "atmosfair", an NGO that invests in CO2 reductions, e.g., through emission-free stoves in developing countries. We randomly select 20 % of participants and randomly implement one of their three product choices, leading either to a personal pay-off or a donation to the NGO. This way, we generate an immediate trade-off between personal benefit and social cost.

In total, our experimental design comprises four groups: the control group ("Control"), where participants neither receive additional objective information about the decision context nor any excuse statement. In the information treatment ("Info"), we provide participants with objective information for each decision, giving them more context. In the replacement excuse ("RE") and waste excuse ("WE") treatments, participants receive the same objective information *plus* one specific excuse statement for each of the three product decision. The design triggers the respective excuses by offering specific interpretations of the objective information. Compared to "Control", the excuse statements in the "RE" and "WE" may influence behavior by either altering the interpretation of the information or changing the information itself. To disentangle these effects, we include "Info", as the objective information could be interpreted in a way that supports either the "RE" or the "WE". We randomize participants into the four groups with a sample target of about 600 participants in each experimental group. The objective information in "Info", "RE" and "WE" states (translated from German):

- Flight vs. Train: Both flight and train tickets are still available, and both the flight and the train journey will definitely take place. Other people are also facing this decision.
- Apples from New Zealand vs. Germany: The supermarket offers both apples from Germany and New Zealand, and other customers could also buy them. Unsold food, such as apples, is disposed of in the supermarket.
- Standard vs. Organic Cotton T-Shirt: Both the standard and organic cotton T-shirts are available in the store and could also be purchased by other customers. Unsold stock is generally removed from the inventory and disposed of.

The "RE" statement adds:

- Flight vs. Train: The flight will take place anyway, and if you don't take the flight, someone else might take it instead.
- Apples from New Zealand vs. Germany: The apples from New Zealand are already in the supermarket, and if you don't buy them, someone else might.
- Standard vs. Organic Cotton T-Shirt: The standard T-shirt has already been produced, and if you don't buy it, someone else might.

The "WE" statement adds:

- Flight vs. Train: The flight will take place anyway and is not yet fully booked, and if you don't take the flight, a seat might remain empty.
- Apples from New Zealand vs. Germany: The apples from New Zealand are already in the supermarket, and if you don't buy them, they might be thrown away.
- Standard vs. Organic Cotton T-Shirt: The standard T-shirt has already been produced, and if you don't buy it, it might be thrown away.

The statements emphasize key features that explain why excuses might influence behavior. They stress that the occurrence of an externality is beyond an individual's control, which diffuses personal responsibility. This ensures comparability between treatments "RE" and "WE". However, these excuses ignore the fact that, in the long term, externalities could be reduced by intentionally decreasing aggregate demand for harmful products. This illustrates that, although the excuse statements may appear rational and valid, they can be easily debunked. Nevertheless, excuses may still provide moral wiggle room for individuals to justify selfish behavior (Dana et al., 2007). When using excuses, individuals typically cannot be certain whether someone else will purchase the product or not. The presence of such uncertainties creates additional moral wiggle room and further diffuses responsibility for the resulting externalities. Importantly, we hold the level of uncertainty constant across all excuse statements. In sum, our design ensures that any observed differences between "RE" and "WE" are solely driven by the distinct characteristics of the excuses themselves.

Afterwards, we elicit prescriptive norms using a method similar to Krupka and Weber (2013). Participants rate the social appropriateness of each of the six possible choices (three scenarios, each with two product options) on a four-point scale: 'Socially very inappropriate,' 'Socially somewhat inappropriate,' 'Socially somewhat appropriate,' and 'Socially very appropriate.' We clarify to participants: 'By socially appropriate, we mean behavior that most people agree is the "correct" or "preferable" thing to do.' To avoid order effects, we present the six choices in a randomized order. Beliefs about what others would choose in the three scenarios serve as a measure for descriptive norms: "How large do you belief is the share of people in the survey that make the following choices?". Again we present the choices in a randomized order.

Finally, to measure moral costs, we employ a multiple price list (MPL) approach for each of the three scenarios. The MPL identifies switching points in participants' preferred choices between two products as relative prices change. Specifically, we hold the price of the more expensive, less CO2-intensive option constant while gradually reducing the price of the cheaper more CO2-intensive option. The switching point allows us to estimate the participants' moral costs of avoiding the more carbon-intensive product. For each of the three scenarios we start with a price difference of  $\bigcirc 0$  and increase the price difference in seven steps. The flight is  $\bigcirc 10$  up to  $\bigcirc 70$  cheaper in  $\bigcirc 10$  increments. The apples from New Zealand are  $\bigcirc 0.50$  up to  $\bigcirc 3.50$  cheaper in  $\bigcirc 0.50$  increments. The cotton shirt is  $\bigcirc 1.30$  to  $\bigcirc 9.10$  cheaper in  $\bigcirc 1.30$  increments. Participants see the three MPLs in randomized order to control for order effects. More details on the coding of the variables for moral costs and social norms can be found below in section 5.1.

### 4 Conceptual Framework and Hypotheses

According to standard economic theory, an agent incurs no costs for making a morally contested choice (e.g., choosing an option with higher emissions) and exclusively values his own payoff while disregarding choices of third parties. However, empirical evidence suggests that individual decision-making is influenced by beliefs about others' actions, societal approval through social norms (Bicchieri & Xiao, 2009), and moral costs (Ziegler et al., 2024). The following utility function captures these considerations:

$$U_i(x) = F_i(x) - C^m{}_i(x) - C^s{}_i(x)$$
(1)

where  $U_i(x)$  represents the utility that individual *i* derives from choosing the selfish option and receiving the payoff *x*.  $F_i(x)$  reflects the utility from obtaining a higher payoff compared to the alternative associated with a lower externality. *i* also incurs costs from choosing the selfish option and receiving *x*:  $C^m{}_i(x)$  reflects personal moral costs, which could be interpreted as the self-image.  $C^s{}_i(x)$  reflects perceived social costs by transgressing social norms, which could be interpreted as social image. In our setting a higher *x* is associated with higher emissions which we assume to increase moral and social costs. *i* will only choose the selfish option if the benefits  $F_i(x)$  outweigh the costs  $C^m{}_i(x)$  and  $C^s{}_i(x)$ .

Now consider the effect of excuses on these costs. First, excuses may lower moral costs  $C^m{}_i(x)$  by perceiving a given action as less immoral. Second, excuses may reduce  $C^s{}_i(x)$  by influencing perceptions of social norms. The RE might shape descriptive norms by increasing the perceived share of selfish behavior in the population.<sup>1</sup> This is based on the idea that as more individuals choose selfish behavior, the descriptive norm shifts and becomes less binding. In contrast, the WE frames selfish actions as preventing resource waste because others are not acting selfishly. Therefore, the perceived social acceptance of selfish behavior might increase

<sup>&</sup>lt;sup>1</sup>An alternative interpretation of this behavior is strategic belief distortion (Di Tella et al., 2015, e. g.)

(prescriptive norm) while decreasing the perceived share of selfish behavior in the population. For the WE to be effective, its influence on prescriptive norms must dominate. In sum, the "RE" focuses on excusing the actor because others might step in, while the "WE" focuses on excusing the action by framing it as more socially acceptable. Note that the framework does not rule out the possibility that a change in social costs affects moral costs and vice versa. In our empirical strategy, we address this interdependence by correlating these measures.

Based on this simple framework and the experimental design, we aim to answer three core research questions:

- 1. Does the availability of excuses affect selfish behavior in the three product choices?
- 2. Does the availability of excuses affect moral costs in the three product choices?
- 3. Does the availability of excuses affect norms (prescriptive and descriptive) in the three product choices?

The first research question focuses on the impact of excuses on consumptions choices, while the second and third research questions explore the mechanisms driving the effectiveness of these excuses. Our first hypothesis states that:

• H1: The share of individuals choosing the selfish option is higher in treatments "RE" and "WE" compared to "Control" and "Info".

We posit that excuses reduce the moral and social costs associated with choosing the selfish option, thereby increasing the likelihood of selfish behavior in the excuse treatments compared to "Control" and "Info". Ex-ante, we do not anticipate any significant differences between the excuse treatments "RE" and "WE". The relative effectiveness of the excuses hinges on three factors: the dominant norm driving behavior, whether excuses change perceived norms, and how an excuse reduces moral costs. We expect the RE to increase selfish behavior more than the "WE" since it more directly targets beliefs, which has been shown to be a more important driver of behavior than prescriptive norms (look for literature). H2 through H4 investigate these questions. Differences between "Control" and "Info" should be minor. However, if there are any differences, the share of selfish consumption choices should be higher in "Info". Providing additional informational context may prompt participants to interpret the situation in terms of the "RE" and "WE" narratives. The key distinction between "Info" and the excuse treatments is that the latter actively supplies participants with statements serving as excuses.

The next set of hypothesis explores the proposed mechanisms behind the excuse statements

- H2: The belief about the proportion of individuals choosing the selfish option in "RE" is higher compared to "Control" and "Info", while it is the lowest in "WE".
- H3: The selfish option is perceived as socially more appropriate in "WE" compared to "Control", "Info", and "RE".

• H4: Morals costs are lower in "RE" and "WE" compared to "Control" and "Info".

Based on our framework H2 and H3 follow from the narratives of the excuse statements, which emphasize the behaviors of others and the framing of moral obligations. The RE suggests that someone else might consume instead of oneself, leading us to hypothesize that the belief about the proportion of individuals buying the selfish product is higher in "RE" compared to the other treatments. The WE emphasizes that others might not choose the selfish option, framing buying the product as a moral obligation. Consequently, we hypothesize that the belief in selfish behavior is lowest in "WE" (H2), while social appropriateness is highest (H3). Since excuses could lead to perceiving a selfish action less immoral, we expect moral costs to reduce in "WE" and "RE" compared to "Control" and "Info" (H4). Moral costs could be lowest in the "WE" since it actively tries to excuse the action. We do not expect significant differences between "Control" and "Info" with respect to H2, H3, and H4 since the additional information is objectively framed. Despite that, it is still important to include "Info" to be able to disentangle the excuse effects from potential information effects.

# 5 Empirical Approach

### 5.1 Average Treatment Effects

Our main outcomes are three product choices. These are coded as follows: a dummy equal to 1 if a participant chooses the flight, a dummy equal to 1 if a participant chooses the apples from New Zealand, and a dummy equal to 1 if a participant chooses the cotton shirt (i.e., always the cheaper options with greater carbon footprint). Regarding prescriptive norms, we assign the following values to each of the social appropriateness statements: -2 "Socially very inappropriate", -1 "Socially somewhat inappropriate", 1 "Socially somewhat appropriate", and 2 "Socially very appropriate." Descriptive norms -— beliefs about what others would choose -— range from 0 to 100 (percent).

To measure moral costs, we define a switching point as the price difference at which participants switch from the more environmentally friendly option to the less environmentally friendly but cheaper option (e.g., from train to flight). If a participant has multiple switching points, we use the first instance where they switch. While it would be inconsistent to switch back (e.g., from flight to train), we code such instances accordingly.

First, we will compare raw mean differences between all treatment groups for each outcome of interest. Afterwards, we will estimate the following equation using OLS:

$$Y_i = \alpha + \beta_1 R E_i + \beta_2 W E_i + \beta_3 Control Info_i + X'_i \gamma + \epsilon_i \tag{2}$$

where, *i* indexes an individual, and the "Control" group serves as the reference category.  $Y_i$  represents the respective outcome of interest, i.e., the product choices, prescriptive and descriptive norms, and moral costs.  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  measure the average treatment effects of the "RE",

"WE", and "Info" treatments, respectively, compared to the "Control" group. Standard errors  $(\epsilon_i)$  are clustered at the individual level.  $X'_i$  is a vector of controls including age, gender, personal monthly net income, educational background, employment status, having minor children, how many minor children live in the household, voting intentions, views about climate change, and economic preferences including risk preferences, time preferences, and locus of control.

As an exploratory analysis, to study the relationship between norms, moral costs, and product choices, we will correlate these measures. Additionally, we will include social norms and moral costs to equation (2) as controls with the product choices as outcomes. This can provide us with suggestive evidence on the relative importance of norms and moral costs for consumption choices in our experiment (results not available yet).

### 5.2 Heterogeneous Treatment Effects

We plan to test the following moderators (results not available yet): Gender, age, voting intentions, educational background, income, views on whether climate change is menacing, and whether climate change is caused by humans. Additionally, we plan to estimate a random forest to discover other potential heterogeneities as an exploratory analysis.

## 6 Preliminary Results

Since we only recently completed data collection, we briefly outline our main preliminary results on consumption choices, moral costs, and social norms.

The t-tests in Table 2 indicate that the randomization was successful, as most variables show no significant differences across groups. However, there are some differences, particularly in gender, having at least an A-Level education, and political preferences (AfD, and Grüne/Green Party). Additionally, differences appear in willingness to take risks and postpone rewards. While these imbalances exist, our randomization setup seems to have worked in general.

#### Insert Table 2 here

We present summary statistics for our main outcomes in Table 3. In the full sample, 35% of participants choose the flight option, 42% select the normal t-shirt, and 25% opt for apples from New Zealand. On average, individuals believe that 53% percent of participants choose the flight, 53% choose the normal t-shirt, and 48% the apples from NZ. Social acceptance ratings are positive for taking the train (0.89), choosing a normal shirt (0.34), an organic shirt (0.83), and selecting German apples (0.98). Participants on average rate flying (-0.12) and choosing apples from New Zealand (-0.03) negatively. The average switching points (moral costs in steps, not Euros!) are 4.13 for switching from train to flight, 3.84 for switching from organic to standard t-shirts, and 4.19 for switching from German to New Zealand apples. Generally, Table 3 shows that

there are unconditional differences across experimental groups in consumption choices, beliefs, social acceptance ratings, and moral costs. Therefore, we analyze these differences in more detail.

#### Insert Table 3

Our first set of results concerns consumption choices. Table 4 shows the estimated treatment effects on the probability of choosing the selfish option (yielding a personal pay-off) across the three product categories. All columns control for the variables previously specified in section 5.1. This holds for all tables. In the "RE" treatment, individuals are more likely to choose the flight (+5.5 percentage points, p < 0.05) and the normal/standard t-shirt (+5.4 percentage points, p < 0.10) compared to the control condition, while the effect on choosing apples from New Zealand is insignificant. These results show that the "RE" treatment indeed leads individuals to make more selfish consumption choices. The effect of the "WE" treatment appears to be stronger across all three product categories. Individuals are significantly more likely to choose the flight (+12.1 percentage points, p < 0.01), the standard t-shirt (+11.5 percentage points, p < 0.01), and apples from New Zealand (+7.9 percentage points, p < 0.01). In contrast, providing additional information without an explicit excuse ("Info") has no significant effect on consumption choices. This suggests that merely providing objective information about circumstances of the consumption choice does not lead individuals to consume more selfishly. These findings support H1, indicating that both excuse narratives increase selfish consumption.

#### Insert Table 4 here

Table 5 shows the impact of the treatments on participants' beliefs about the prevalence of selfish consumption choices in the population. Participants in the "RE" treatment believe that more individuals choose the selfish option for flights (+3.7 percentage points, p < 0.01) and (marginally significant) standard t-shirts (+2.4 percentage points, p < 0.10), while the effect on beliefs about choosing apples form New Zealand is not significant. These findings align with our hypothesis that the "RE" increases the perceived share of selfish behavior, hence, shifting descriptive norms. However, contrary to our expectations, the "WE" treatment also significantly increases beliefs about selfish consumption rather than decreasing them. Participants exposed to this excuse report higher beliefs about the share of individuals choosing flights (+6.0 percentage)points, p < 0.01), standard t-shirts (+4.5 percentage points, p < 0.01), and apples from New Zealand (+4.1 percentage points, p < 0.01). This suggests that instead of reinforcing the notion that selfish behavior is uncommon, the "WE" treatment may have rather increased beliefs about selfish choices to also make them more acceptable, which could signal a form of belief distortion. The "Info" treatment has minor effects, with a small but marginally significant increase in beliefs about standard t-shirt choices (+2.4 percentage points, p < 0.10), but no clear impact on the other products. This also supports the idea that mere information provision does not

substantially change descriptive norms. Overall, these results support H2 in confirming that excuse narratives shape beliefs about the frequency of selfish behavior in the population.

#### Insert Table 5 here

Table 6 presents the treatment effects on the social acceptance of the three consumption choices (with respect to six products). The results show that the excuse narratives influence participants' perceptions of social approval, but the effects are mixed across products. For the "Info" group, we observe small but significant increases in the social acceptance of flights (+0.161, p < 0.05) and standard t-shirts (+0.146, p < 0.05), while the acceptance of apples from New Zealand also shows a positive, though only marginally significant, effect (+0.132, p < 0.10). This suggest that providing basic information leads participants to view these choices as slightly more socially acceptable. However, for most other products in "Info", including organic shirts and apples from Germany, social acceptance is not significantly different from the "Control" group.

In the "RE" treatment, the effects on social acceptance are more varied. While the social acceptance of standard t-shirts (+0.222, p < 0.01) and apples from New Zealand (+0.228, p < 0.01) increases significantly, we also see a small but negative effect for apples from Germany (-0.120, p < 0.10) and a non-significant change for all the other products. These findings support the idea that the "RE" treatment increases social acceptance of selfish consumption in some contexts. Interestingly, it also reduces (albeit marginally significant) the social acceptance of the less selfish option regarding Apples. The "WE" treatment similarly increases social acceptance for standard t-shirts (+0.228, p < 0.01) and apples from New Zealand (+0.167, p < 0.05). In contrast to the "RE" treatment, however, we also observe some negative effects, such as a decrease in the social acceptance of train travel (-0.152, p < 0.05) and organic shirts (-0.147, p < 0.05). This suggests that the "WE" treatment might frame certain selfish behaviors as more socially unacceptable while, in other contexts, it frames the more sustainable option as less socially acceptable (e.g., train travel). Overall, these results provide partial support for H3, showing that both excuse treatments can influence social acceptance and, hence, the perception of prescriptive norms.

#### Insert Table 6 here

Table 7 presents the results for the switching behavior, which serves as a our measurement for moral costs. This refers to the price point (not price differential!) at which participants switch from a more environmentally friendly option (i.e., train, organic shirt, and apples from Germany) to a less environmentally friendly but cheaper option (i.e., flight, normal shirt, and apples from New Zealand). A lower switching point indicates lower moral costs, as participants are willing to switch to less environmentally friendly options at lower price differences.

In the "RE" treatment, the results suggest that moral costs decrease because participants

switch to less environmentally friendly options at earlier price points. Specifically, the switch from train to flight is marginally statistically significant (-0.271, p < 0.10), indicating that framing in line with the assumption that others may act "selfishly" reduces moral costs. However, for the other product choices, we do not find significant results.

The "WE" treatment shows the most pronounced effects in reducing moral costs. The switch from train to flight is significantly lower (-0.465, p < 0.01), as is the switch from organic to normal shirt (-0.308, p < 0.05) and the switch from apples from Germany to New Zealand (-0.401, p <0.01). These findings provide strong evidence that the "WE" treatment, which frames selfish behavior as more socially acceptable, reduces the moral costs associated with selfish consumption choices across all three product categories. In the "Info" group, the average switching behavior shows a negative trend across all product choices, although none of these differences is statistically significant. The coefficients are close to zero, suggesting that the informational treatment has little influence on the switching behavior. Overall, these results partially support H4, showing that the availability of excuses in both the "RE" and "WE" treatments lowers moral costs. However, the effect is most pronounced in the "WE" treatment.

Note that the varying numbers of observations across the product choices are due to the fact that we only include individuals who switched from train to flight, for example, but not from flight to train.

### To be completed

## 7 Conclusion

Our study examines how justification mechanisms, specifically the Replacement Excuse (RE) and Waste Excuse (WE), influence consumer decision-making in morally and environmentally relevant contexts. Using a survey experiment across three product categories—food, clothing, and transportation—we find that both excuses significantly increase selfish consumption behaviors, with the WE having the strongest effect. Participants exposed to these excuses not only made choices associated with higher  $CO_2$  emissions but also perceived selfish behavior as more common and socially acceptable. Additionally, both excuses reduced moral costs, reinforcing self-serving decisions. These findings highlight the power of narratives in shaping consumption patterns, altering social norms, and potentially undermining sustainability efforts. Understanding these psychological mechanisms is crucial for designing policies that effectively promote ethical and environmentally conscious behavior.

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	Mean and Standard Deviation				
-	(1) Full Sample	(2) Control	(3) Info	(4) RE	(5) WE
Age	48.70	48.93	48.22	49.22	48.48
	(15.35)	(15.53)	(14.91)	(15.43)	(15.57)
Female	0.50	(0.49) (0.50)	(1.01) 0.50 (0.50)	(10,10) 0.47 (0.50)	(10.01) 0.54 (0.50)
Personal Net Income (in $$ )	2525.96	2558.93	2453.00	2511.70	2583.19
	(1690.49)	(1705.28)	(1600.47)	(1669.39)	(1785.41)
A Level	0.39	0.44	0.37	0.35	0.40
	(0.49)	(0.50)	(0.48)	(0.48)	(0.49)
Minor Children	0.27	0.26	0.26	0.27	0.29
	(0.44)	(0.44)	(0.44)	(0.44)	(0.45)
Minor Children in Household	2.49	2.45	2.51	2.45	2.54
	(2.35)	(2.36)	(2.35)	(2.35)	(2.35)
Full Time	0.45 (0.50)	0.43 (0.50)	0.44 (0.50)	0.44 (0.50)	0.47 (0.50)
Part Time	0.16	0.16	0.16	0.14	0.16
	(0.36)	(0.37)	(0.37)	(0.35)	(0.36)
Furlough, Irregular	0.02	0.01	0.02	0.03	0.02
	(0.14)	(0.12)	(0.14)	(0.16)	(0.13)
Training or Student	0.03	0.05	0.03	0.02	0.03
	(0.17)	(0.21)	(0.16)	(0.15)	(0.16)
Retired	0.25	0.25	0.23	0.28	0.24
	(0.43)	(0.44)	(0.42)	(0.45)	(0.43)
Not Working	0.10	0.09	0.12	0.10	0.10
	(0.30)	(0.29)	(0.32)	(0.30)	(0.30)
AfD	0.23	0.20	0.24	0.26	0.23
	(0.42)	(0.40)	(0.43)	(0.44)	(0.42)
Grüne	0.12	0.14	0.12	0.10	0.12
	(0.33)	(0.35)	(0.33)	(0.30)	(0.33)
Locus of Control	2.34	2.34	2.35	2.34	2.33
	(0.40)	(0.42)	(0.38)	(0.40)	(0.40)
Willingness Risks	4.10	4.04	4.23	3.95'	4.16
	(2.60)	(2.66)	(2.60)	(2.62)	(2.51)
Willingness Postpone	5.45	5.47	5.49	5.27	5.56
	(2.45)	(2.41)	(2.53)	(2.50)	(2.36)
CC Human made	0.63	0.66	0.64	0.60'	0.61
	(0.48)	(0.47)	(0.48)	(0.49)	(0.49)
CC exists	(0.45)	(0.73) (0.44)	(0.45)	0.70 (0.46)	0.73 (0.44)
Observations	2369	577	617	577	598

### Table 1: Summary Statistics

*Notes:* This table presents summary statistics for the full sample and each experimental group. Standard errors are in parentheses. The sample is divided into a control group (C), a control with additional information (I), and two treatment groups labeled RE and WE. Variables include demographic characteristics (age, gender, income), employment status, voting intentions regarding political parties, economic preferences and psychological characteristics (risk preferences, time preferences, and locus of control) and views on climate change (CC).

	Differences Treatment Groups					
-	(1) C vs. I	(2) C vs. RE	(3) C vs. WE	(4) I vs. RE	(5) I vs. WE	(6) RE vs. WE
Age	0.71 (0.88)	-0.29 (0.91)	0.45 (0.91)	-1.00 (0.88)	-0.26 (0.87)	0.74 (0.90)
Female	-0.01 (0.03)	0.02	$-0.05^{*}$ (0.03)	0.03 (0.03)	$-0.05^{*}$ (0.03)	-0.08*** (0.03)
Personal Net Income (in $\mathfrak{C}$ )	105.93 (95.67)	47.23 (99.35)	-24.27 (101.92)	-58.70 (94.64)	-130.20 (97.21)	-71.50 (100.92)
A Level	$0.06^{**}$ (0.03)	$0.09^{***}$ (0.03)	0.03 (0.03)	0.03 (0.03)	-0.03 (0.03)	$-0.06^{**}$ (0.03)
Minor Children	0.00' (0.03)	-0.01 (0.03)	-0.02 (0.03)	-0.01 (0.03)	-0.03 (0.03)	-0.02 (0.03)
Minor Children in Household	-0.06 (0.14)	0.00 (0.14)	-0.08 (0.14)	0.06 (0.14)	-0.03 (0.13)	-0.09 (0.14)
Full Time	-0.01 (0.03)	-0.00 (0.03)	-0.03 (0.03)	0.01 (0.03)	-0.02 (0.03)	-0.03 (0.03)
Part Time	$ \begin{array}{c} 0.00 \\ (0.02) \end{array} $	$ \begin{array}{c} 0.02 \\ (0.02) \end{array} $	$ \begin{array}{c} 0.01 \\ (0.02) \end{array} $	$   \begin{array}{c}     0.02 \\     (0.02)   \end{array} $	$\begin{array}{c} 0.01 \\ (0.02) \end{array}$	-0.01 (0.02)
Furlough, Irregular	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	$0.00 \\ (0.01)$	$ \begin{array}{c} 0.01 \\ (0.01) \end{array} $
Training or Student	$0.02^{*}$ (0.01)	$0.02^{**}$ (0.01)	$0.02^{**}$ (0.01)	$\begin{array}{c} 0.00 \\ (0.01) \end{array}$	$   \begin{array}{c}     0.00 \\     (0.01)   \end{array} $	-0.00 (0.01)
Retired	$\begin{array}{c} 0.02 \\ (0.02) \end{array}$	-0.02 (0.03)	$0.02 \\ (0.03)$	$-0.05^{*}$ (0.03)	-0.01 (0.02)	$0.04 \\ (0.03)$
Not Working	-0.03 (0.02)	-0.01 (0.02)	-0.01 (0.02)	$\begin{array}{c} 0.02 \\ (0.02) \end{array}$	$   \begin{array}{c}     0.02 \\     (0.02)   \end{array} $	$ \begin{array}{c} 0.00 \\ (0.02) \end{array} $
AfD	-0.04 (0.02)	$-0.06^{**}$ (0.02)	-0.02 (0.02)	-0.02 (0.03)	$\begin{array}{c} 0.01 \\ (0.02) \end{array}$	$0.03 \\ (0.03)$
Grüne	$\begin{array}{c} 0.02 \\ (0.02) \end{array}$	$0.04^{**}$ (0.02)	$\begin{array}{c} 0.02 \\ (0.02) \end{array}$	$\begin{array}{c} 0.03 \\ (0.02) \end{array}$	$\begin{array}{c} 0.00 \\ (0.02) \end{array}$	-0.02 (0.02)
Locus of Control	-0.01 (0.02)	-0.00 (0.02)	$0.01 \\ (0.02)$	$\begin{array}{c} 0.01 \\ (0.02) \end{array}$	$ \begin{array}{c} 0.02 \\ (0.02) \end{array} $	$0.02 \\ (0.02)$
Willingness Risks	-0.19 (0.15)	$0.09 \\ (0.16)$	-0.11 (0.15)	$0.28^{*}$ (0.15)	0.07 (0.15)	-0.20 (0.15)
Willingness Postpone	-0.02 (0.14)	$   \begin{array}{c}     0.20 \\     (0.14)   \end{array} $	-0.09 (0.14)	$   \begin{array}{c}     0.23 \\     (0.15)   \end{array} $	-0.07 (0.14)	$-0.29^{**}$ (0.14)
CC Human made	$\begin{array}{c} 0.02 \\ (0.03) \end{array}$	$0.06^{**}$ (0.03)	$0.05^{*}$ (0.03)	$\begin{array}{c} 0.05 \\ (0.03) \end{array}$	$     \begin{array}{c}       0.04 \\       (0.03)     \end{array} $	-0.01 (0.03)
CC exists	$\begin{array}{c} 0.02 \\ (0.03) \end{array}$	$\begin{array}{c} 0.03 \\ (0.03) \end{array}$	-0.00 (0.03)	$\begin{array}{c} 0.01 \\ (0.03) \end{array}$	-0.02 (0.03)	-0.03 (0.03)
Observations	1194	1154	1175	1194	1215	1175

Table 2: Balancing Table

*Notes:* This table presents differences in means across treatment groups, comparing the "Control" group (C), "Info" (I), and the two treatment groups (RE and WE). Standard errors from t-tests are in parentheses. The table includes demographic characteristics (age, gender, income), employment status, voting intentions for political parties, economic preferences and psychological traits (risk preferences, time preferences, and locus of control), as well as views on climate change (CC). \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

	Mean and Standard Deviation				
	(1) Full Sample	(2) Control	(3) Info	(4) RE	(5) WE
Choice: Flight	0.35	0.29	0.34	0.37	0.42
Choice: Normal T-Shirt	$(0.48) \\ 0.42$	$(0.46) \\ 0.36$	$(0.47) \\ 0.41$	$(0.48) \\ 0.44$	$(0.49) \\ 0.48$
	(0.49)	(0.48)	(0.49)	(0.50)	(0.50)
Choice: Apples New Zealand	0.25	0.22	0.22	0.25	0.30
* *	(0.43)	(0.42)	(0.41)	(0.43)	(0.46)
Belief Flight	52.71	49.94	51.56	53.27	56.02
	(22.99)	(23.16)	(22.55)	(23.19)	(22.71)
Belief Normal Shirt	52.77	50.51	52.77	52.77	54.96
	(21.70)	(21.85)	(21.88)	(22.07)	(20.83)
Belief Apples NZ	48.03	46.08	47.91	47.90	50.15
	(23.13)	(23.43)	(23.31)	(22.95)	(22.70)
Social Acceptance Flight	-0.12	-0.23	-0.06	-0.07	-0.10
	(1.38)	(1.35)	(1.41)	(1.39)	(1.36)
Social Acceptance Train	0.89	0.96	0.94	0.85	0.79
	(1.23)	(1.20)	(1.19)	(1.26)	(1.28)
Social Acceptance Normal Shirt	0.34	0.19	0.34	0.43	0.42
	(1.29)	(1.28)	(1.26)	(1.33)	(1.28)
Social Acceptance Organic Shirt	0.83	0.92	0.84	0.81	0.76
	(1.22)	(1.17)	(1.18)	(1.24)	(1.26)
Social Acceptance Apples NZ	-0.03	-0.18	-0.03	0.07	0.00
	(1.35)	(1.32)	(1.38)	(1.36)	(1.34)
Social Acceptance Apples GER	0.98	1.08	0.98	0.93	0.95
	(1.23)	(1.17)	(1.21)	(1.26)	(1.26)
Switch from Train to Flight	4.13	4.39	4.20	4.03	3.89
	(2.65)	(2.57)	(2.65)	(2.69)	(2.67)
Switch in Shirts from Organic to Normal	3.84	3.98	3.92	3.77	3.68
	(2.43)	(2.43)	(2.46)	(2.39)	(2.44)
Switch in Apples from GER to NZ	4.19	4.37	4.28	4.16	3.97
	(2.37)	(2.36)	(2.39)	(2.33)	(2.41)
Observations	2369	577	617	577	598

Table 3: Summary Statistics: Outcomes

*Notes:* This table presents summary statistics for the full sample and each experimental group. Standard errors are in parentheses. The sample is divided into a control group (C), a control with additional information (I), and two treatment groups labeled RE and WE. Variables include our main outcomes including dummies for the consumption choices (flight, normal shirt, and apples from NZ), beliefs about other's consumptions choices (flight, normal shirt, and apples from NZ), social acceptance ratings for all six consumption choices (flight, train, normal (organic) shirt, and apples from NZ (GER)), and moral costs of choosing the less sustainable option (flight, normal shirt, apples from NZ) as measured by MPLs.

Table 4: 0	Consumption	Choices
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	(1) Choice: Flight	(2) Choice: Normal T-Shirt	(3) Choice: Apples from NZ
Info	$0.034 \\ (0.026)$	$0.038 \\ (0.027)$	-0.009 (0.023)
RE	$0.055^{**}$ (0.027)	$0.054^{*}$ (0.028)	$0.009 \\ (0.025)$
WE	$0.121^{***}$ (0.027)	$0.115^{***}$ (0.028)	$\begin{array}{c} 0.079^{***} \ (0.025) \end{array}$
Obs. Adj. R-Sq	$2,369 \\ 0.08$	2,369 0.08	$2,369 \\ 0.07$

Notes: The table shows estimates of the effect of Info, WE, and RE treatments on consumption choices. Controls include age, a female dummy, a dummy indicating having at least A-level education, the log of net income, a dummy indicating whether a person works full-time, a dummy for having minor children, the number of minor children in the household, a dummy for Green Party support, a dummy for AfD (right-wing party) support, dummies indicating whether an individual believes that climate change is human-made or that it exists, locus of control, and measures for willingness to take risks and willingness to postpone a reward for future benefits. Standard errors are clustered at the individual level. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Source: PRESPARE

	(1) Belief Flight	(2) Belief Normal Shirt	(3) Belief Apples NZ
Info	$1.749 \\ (1.320)$	$2.415^{*}$ (1.266)	$1.900 \\ (1.359)$
RE	$3.697^{***}$ (1.368)	$2.381^{*}$ (1.291)	
WE	$6.029^{***}$ (1.333)	$\frac{4.481^{***}}{(1.248)}$	$\begin{array}{c} 4.095^{***} \\ (1.355) \end{array}$
Obs. Adj. R-Sq	$2,369 \\ 0.02$	2,369 0.01	$2,369 \\ 0.00$

Table 5: Beliefs about Other's Behavior (Descriptive Norms)

Notes: The table shows estimates of the effect of Info, WE, and RE treatments on beliefs about other's consumption choices. Controls include age, a female dummy, a dummy indicating having at least A-level education, the log of net income, a dummy indicating whether a person works full-time, a dummy for having minor children, the number of minor children in the household, a dummy for Green Party support, a dummy for AfD (right-wing party) support, dummies indicating whether an individual believes that climate change is human-made or that it exists, locus of control, and measures for willingness to take risks and willingness to postpone a reward for future benefits. Standard errors clustered on the individual level. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Source: PRESPARE

	(1) Social Acceptance Flight	(2) Social Acceptance Train	(3) Social Acceptance Normal Shirt	(4) Social Acceptance Organic Shirt	(5) Social Acceptance Apples NZ	(6) Social Acceptance Apples GER
Info	$0.161^{**}$ (0.079)	$0.010 \\ (0.067)$	$0.146^{**}$ (0.073)	-0.062 (0.067)	$0.132^{*}$ (0.077)	-0.083 (0.068)
RE	$0.131 \\ (0.080)$	-0.072 (0.071)	$0.222^{***}$ (0.077)	-0.068 (0.070)	$0.228^{***}$ (0.078)	$-0.120^{*}$ (0.070)
WE	$0.117 \\ (0.078)$	$-0.152^{**}$ (0.071)	$0.228^{***}$ (0.074)	$-0.147^{**}$ (0.069)	$0.167^{**}$ (0.077)	$-0.119^{*}$ (0.069)
Obs. Adj. R-Sq	$2,369 \\ 0.04$	$2,369 \\ 0.05$	$2,369 \\ 0.01$	$2,369 \\ 0.05$	$2,369 \\ 0.03$	$2,369 \\ 0.05$

Table 6: Social Acceptance Consumption Choices (Prescriptive Norms)

Notes: The table shows estimates of the effect of Info, WE, and RE treatments on social acceptance rankings. Controls include age, a female dummy, a dummy indicating having at least A-level education, the log of net income, a dummy indicating whether a person works full-time, a dummy for having minor children, the number of minor children in the household, a dummy for Green Party support, a dummy for AfD (right-wing party) support, dummies indicating whether an individual believes that climate change is human-made or that it exists, locus of control, and measures for willingness to take risks and willingness to postpone a reward for future benefits. Standard errors clustered on the individual level. \* p < 0.10, \*\*\* p < 0.05, \*\*\* p < 0.01.

Source: PRESPARE

	(1)	(2)	(3)
	Switch from Train to Flight	Switch in Shirts from Organic to Normal	Switch in Apples from GER to NZ
Info	-0.174	-0.015	-0.067
	(0.151)	(0.140)	(0.137)
RE	$-0.271^{*}$	-0.079	-0.143
	(0.156)	(0.140)	(0.140)
WE	$-0.465^{***}$ (0.153)	$-0.308^{**}$ (0.142)	$-0.401^{***}$ (0.139)
Obs. Adj. R-Sq	$2,191 \\ 0.10$	2,177 0.11	$2,231 \\ 0.06$

Table 7: Moral Costs Consumption Choices

Notes: The table shows estimates of the effect of Info, WE, and RE treatments on switching points in MPLs measuring moral costs. Controls include age, a female dummy, a dummy indicating having at least A-level education, the log of net income, a dummy indicating whether a person works full-time, a dummy for having minor children, the number of minor children in the household, a dummy for Green Party support, a dummy for AfD (right-wing party) support, dummies indicating whether an individual believes that climate change is human-made or that it exists, locus of control, and measures for willingness to take risks and willingness to postpone a reward for future benefits. Standard errors clustered on the individual level. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Source: PRESPARE