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**Do Information, Price, or Morals Influence Ethical Consumption? A Natural Field Experiment and Customer Survey on the Purchase of Fair Trade Coffee**

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**Abstract**

We address ethical consumption using a natural field experiment on the actual purchase of Fair Trade (FT) coffee in three supermarkets in Germany. Based on a quasi-experimental before-and-after design the effects of three different treatments – information, 20% price reduction, and a moral appeal – are analyzed. Sales data cover actual ethical purchase behavior and avoid problems of social desirability. But they offer only limited insights into the motivations of individual consumers. We therefore complemented the field experiment with a customer survey that allows us to contrast observed (ethical) buying behavior with self-reported FT consumption. Results from the experiment suggest that only the price reduction had the expected positive and statistically significant effect on FT consumption.

**Key Words:** ethical consumption; Fair Trade; natural field experiment; survey; observed and self-reported behavior

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## 1. Introduction

Consumers who are mindful of the consequences their consumption practices have on the environment, on animals, and on other human beings are on the rise in Western affluent societies (Harrison et al., 2007; Lewis and Potter, 2011). These ethical consumers consider the moral features of products and services in their everyday consumption decisions: they buy organic food, use renewable energy, or boycott clothes manufactured under dubious working conditions. The historical roots of ethical consumption date at least as far back as the 18<sup>th</sup> and 19<sup>th</sup> century (e.g., the boycott of English goods by the Boston Tea Party in 1773 or the White Label Campaign of U.S. women's consumer leagues to reward department stores for their good labor condition in 1899; Lewis and Potter, 2011, p. 6). At the turn of the 21<sup>st</sup> century positive ethical consumption practices such as purchasing Fair Trade (FT) products are a prominent manifestation in the everyday.

Specifically, Fair Trade aims at the improvement of the living and working conditions of small-scale producer cooperatives and workers in developing countries. Basic objectives include bans on illegal child labor and forced labor, promotion of safe and healthy working conditions, and securing workers' rights (Nicholls and Opal, 2005). Food and handicrafts are hence understood to be fairly traded if producer cooperatives, workers or small-scale farmers are guaranteed fair prices, which cover their production costs. Often FT products come with an ethical premium for consumers. In turn, producer cooperatives can invest the premium in sustainable production modes and community projects to alleviate poverty (Nicholls and Opal, 2005). Third party certified and labeled FT groceries such as coffee, chocolate, or bananas are sold in most supermarkets throughout the U.S. and Europe; unlabeled FT commodities and handicrafts are often available in one world specialty shops.

General population surveys in the U.S. and Europe suggest high levels of self-reported FT consumption or consumer willingness to pay an ethical premium for FT products. For example, in 2006 around two thirds of U.S. respondents stated that they are willing to pay more for FT coffee (Hertel et al., 2009, p. 455); and more than half of German respondents indicated that they are willing to pay more for FT products in general (BMU, 2006). However, market shares of FT coffee – the oldest and most widely available FT product – vary considerably between countries (e.g., 20% in the UK, 7% in France, 3% in the U.S., 1% in Germany; FAO, 2009; Krier, 2008).

Social scientists engage in a lively interdisciplinary debate on this gap between self-reported FT consumption in surveys and actual ethical purchasing in the market known as “ethical pur-

chase gap” (e.g., Bray et al., 2011) or “attitude-behavior gap” (e.g., Devinney et al., 2010). Some scholars argue for an improvement of theories to better account for the attitude-behavior link (see, for example, Carrington et al., 2010 and Newholm and Shaw, 2007, pp. 257/258 with citations therein) and emphasize the interplay of consumers’ ethical commitments with the market context of information and supply that shapes ethical consumption (Robinson et al., 2014); others argue for the use of incentive compatible methods like (natural) field experiments or (survey-based) discrete choice experiments instead of simple item measures to diminish the problem of social desirability in conventional surveys (e.g., Devinney et al., 2010).

From this methodological perspective, natural field experiments are well suited to shed light on the question which factors determine consumers’ actual purchase of FT products since consumers are not aware that they are part of a research project, and hence cannot bias their (answering) behavior in a socially desirable manner. However, studies with a field experimental design are scarce while standard survey-based research predominates across disciplines (see Papaoikonomou et al. (2011) for an overview of the scholarly work on ethical consumption and authors for a review on FT consumption).

Our contribution to research on ethical consumption is a natural field experiment on the actual purchase of FT coffee conducted among customers in three supermarkets in Germany between March and July 2012. Using a quasi-experimental before-and-after design (Shadish et al., 2002, Ch. 6) we analyze the (marginal) effect of three different treatments – additional information about Fair Trade, a 20% price reduction on FT coffee, and a moral appeal to customers to buy FT coffee and alleviate poverty in developing countries. While sales data from the natural field experiment cover actual ethical purchase behavior they offer only limited insights into understanding the motivations of individual (ethical) consumers. We therefore complemented the field experiment with a customer survey in the supermarkets going substantially beyond the scope of previous field experiments on FT consumption (e.g., Arnot et al., 2006; d'Astous and Mathieu, 2008; Hainmueller et al., 2014; Hiscox and Smyth, 2011; Hiscox et al., 2011; and Kimeldorf et al., 2006). In the survey we can distinguish between Fair Trade and non-Fair Trade customers and contrast their observed (ethical) buying behavior with their self-reported FT consumption. This allows us to analyze ethical purchasing motives at the level of the individual.

The article is structured as follows: We introduce the relevant theoretical concepts in Section 2. Details on the background of our study and methods are given in Section 3. In Section 4,

we present our major findings; we start out with the results of the natural field experiment and then complement them with findings from the customer survey. We conclude in Section 5 with a summary of our results, discuss limitations, and highlight directions for future research and practice.

## 2. Theoretical Considerations

The growing importance of ethical consumption in the market is matched by an increasing interest of scholars in the social sciences in this topic.<sup>1</sup> Research on FT consumption has triggered scholarly work in such diverse fields as agronomy; business and marketing; consumer studies; economics; ethics and philosophy; geography; political science; (social) psychology; and sociology. The price of FT products, information about the concept of Fair Trade, and the morals of FT products belong to the major determinants of individual FT consumption in these scholarly discussions.

### 2.1 Product Price

Standard economic explanations feature prominently in research on FT consumption (see authors). From this perspective consumers' decisions to buy a product are mainly influenced by external behavioral restrictions of consumers' budget and product price. Changes in the price of a product can be expected to lead to changes in consumer demand (i.e., price elasticity of a good; Marshall, 1895); typically, lower prices have a positive effect on demand. However, there are goods for which consumer demand paradoxically increases as prices go up. In the case of conspicuous and status seeking consumption (Veblen, 1899; Frank, 1985), for example, higher prices result in higher demand to demonstrate a superior social status.<sup>2</sup> Modeling consumer preferences according to Lancaster's (1966) Characteristics Theory of Value captures these different effects of price changes. Consumers are assumed to derive utility from the variety of characteristics a good contains and not from the good per se. The price of a

<sup>1</sup> For example, between 2004 and 2009 the total Fair Trade retail value of all FLO members rose from 0.8 billion EUR to 3.4 billion EUR (Boonman et al., 2011, Table 2.8). In their review of the scholarly work on ethical consumption Papaoikonomou et al. (2011, p. 200) find a steady increase in publications since 2006. Likewise, in a review on research on FT consumption (authors) find more and more published peer-reviewed journal articles after 2006.

<sup>2</sup> Among economists this effect is also discussed for Giffen Goods (Marshall, 1895; Battalio et al., 1991; Jensen and Miller, 2008).

product is understood as one product characteristic amongst others (e.g., display of social status, product quality, or flavor). Hence, consumers might value price changes differently and might pay a higher price in order to obtain a product with characteristics from which they gain utility.

Compared to conventional products FT products include politically, socially, and environmentally sound production standards as additional product characteristics. Typically, these characteristics come with an ethical premium making FT products more expensive than conventional products. Thus, FT consumption is resource dependent and consumers buying FT products are prone to economic constraints as the higher price of FT products can be conceptualized to map their income. The higher price of FT commodities and other ethical products is therefore understood as a barrier to sales (e.g., Bray et al., 2011; Cailleba and Casteran, 2010).<sup>3</sup> If this holds true and following the classic law of demand, consumer demand for FT products is price sensitive and elasticities greater than 1 can be expected. These considerations lead us to Proposition 1: *A reduction in the price of Fair Trade products positively influences Fair Trade consumption.*

Empirical evidence on the effect of price on FT consumption is rather inconsistent. Whereas survey-based discrete choice experiments on hypothetical choices of coffee products suggest a negative effect of the price attribute (e.g., Basu and Hicks, 2008; Cranfield et al., 2010; Rotaris and Danielis, 2011), findings from natural field experiments are mixed. Arnot et al. (2006, p. 561) find a negative effect of price on the demand for Fair Trade coffee; but it is smaller than the price effect for non-FT coffees. The results of the natural field experiment by Kimeldorf et al. (2006) on athletic socks manufactured under good working conditions suggest that as the price for labeled socks increased sales declined. Nevertheless, one third of customers were willing to pay an ethical premium. The natural field experiments by Hainmueller et al. (2014) and Arnot et al. (2006) on the purchase of FT coffee and by Hiscox and Smyth (2011) on the purchase of fairly traded towels and candles suggest that there are ethical consumers who are less sensitive to rising prices of FT products and pay an ethical premium. Customers in these studies did not switch readily to more inexpensive, conventional alternatives as prices were increased. Likewise, in their survey of customers of an American Apparel store Robinson et al. (2014) find that the perceived price of apparel did not affect the likelihood of respondents being categorized as ethical consumers or not.

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<sup>3</sup> The price of FT products can also be understood as a signal for the products' ethical virtues and ethical production standards. Reducing the price of FT products too much can hence raise questions of trust in the FT scheme in general and in the certification process in particular. Plausibly, consumers might ask themselves how FT products can be so inexpensive and at the same time allegedly involve costly ethical production standards.

## 2.2 Information

A prominent paradigm within the social sciences that highlights the importance of information for individual behavior is Tversky's and Kahneman's (1986) framing effect. Their work highlights the significance of information for the choice individuals make under uncertainty. The framing effect shows that the way in which a decision problem is described and presented can influence individual choices; shifting the reference point of a decision problem by giving different information about the outcome changes subjects' preferences for one alternative over the other. Studies on the framing effects show, for example, that for one and the same issue positive information leads to positive affect and negative information to negative affect (e.g., Slovic et al., 2004 for evaluations of technologies).

With regard to consumer behavior the framing effect is important as consumers are generally prone to information asymmetry; they do not have the same knowledge of product price and quality as producers (e.g., Akerlof, 1970). This leads to uncertainty and problems of trust. Additional information about a product and the way it is produced is one mechanism to reduce these (Caswell and Modjuszka, 1996). FT consumption in particular can be understood as purchasing decisions that involve high levels of uncertainty and problems of trust. Consumers cannot readily ascertain ethical production standards, lack knowledge about Fair Trade projects in general, and find it hard to distinguish these products from other labeled goods such as organic or environmentally friendly produce (e.g., DePelsmacker and Janssens, 2007, p.365 and citations therein). The ethical virtues of FT products are "credence" attributes, which consumers cannot assess before or after purchasing. Third party certified labels are needed to change the "credence" attribute into a "search" attribute like price, size, and color (Caswell and Modjuszka, 1996; DePelsmacker et al., 2005, p. 515).<sup>4</sup> However, it is important that consumers judge the certification bodies as credible and trustworthy and at the same time have enough background information to be able to recognize and to distinguish between different ethical labels. In addition, consumers are confused by different FT labels, certification schemes and the plethora of organizations involved in the Fair Trade market (DePelsmacker and Janssens, 2007, p. 365 and citations therein). These problems can also be conceptualized as market-based information failure (Robinson et al., 2014); due to insufficient

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<sup>4</sup> The quality and taste of a product are called "experience" attributes since consumers can assess the quality and taste of a product after purchasing it (e.g., Caswell and Modjuszka, 1996).



information or untrustworthy claims, consumers are not aware of ethical product choices or do not trust the claims producers make. Even so consumers are committed to ethical consumption they cannot put their concerns into practice.

Drawing on the scholarly work on framing effects, positive information about the concerns of the FT projects and organizations can thus reduce uncertainty and distrust in the decision making process and can positively influence consumers' ethical preferences. Consequently, Proposition 2 states: *Information about the goals of Fair Trade positively influences FT consumption.*

The extensive marketing literature suggests that extra information in addition to labeling can increase the overall attractiveness of ethical products while it could also lead to information overload for consumers (DePelsmacker et al., 2005, p. 516 and citations therein). Previous qualitative and survey-based studies that focus on the effect of information on FT consumption find that information is important in helping to form ethical beliefs and ethical purchases (Shaw and Clarke, 1999) with respondents preferring extra information on the pack of FT coffee in addition to a label (DePelsmacker et al., 2005). In addition, respondents' perception of the quality and quantity of information has a direct and indirect positive effect while too much information has a negative effect on the self-reported amount of money spent on FT products (DePelsmacker and Janssens, 2007). In their study on the importance of the market context for ethical apparel shopping, Robinson et al. (2014) find that lacking information about the company's ethical production standards decreased respondents' likelihood to buy from that company or to pay a price premium for sweat-free apparel.

In a series of discrete choice experiments, however, Devinney et al. (2010) find that providing additional information did not influence consumer choice of products with social features; they conclude that "[...] the passive application of information loses to active persuasion." (p. 177). Likewise, in their experimental study on the purchase of FT coffee in a university classroom setting, Hudson et al. (2013) find no effect of additional information in the form of a short video on FT coffee farmers. Finding a positive effect of subjects' knowledge of the FT cause, they conclude: "[...] information in the form of point-of-purchase badgering has little impact on the likelihood of ethical consumption, but [...] more long-term understanding about the goals and methods of the fair trade network has a positive impact." (Hudson et al., 2013, p. 1032). Using a discrete choice experiment Basu and Hicks (2013) analyze how the scale and scope of FT programs as additional information of FT labels that is conditional on different baseline information on the overall costs and benefits of FT programs influence subjects' hypothetical choices of coffee. Their results suggest that irrespective of the overall baseline



information subjects' willingness to pay for FT coffee increases and then decreases as producer participation (scale of the FT program) and increased income guarantee (scope of the FT program) rise. The natural field experiment by d'Astous and Mathieu (2008) suggests that abstract rather than concrete information about FT programs had a positive effect on the amount of money spent on FT products but no effect on purchase itself.

Natural field experiments on environmentally friendly garments and fair labor standards in jeans production suggest an increase in sales for women's attire when display signs emphasizing its ethical characteristics were placed next to the products in the stores (Hainmueller and Hiscox, 2012a; Hainmueller and Hiscox, 2012b). Likewise, a field experiment on FT coffee sold in online auctions on eBay finds evidence that the label has a positive effect on bids for coffee (Hiscox et al., 2011). Similarly, the field experiment on FT coffee by Hainmueller et al. (2014) finds an increase in sales once coffees were tagged with a FT label.

### 2.3 Morals

It is an established argument and finding in the social sciences that norms understood as "[...] cultural phenomena that prescribe and proscribe behavior in specific circumstances" (Hechter and Opp, 2001, p. xi) influence (consumer) behavior. Especially personal or moral norms, conceptualized as feelings of moral obligations, are expected to have strong effects because individuals have internalized a behavioral rule and sanction themselves if they do not act in accordance with this rule. Third parties are unnecessary for sanctioning and promoting norm compliance. Along this line of argument, Schwartz's (1977) norm-activation model was developed to explain altruistic behavior, specifically helping behavior. It is assumed that in order to convert the moral obligation into actual behavior the personal norm needs to be activated or formed. Two basic conditions of norm activation and formation are consistently found in the scholarly discussion and application of the norm-activation model – awareness of need as individual recognition that something needs to be done with regard to the situation at hand and awareness of responsibility as individuals' recognition that they are responsible for doing something.

From this perspective, the basic objections of the FT project pertain to consumers' moral obligations to get involved in issues of global social justice and humane production processes in developing countries. To convert this subjective moral obligation into FT consumption behavior the personal norm of helping others has to be activated or formed. A moral appeal to consumers to help others in developing countries can motivate purchasing of FT products since it raises consumers' awareness of need and of responsibility for issues central to FT initiatives.

It can serve as means to act in accordance with the internalized norm and avoid costs of cognitive dissonance and feelings of guilt in case of non-compliance. However, activating the subjective moral obligation to buy FT products with a moral appeal can only work if individuals have internalized the appropriate norm in the first place. In addition, a moral appeal can also lead to the formation of a subjective moral obligation in a specific (ethical purchase) situation. Based on these considerations we formulate Proposition 3: *Appealing to consumers' moral obligation positively influences FT consumption.*

To our knowledge, natural field experiments on the effect of moral appeals on FT buying behavior are missing so far. However, studies from related fields of interest can be informative. In a natural field experiment on the purchase of organic eggs in Swiss grocery stores Diekmann (1996) cannot find an effect of a moral appeal on sales. Likewise, the findings from Eckhardt et al.'s (2010) qualitative study suggest that using moral appeals to provoke ethical consumption behavior is unlikely to work. Yet, a natural field experiment on voluntary payments for a street newspaper shows a positive effect of a moral appeal to honesty on payments (Pruckner and Sausgruber, 2008). In addition, empirical evidence from survey-based research suggests that personal moral obligation to buy FT products exerts a strong positive effect on self-reported FT consumption (authors; Shaw et al., 2000; Sunderer and Rössel, 2012).

### 3. Study Background and Methods

#### 3.1 Natural Field Experiment

Modifying the design of a natural field experiment by Diekmann (1996, pp. 111–114) on the purchase of organic eggs in Swiss grocery stores we use a quasi-experimental before-and-after design (Shadish et al., 2002, Ch. 6) with alternating three-week periods of control and treatment. The same design was simultaneously implemented in three supermarkets in the wider area of Hanover, Germany, starting on March 5, 2012 and ending on July 29, 2012. Two supermarkets (S1 and S2) are located in urban neighborhoods in the city of Hanover whereas the third supermarket (S3) is situated in a smaller town in a nearby rural area.

To analyze the (marginal) effect of three different treatments (additional information on Fair Trade, a price reduction on FT coffee, and a moral appeal to buy FT coffee) on the actual pur-

chase of FT products we focused on sales of packaged ground FT coffee. All packages were Fair Trade certified and labeled as such; two thirds were also certified organic and labeled accordingly. The coffee packages came in sizes of 500g and 250g (see Table 1 for the assortment of FT coffees, respective package sizes, and initial prices in each supermarket). We selected ground FT coffee for the field experiment because it is the most widely available and the oldest certified and labeled FT product in Germany.

Figure 1 gives an overview of the research design. Starting with a three-week baseline condition in which initial prices and numbers of packages sold per day were recorded, the first treatment was implemented in the following three weeks. To minimize potential carry-over effects we introduced three-week control periods between the treatments. In the phase-out after treatment 3 final prices and number of packages sold per day were recorded.

[Figure 1 about here]

Store managers were briefed about the experiment. Before the baseline condition all external supplementary information materials on Fair Trade (posters, leaflets, flyers, etc.) were removed from the supermarkets. Packages of FT coffee were always stocked at the same position in the coffee shelves to avoid placement effects.<sup>5</sup> Control photos taken daily in supermarkets S1 and S2 and at least once a week in supermarket S3 ensured compliance with the experimental design and recorded potential product stock-outs in the coffee shelves. At no time during or in the weeks before the experiment were the FT coffees included in any promotional events or sales at the three supermarkets. Overall, compliance with the research design was very high; only in a few cases the treatment signs were displaced or had vanished. Research assistants replaced the correct signs immediately.

All three treatments were placed as 12 by 18 cm or 12 by 10 cm yellow display signs in red writing right in front of each brand of FT coffee in the shelf ledge.<sup>6</sup> That way we ensured a close link between the treatments and target products (see Figure A1 in the Appendix). In the *first treatment* with the additional information on Fair Trade the sign included the picture of a coffee farmer and read the following statement: “Coffee obtained from Fair Trade – fair payment, improved living conditions for small-scale farmers, no illegal child labor.” (see Figure A2 in the Appendix).

<sup>5</sup> Results from marketing research (e.g., Sigurdsson et al., 2009) suggest that placing products in the shelf center increases sales since customers tend to ignore products in the upper and lower parts of the shelves.

<sup>6</sup> All photos in the display signs were used with kind permission by Transfair e.V.

Since prices of FT coffees initially differed between supermarkets we decided on a 20% discount rather than a reduction of a fixed amount of money for the *second treatment* (see Figure A3 in the Appendix). We opted for a 20% reduction in price rather than 30% or 50% to avoid prices of FT coffee being unrealistically low and raise suspicion among customers (see also FN 3). Supermarkets were reimbursed for each package of FT coffee sold during the three-week promotion period. Table 1 gives an overview of the initial and reduced prices of the FT coffees; in the lower part we also summarized the number of conventional and organic-only ground coffees available as well as their highest, lowest, and average prices in each supermarket. The standard size of these coffees is 500g. As can be seen from Table 1, at their initial prices FT coffees rank among the most expensive ground coffees in the assortments of each supermarket. This holds especially for the smaller package size of 250g for which prices need to be doubled to be comparable to the standard package size of 500g. Once the price promotion was in place, it is the standard sized FT coffees with 500g that were somewhat lower in price than the most expensive conventional and organic-only coffees. However, even at reduced prices the average price of FT coffees is higher than the average price of conventional and organic-only coffee in all three supermarkets.<sup>7</sup>

[Table 1 about here]

For the moral appeal in the *third treatment* we used a display sign with the photo of an elderly woman and a child and the following statement: “Many small-scale farmers and their families do not have enough to make a living. Buy fairly traded coffee and fight poverty in developing countries!” (see Figure A4 in the Appendix).

One major threat to internal validity in a quasi-experimental before-and-after design is “history,” i.e., forces external to the treatments in the field experiment influencing our outcome of interest – the number of FT coffee packages sold per day – simultaneously with the introduction of the treatments (Shadish et al., 2002, p. 179). In our case, consumers’ desirability of coffee or of FT products in general could have changed due to events such as media reports or overall changes in the global coffee market. To our knowledge there were no local, regional or major national media reports on FT products or coffee during March and July 2012. Major

<sup>7</sup> During price promotions stocking-up effects might occur. Since coffee promotions occur quite frequently in the three supermarkets and, even at reduced prices, FT coffees are more expensive than most conventional and organic coffees we find this concern to be of minor importance (cf. Hainmueller et al., 2014, FN 29). In addition, our interviewers did not observe customers stocking up on FT coffee during our price promotion when conducting the customer survey in S1.

changes in the coffee trade did not occur either. Nevertheless, to counter this potential threat to internal validity we additionally obtained sales data for all organic and conventional ground coffees and for another FT product (FT chocolate bar in S1 and S2 and FT black tea in S3). That way we can assess whether our treatment effects are biased because of a change in the desirability of coffee or because of a change in the desirability of FT products.

Another threat to internal validity is “selection,” i.e., changes in the composition of the experimental group at the time of intervention (Shadish et al., 2002, p. 180). As one way to check for this problem, Shadish et al. (2002, p. 180) suggest analyzing the characteristics of the experimental units over time to see whether their profiles changed at the time of treatment introduction.

### 3.2 Customer Survey

To characterize customers in the treatment and control condition and to analyze motives for the purchase of FT coffee at the level of the individual customer we complemented the field experiment with a customer survey. In one of the two urban supermarkets (S1) we surveyed customers every other week over the entire five months of the project. During the treatment conditions we ran the customer survey in the first and last week of the three-week period; during baseline, controls, and phase-out we ran the customer survey in the second week only. In S2 and S3 we surveyed customers only at the end of the field experiment during phase-out and not in the baseline, treatment and control period. That way we avoided possible halo-effects of the survey on the purchase of FT coffee in the field experiment. Customers were asked to fill in the short paper-and-pencil questionnaire by themselves after they had finished their shopping and had paid at the check-out. To avoid customers filling in the questionnaire more than once they were explicitly asked whether they had already taken part in the survey prior to handing out the questionnaire. Especially regular customers mentioned by themselves that they had already done the survey. To include a wide range of customers in our sample, we surveyed at the beginning of the sales weeks on Tuesdays and on Wednesdays and at the end of the sales weeks on Fridays and on Saturdays from 9 a.m. to 1 p.m. and from 3 p.m. to 7 p.m. Taking part in the survey, respondents received a small gift (e.g. a seat cover for bicycles or a token for shopping carts).

Observing customers at the check-out when putting their groceries on the check-out counter, we classified customers into four types – (1) buyers of FT coffee, (2) buyers of non-FT coffee, (3) buyers of other FT products such as chocolate, roses, and bananas, and (4) other cus-

tomers. Selection of respondents was done according to the following priority: every type 1, type 2, and type 3 customer was asked to fill in a questionnaire with type 1 customers and type 2 customers having the highest priority as they are in the treatment or control group of the field experiment.<sup>8</sup> Type 4 customers were chosen according to the rule that every ten minutes (i.e., six times per hour) the customer that was done first at the check-out was approached. When asked in the post check-out area of the supermarkets, customers received a questionnaire according to their customer type. All questionnaires were identical in the questions asked; they differed only in a small detail in the top right corner of the first page to allow for researchers' identification of customer types afterwards. Respondents were not aware that they had been grouped into one of the four customer types according to their observed shopping behavior. Such a design makes it possible to contrast observed and self-reported consumption behavior at the level of the individual customer.

In total, we surveyed 1,515 customers in the three supermarkets; 937 questionnaires were returned from S1, 457 from S2, and 85 from S1. In the empirical analyses of the customer survey we will focus on the sub-sample from S1 because we surveyed customers over the entire period of the field experiment; compared to S2 and S3 we hence obtained a high number of completed questionnaires. Table 2 gives an overview of the number of questionnaires per customer type for all respondents in S1; in parentheses the group of respondents who do not show any missing values on variables included in the multivariate analysis is indicated.

[Table 2 about here]

Table 2 shows that we mostly surveyed type 4/"other" customers (N=637). 178 questionnaires were completed in the control group of customers who bought non-FT coffee (type2). For the treatment group with observed purchases of FT coffee (type1) we obtained 43 questionnaires and for customers of other FT products (type 3) the survey yielded 115 questionnaires.

In the questionnaire we asked about respondents' coffee consumption habits and their purchase frequency of FT coffee and FT products (e.g., chocolate, coffee, tea, bananas) within the last six months. Related to our treatments in the field experiment, we also surveyed respondents' perceived price of FT products (price treatment); their trust in the concept of FT (information treatment); and personal norm of FT consumption (morals treatment). Table 3

<sup>8</sup> Hence, if a customer bought conventional coffee and a FT chocolate bar s/he was classified as non-FT coffee buyer and thus belonging to the control group of the field experiment.

gives an overview of the exact wording of the survey items and summary statistics for the 191 respondents from S1 who were observed to buy non-FT coffee or FT-coffee and who do not have any missing values on any of the variables used in the multivariate analysis. Questions on socio-demographics were also included in the survey. Table 3 shows that 64% of respondents are female and the average age is 49 years. Respondents' mean level of education (14 years of schooling) as well as their mean equivalized disposable household income (EUR 1596) and their perceived financial situation can be considered above average for Germany.

[Table 3 about here]

## 4. Results

### 4.1 Field Experiment

With regard to our data in the field experiment, we obtained the number of FT coffee packages sold per day from the check-out scanner system in each supermarket. Observed stock-outs of the FT coffees were recorded as missing values whereas the non-purchase of FT coffees with products available for sale in the shelves was recorded as zero. In total, we have 122 observations in S1 and 121 observations each in S2 and S3; our field experiment ran 21 weeks with supermarkets being open six days a week from Monday through Saturday as supermarkets in Germany are usually closed on Sundays and on holidays such as May 1, Easter, and Pentecost.<sup>9</sup>

#### 4.1.1 Descriptive Results

We summarize the sales data of FT coffee for each period and each supermarket in Table 4 (first number in each cell). In total 1143 packages of ground FT coffee were sold during the five months of the field experiment. Most treatment coffees were sold in S1 (735 units) where ten different FT coffees are stocked followed by S2 (268 units) with eight different FT brands. In S3, where the assortment of FT coffees with only three different brands is quite small, 140 units were sold.

<sup>9</sup> For S1 we have 122 instead of 121 observations because the supermarket was open one Sunday for special festivities in the residential area.



Table 4 also informs about the share of FT coffee sales on all ground coffees sales during the field experiment (third number in each cell). In total, FT coffee sales accounted for 5% of all ground coffee sales. Throughout the field experiment shares of FT coffee are highest in S1 ranging between 6% and 13%; they are considerably lower in S2 and S3 (1% to 5%). In the baseline period before the experimental manipulations were implemented, FT coffee accounted for 7% of all coffee sales in S1 and for 3% in S2 and S3. These differences in FT coffee shares suggest that in S1 there is already an established customer segment for FT coffee prior to the experiment. These customers seem to be willing to spend more money on FT coffee and have the information and moral motivation to do so – even without the additional information and moral appeal provided by the field experiment. Therefore, these experimental manipulations might have a smaller impact on FT coffee consumption in S1. The smaller shares of FT coffee in S2 and S3 suggest that the segments of regular FT coffee customers in these stores are smaller. In turn, we might expect that the effect of the experimental interventions on the overall consumption of FT coffee is more pronounced in these two supermarkets.

[Table 4 about here]

With regard to the effect of our treatments we see that in all three supermarkets it is the price reduction in treatment 2 that exerts a strong positive effect on the number of packages sold; the other two treatments had only a minor or no effect on sales – even in the two supermarkets S2 and S3 where we would expect these treatments to have a larger impact on coffee consumers who do not already buy FT coffee. So from a descriptive inspection it is rather *Proposition 1* than *Propositions 2* and *3* that is supported in our study.

In line with *Proposition 1*, we find that compared to control 1 and control 2, sales increased in all three supermarkets as FT coffees were offered at a reduced price in *treatment 2*. With regard to *treatment 1* we find that displaying additional information on the Fair Trade concept increased sales in S1 and slightly in S2 but not in S3. Support for *Proposition 2* about the positive effect of additional information on sales of FT coffee is hence inconclusive. Compared to the baseline where 71 units in S1 and 31 units in S2 were sold the display signs with the additional information clearly increased sales in S1 (93 units sold) and only slightly increased sales in S2 (34 units sold). In control 1 sales declined to 88 units and 32 units respectively. In S3 sales of FT coffees declined slightly during treatment 1.

As for the expected positive effect of the moral appeal in *treatment 3*, we find a small effect for S2 only. Here, sales increase from 32 units in control 2 to 46 units during the treatment

and declined to 39 units during phase-out. We cannot find an effect of the moral appeal in S1 or S3.

Several studies suggest that the demand for coffee is highly elastic with average elasticities around  $-7$  (e.g., Hainmueller et al., 2014; Krishnamurthi and Raj, 1991) meaning that customers readily substitute between coffees brands when prices change. Because of the price reduction in treatment 2 we can also estimate price elasticities of demand in our study.<sup>10</sup> As expected consumer demand for FT products is price sensitive and elasticities are greater than 1. Jointly for all three supermarkets we find a price elasticity of demand of  $-5.17$  for ground FT coffee.<sup>11</sup> For each individual supermarket price elasticities are at  $-6.76$  (S1),  $-3.44$  (S2), and  $-1.52$  (S3) indicating that it is especially customers in S1 and S2 who do substitute for the FT coffee as prices change.

To find an indication for possible history effects that could threaten the internal validity of the field experiment we depict daily sales of different coffee and FT products in the three supermarkets in Figures 2a – 2d. In addition to the number of packages sold per day over the five-month period of the field experiment we also included the average price of the respective products for all three supermarkets on the right x-axis in Figures 2a, 2b, and 2c. We did not include the average price of the other two FT products in Figure 2d since the price of the FT chocolate bar (EUR 1.79) and FT black tea (EUR 6.99) remained stable.

[Figures 2a, 2b, 2c, and 2d about here]

Figure 2a disaggregates the sales data of the FT coffees in the treatments already presented in Table 4. Again, we find a strong effect of the price reduction in the second treatment and hardly any effects for the other two treatments in all three supermarkets.

Figures 2b, 2c, and 2d inform us about possible history effects. From these three figures we cannot find a change in the desirability of conventional ground or organic coffees and a change in the desirability of other FT products. Rather, as Figure 2b shows, sales for conventional coffees are mostly affected by product price. Sales increase during periods of price promotions (e.g., at the end of control 2 and the beginning of treatment 3) and they decrease

<sup>10</sup> Elasticities of demand are estimated as the percentage change in the quantity demanded (Q) divided by the percentage change in price (P);  $e = ((Q_2 - Q_1)/Q_1) / ((P_2 - P_1)/P_1)$ . In our case this is the percentage change in units sold from control 1 to treatment 2 and the price reduction of 20% from control 1 to treatment 2.

<sup>11</sup> Average price elasticity of demand for all three supermarkets was calculated as  $((291 - 143)/143) / (-20) * 100$ .

once the average price rises (e.g., in the middle of treatment 3). Sales of organic coffees (Figure 2c), FT chocolate bars, and FT black tea (Figure 2d) remained quite stable at a relatively low level during the whole five-month period; again, providing no indication of history effects.

Selection effects with regard to supermarket customers can be another threat to the internal validity of the field experiment. Analyzing the composition of respondents from the customer survey in S1 with regard to their socio-economic characteristics (gender, age, education, household income; see Table 3 for exact wording of the survey items) across experimental periods can point to changes in the composition of subjects in the field experiment. The analyses presented in Table A1 in the Appendix do not indicate such differences. Descriptively, the proportion of women differs only slightly across experimental periods and a Pearson's  $\chi^2$ -test confirms the notion of a statistically non-significant relationship between gender and experimental periods. Likewise, there are only minor differences between respondents' mean age, mean education in years of schooling, and mean equivalized household income across experimental periods. Statistically non-significant results of one-way analyses of variance with Bonferroni, Scheffe, and Sidak tests of multiple group differences support this observation.

#### 4.1.2 Multivariate Results

To assess whether the descriptive effects observed above also hold when controlling for potential confounding variables we present multivariate models in Table 5. The data of our dependent variable are count data of daily sales of packages of FT coffee suitable for poisson regression analyses or negative binomial regression analyses.<sup>12,13</sup> We assume that observa-

<sup>12</sup> Applying linear regression models to count outcomes (e.g., number of children in a family, number of articles published by scholars, etc.) can lead to inefficient, inconsistent, and biased estimates since count outcomes are not continuous, can only take on non-negative integer values, and are often not normally distributed (cf. Long, 1997, Ch. 8). In the standard model for count outcomes a poisson distribution is assumed to determine the probability of a count with equal conditional mean and conditional variance (Long, 1997, pp. 217-218). In effect however, this assumption of equidispersion is often violated and more variability is found in the data than predicted by the poisson distribution. If the variance is greater than the mean overdispersion occurs; using the standard poisson regression model can result in inefficient estimates with a potential overestimation of significant levels (Long, 1997, p. 230). In the negative binomial regression model an additional parameter allows for the conditional variance to exceed the conditional mean taking more unobserved heterogeneity in the data into account (Long, 1997, pp. 230-231).

<sup>13</sup> As can be seen from the last row in Table 4, overdispersion occurs in S1, S3, and jointly for all three supermarkets. Here, negative binomial regression models can be appropriate. Indeed, testing for overdispersion with  $H_0: \alpha = 0$  using a LR test (cf. Long, 1997, p. 237) in the multivariate models shows that for M1 ( $G^2 = 23.93$ ;  $p < 0.001$ ), S1 ( $G^2 = 9.27$ ;  $p < 0.001$ ), S3 ( $G^2 = 19.97$ ;  $p < 0.001$ ), and S1+S2 ( $G^2 = 13.15$ ;  $p < 0.001$ ) the negative binomial regression model is preferred to the poisson regression model. For S2, the poisson regression model is preferred ( $G^2 = 0.000$ ;  $p = 0.5$ ).

tions in each period are independent from each other since experimental conditions are stable within each period. Hence, we treat our data as repeated measurements rather than time series observations. Nevertheless, controlling for the day of the week we can mitigate potential autocorrelations. Finally, since experimental periods are quite short we assume that learning effects within each period are rather unlikely.

In all models, the three treatments enter the statistical model as dichotomous variables with value 1 if the respective treatment occurred and value 0 otherwise. The reference category comprises all non-treatment periods (i.e., baseline, control 1, control 2, and phase-out); that way we avoid comparing treatments 2 and 3 as well as the two control conditions between the treatments with the baseline condition.<sup>14</sup> In addition, the days of the sales week with Monday as reference category and two major public holidays Easter and Pentecost enter the model as dichotomous variables.<sup>15</sup> These additional covariates allow controlling for general increases in sales due to week-end shopping and family gatherings on holidays when general coffee consumption might increase. Finally, in the models comprising more than one supermarket we control for the differences in the assortment of (Fair Trade) coffees using a dichotomous variable with value 1 indicating the respective supermarket.

[Table 5 about here]

In Table 5 we present a joint model M1 for all three supermarkets and three separate models S1, S2, and S3 for each supermarket. In addition, we present model S1+S2 for the two urban supermarkets as these two are quite similar with regard to the assortment and price elasticities. Since we are interested in whether the three treatments have an effect on sales of FT coffee, raw coefficients as expected log count of the number of sold packages of FT coffees are shown in all models of Table 5.

Our multivariate models provide evidence supporting *Proposition 1* rather than *Propositions 2* and *3*. From *Proposition 1* on the positive effect of the price promotion we would expect a positive effect of treatment 2 on sales of FT coffees. In all models treatment 2 has a positive and statistically significant effect on the log number of expected sales of FT coffee when compared with non-treatment as reference category. However, the positive effects expected from additional information on Fair Trade (*Proposition 2*) and the appeal to customers' moral

<sup>14</sup> The results of models with the baseline condition as reference category and results of separate models for each treatment with pre and post control conditions are similar to the model presented in Table 5.

<sup>15</sup> The dichotomous variables for Easter and Pentecost have the value 1 for the sales week before the holiday and the value 0 otherwise.

obligation (*Proposition 3*) cannot consistently be found. In all models except for S2 we find a positive albeit statistically not significant effect of treatment 1; in model S2 the coefficient of -0.153 does not have the expected positive sign. The expected positive effects of treatment 3 is found in models M1, S1, S2, and S1+S2, but only in model S2 the effect is statistically significant close to the 10%-level ( $p = 0.09$ ).

With regard to the control variable *sales day* we find a positive effect of Saturdays in all models; only in S2 the effect is statistically not significant. As expected, the log number of expected sales for FT coffee increased at the end of the sales week when compared with Monday as reference category. The expected positive effect of increased sales around *Easter* and *Pentecost* is not supported by our data. We find a positive and statistically significant effect of Easter only in model S2; a statistically non-significant negative effect of Pentecost is found in all models. As was to be expected from the differences in the assortment and amount of FT coffees sold in the three *supermarkets*, S1 and S2 exert a positive effect on the log number of expected sales in model M1 when compared with S3 as reference category. We find a similar effect in model S1+S2 for S1 when S2 is the reference category.

In summary, our descriptive as well as multivariate results provide strong evidence for *Proposition 1*; the increase in sales of FT coffees when prices are reduced by 20% highlights consumers' economic constraints in ethical consumption. The expected positive effects of additional information on Fair Trade and of the appeal to consumers' moral obligation could not be found consistently for all supermarkets.

## 4.2 Customer Survey

Based on the data of our customer survey we contrast observed and self-reported purchases of FT coffee. We also analyze the effect of individual level determinants such as income, perceived price, trust, and norms on the purchase of FT coffee; the latter three determinants correspond to the price, information, and morals treatment in the field experiment.

### 4.2.1 Descriptive Results

With regard to the dependent variables, 54% of the respondents state that they have bought FT coffee at least sometime in the six months prior to the survey (see Table 3). Given the low market shares of FT products in Germany this figure is quite high; socially desirable response behavior found in conventional surveys might explain why respondents overstate their self-reported ethical consumption behavior. Contrary to the high levels of self-reported FT consumption, we observed only 19% of respondents to actually buy a FT coffee.

With regard to the independent variables that are related to our treatments in the field experiment, we find in Table 3 that respondents doubt that the money spent on FT products reaches producers and workers in developing countries (mean = 2.41). Most respondents agree with the statements that FT products are too expensive (mean = 2.24) and that they feel a moral obligation to buy FT products (mean = 2.55).

Comparing observed and self-reported purchase behavior of FT coffee in Table 6, we find a high and statistically significant association of both measures (Pearson  $\chi^2(1) = 10.627$ ,  $Pr = 0.001$ ). Respondents whom we observed to buy FT coffee are also more likely to state that they had bought FT coffee at least sometimes during the last six months. However, this finding has to be interpreted with some care since respondents who report to have bought FT coffee within the last six months might have bought FT coffee when we did not observe it; their answers are truthful nonetheless. On the other hand, we have a small group of five respondents who answered that they never buy FT coffee, but they actually bought a FT coffee. These customers might not be aware of the FT label and, hence, do not even know that they purchased an ethical product. Keeping the limitations of the sampling process in mind, Table 6 suggests some external validity of the survey answers on self-reported purchases of FT coffee.

[Table 6 about here]

Our data also allow us to test whether the treatments in the field experiment have an effect on answers in the survey. This would be indicated by higher values on the survey items that are related to the field experiment. The analyses presented in Table A2 in the Appendix do not show such an effect. Descriptively, customers do not express more trust in FT in the information treatment, do not have lower beliefs that FT products are too expensive in the price treatment, and do not show stronger feelings of moral obligation in the morals treatment of the field experiment. An analysis of variance and test of multiple group differences (Bonferroni, Scheffe, and Sidak tests) support this observation with statistically non-significant results.

#### 4.2.2 Multivariate Results

In Table 7 we present the results of binary logit models for self-reported purchase behavior of FT coffee and for observed purchase behavior of FT coffee.<sup>16</sup> To assess the stability of effects for the three variables, which are related to the experimental treatments, we first present models including each variable separately followed by a full model containing all three variables. The models show that self-reported FT consumption is significantly affected by customers' trust in FT, price perception, and moral obligation to purchase FT coffee and FT products. Respondents' trust that FT organizations distribute the money to small-scale producers and a feeling of moral obligation to purchase FT products have a positive effect on self-reported FT consumption, whereas the belief that FT products are too expensive has a negative effect. If we include all three determinants in one model, it is the effect of the moral norm that remains statistically significant. Trust and price perceptions lose statistical significance.

The results for the observed purchase behavior are similar. Trust in FT, price perception, and moral obligation to purchase FT products have statistically significant effects when estimated in separate models. Including all three determinants in one model, we find a highly statistically significant effect of the moral norm and a weakly significant effect of trust.

The findings with regard to the additional variables from Table 3 are presented in Table A3 in the Appendix; the binary logit models for self-reported and observed consumption of FT coffee include all additional variables and fixed effects (binary variables) for treatment phases of the field experiment. Due to missing values case numbers in the models reduce to 121. Overall, we find two statistically significant effects. These effects are very stable across models; they are present, for example, with and without including each of the variables trust, perceived price and moral norm, which are related to the experiment. First, we find a positive and statistically significant effect of education on the self-reported consumption of FT coffee. This finding is in line with previous studies on self-reported ethical consumption, which tentatively suggest that ethical consumers are rather well educated (e.g., Papaoikonomou et al., 2011). Second, respondents' subjective financial situation has a significant effect on observed purchase of FT coffee. In other words, the more positive customers perceive their financial situation, the higher the likelihood that they purchase ethical products. Notably, income does not

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<sup>16</sup> For the dependent variables self-reported consumption of FT coffee, ordered logit models and multinomial logit models that take the ordinal and categorical nature of the underlying variables into account, do not reveal noteworthy different results regarding effects (sign and significance) of relevant independent variables. We opted for a binary logit model because it is in line with the binary variable regarding observed purchases of FT coffee.



affect self-reported and observed purchase behavior. It is rather respondents' perception of FT product prices being too high than the actual budget constraint (i.e. households income) that influences FT consumption. The missing income effect is in line with studies on the purchase of ethical consumer goods such as environmental goods (e.g., authors; see Pampel and Hunter 2012 for a discussion).

Taken together, these findings support the relevance of our experimental treatments – information, price, and morals – for self-reported and observed FT consumption on the individual level. Among these three variables, and contrary to the field experiment, morals show the strongest effect.

[Table 7 about here]

## 5. Summary and Discussion

Contributing to the interdisciplinary field of research on ethical consumption in the social sciences the primary concern of our study was to investigate actual FT consumption using a field experiment. Conducted in three German supermarkets over a five-month period we used a quasi-experimental before-and-after-design to study the effect of three treatments – additional information on Fair Trade; price promotion of 20%; and a moral appeal to buy FT coffee – on the actual purchase of ground Fair Trade coffee. Complementing the sales data from the field experiment with a customer survey we substantially extended the research design of previous studies (e.g., Arnot et al., 2006; Hainmueller et al., 2014; Kimeldorf et al., 2006). Investigating individual level motivations for FT consumption we were able to contrast observed (ethical) buying behavior at the check-out with customers' self-reported frequency of purchasing FT coffee in the survey.

Our results from the field experiment suggest that reduced product price did have the expected positive effect on FT consumption whereas additional information on Fair Trade and an appeal to consumers' moral obligation to buy Fair Trade coffee did not. In all three supermarkets sales of FT coffee increased significantly during a three-week price promotion. The expected increases in sales during the other two treatments could not be found in all three supermarkets and were statistically not significant.

Contrary to the field experiment, results from the customer survey show that trust in FT, which is related to information about FT, subjective price perception and a personal norm as feelings of moral obligations to buy FT products affect self-reported and observed purchase

behavior regarding FT products; the personal norm exerts the strongest effects. It is noteworthy that income does not affect self-reported and observed purchase behavior. Taken together the results of individual-level determinants in the customer survey support the relevance of information/trust and moral norms and, hence, suggest that the treatments in the field experiment (additional information and moral appeal) were not able to ‘address’ this relevance.

One reason for this finding could be that in the field experiment, where only the price promotion had an effect, the reduced price has attracted new customers who bought FT coffee for the first time. However, it seems that they did not buy FT coffee for ethical reasons but simply due to the price offer; potential new customers seemed not to be attracted by additional information and a moral appeal. The sales share of FT coffee in S1 at the baseline level prior to the experimental interventions and the customer survey suggest that there is a segment of FT customers who purchase FT products (at least sometimes) for ethical reasons. These regular FT coffee consumers might have taken the opportunity to purchase more units of their preferred product for a lower price during the price promotion; but then, they were not attracted to FT products for their lower prices in the first place.

The customer survey tentatively suggests that the respondents buying FT coffee in the baseline condition of the field experiment exhibit a relatively strong trust that the money they spent on FT products reaches producers and workers in developing countries (median of 3.5 on a four-point response scale). All other customers surveyed in S1 during the baseline condition exhibit a somewhat lower, but still high, level of trust (median of 3). Hence, the impact of the information treatment in our study could be limited since there is some evidence that prior to the experiment the FT label and trust in FT programs have already been well established among regular FT consumers as well as all other consumers.<sup>17</sup>

With regard to the moral appeal treatment we referred to Schwartz (1977) norm-activation model and argued that a personal norm of moral obligation is converted into actual behavior if this norm is newly formed or an already existing norm is activated. Hence, there are two scenarios that might explain the limited effect of the moral encouragement in our study. First, appealing to customers’ morals in the context of supermarket shopping might not suffice to form a new commitment. Other contexts, however, could encourage the formation of such obligations; so far there is little research on how social contexts such as educational courses

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<sup>17</sup> In the customer survey we did not explicitly ask about customers’ trust in the FT label to avoid drawing attention to our field experiment. However, in the baseline condition 128 customers answered the item “I doubt that the money spent on fair trade products actually reaches the small-scale producers and laborers.” (1=not apply at all; 4=fully apply). The mean and median of the re-coded item (i.e., higher values meaning higher trust) is 3.5 for the four customers whom we observed to buy FT coffee (N=4). For the other respondents (N=124) the mean of the re-coded item is 2.5 with a median of 3.

inside and outside of academic institutions, membership in political and/or religious organizations, or social approval from family and peers facilitate the formation of moral commitments in ethical consumption (see for example Jaeger and Rose, 2008; Carlsson et al., 2010; authors). Second, using the moral appeal to activate already existing moral obligations for a particular ethical consumption decision might not work if customers already understand FT as an ethical issue that aims at consumers' ethical engagement. Hence, the moral appeal does not add any additional moral impetus to their already existing ethical consumption commitments and behavior.

In other words, for the regular FT customers the information treatment and moral appeal seem not to have added new knowledge or moral impetus to their already existing ethical consumption behavior. From this perspective these two experimental interventions could only substantially affect consumers who do not already buy FT coffee but are generally susceptible to FT ideas. However, the majority of respondents in our study do trust FT ideas and this might weaken the effects of the information treatment and moral appeal in the field experiment.

With respect to the field experiment, Fazio's (1986; 1990) work on the cognitive processes that are involved when individual attitudes translate into behavior can also be instructive. Purchases during the price treatment can be conceptualized in a spontaneous and automatic manner of routine shopping and even resemble habitual bargain hunting; purchasing FT coffee during the other two treatments pertains more to planned and reflected ethical consumption decisions, which potentially involve more costs and reflection on subjects' ethical attitudes and motivations.<sup>18</sup> Set for routine shopping, customers might not have the opportunity or the motivation for deliberative information processing during the information treatment and the moral appeal; or the association between their evaluation of FT concerns and FT coffee is not strong enough to translate into a more or less spontaneous purchase of FT products.

In any case, it is likely that we capture the established segment of regular FT customers in the survey because they are more likely to be observed to buy FT products. Hence, when con-

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<sup>18</sup> In his scholarly work Fazio (1986; 1990) focuses on the question how attitudes translate into behavior and which cognitive processes are involved in linking them. Initially a spontaneous four-step processing model in which individuals pass from (1) the activation of an attitude from memory to (2) perceptions of the object in question in the immediate situation to (3) the definition of the event to (4) subsequent behavior was proposed. Subjective norms may interfere with the immediate perception of an object resulting in an inconsistency between attitude and behavior. Assuming that the activation and selective perception does not involve conscious effort, the automatic activation of attitudes is the crucial first step of the model and relies on a strong association between the object and its evaluation. Integrating planned and deliberative attitude-behavior models such as Ajzen's (1991) Theory of Planned Behavior, Fazio (1990) conceptualized the MODE model. Two conditions influence whether the process is spontaneous and automatic or planned and deliberative; a deliberative process is motivated by the consequences and costs of the behavior for the individual (motivation) and can be hampered by a lack of opportunity (e.g., time pressure) to do so. Is either one condition missing, attitude translates into behavior via an automatic process. See Ajzen (2008) for a general account of the MODE model in consumer behavior.

trasting FT consumers vs. non-FT consumers we find evidence for all three determinants: information, price and moral. In the field experiment however, we find an effect for customers for whom price is decisive and/or FT consumers who purchase more units of their preferred product for a lower price.

Other field experiments using similar research designs have found a positive effect of additional information such as display signs or labels on consumers' ethical purchasing decisions (Hainmueller et al, 2014; Hainmueller and Hiscox, 2012a; Hainmueller and Hiscox, 2012b; Hiscox et al., 2011; Hiscox and Smyth, 2011). These discrepant findings might be due to a different level of customers' information on the ethical product attributes in the baseline situation of the experiments. Compared to our study, the level of customer information prior to the information treatment is comparatively low in the above mentioned studies; either a new ethical product is introduced to the market (purchasing FT coffee in online auctions on eBay; Hiscox et al., 2011); or already available ethical products have not been marketed before with information about their ethical attributes (towels and candles in a retail store; Hiscox and Smyth, 2011; women's attire and jeans in fashion stores; Hainmueller and Hiscox, 2012a and 2012b); or information on the products' ethical attributes has been removed several weeks before the experiment (Fair Trade coffee in supermarket bulk bins; Hainmueller et al., 2014). Hence, we suspect that with such a set-up labeling a product or installing display signs provides customers with a stronger stimulus than adding a display sign to an already existing assortment of ethically labeled products as was the case in our study. Clearly, more studies are needed to investigate this supposition.

The combination of field experiment and customer survey proved to be a fruitful extension of previous designs to investigate actual FT consumption while taking the potential problem of social desirability into account and shedding light on individual level motivations of ethical consumers. Nonetheless, our study does have its own limitations.

First, the comparability of the three treatments in the field experiment is not straightforward. The price reduction is easy to quantify and customers are used to settings of price promotion in supermarkets. By contrast, the information treatment and the moral appeal can hardly be quantified in the same way as the 20% price reduction; both treatments are somewhat unusual for a retail setting in supermarkets.

Second, the effects of the information treatment and moral appeal might be more pronounced if treatment signs were more distinctive and drew more attention in the conventional super-

market setting allowing customers to access their evaluations of ethical consumption more easily. However, since we wanted to ensure maximum comparability between the treatments we set them up as similar as possible. By the same token, the two stimuli might seem to be intertwined since the “neutral” information treatment does also have a moral component that is inherent to the general cause of the FT concept. However, in our design we tried to counterbalance this problem with the explicit appeal to customers to buy FT coffee and alleviate poverty in developing countries during the morals treatment. Distinct from mere additional information in the information treatment we focused on the activation and formation of the subjects’ moral obligation.

Third, a randomization of the treatments over six supermarkets would have been preferable. Due to limited resources the three treatments were implemented in the same order simultaneously in the three supermarkets allowing for possible ordering or carry-over effects. To mitigate this shortcoming we implemented three-week control conditions between treatments and used the sales in the non-treatment conditions as reference category in our multivariate models.

Fourth, with our research design we were able to measure the impact of the three experimental conditions on an already existing baseline level of ethical consumption. To be able to assess their importance as determinants of FT coffee consumption as a whole it would be desirable to have an experimental setting where FT coffee and other FT products are introduced as new product options for supermarket customers (see for example Hiscox and Smyth, 2011). This might reduce the discrepancy between experimental and survey results. All the same, it is not possible to neutralize consumers’ previously acquired knowledge and moral obligations with regard to FT commodities.

Fifth, the generalizability of our results is limited to the retail setting of the three supermarkets, the non-random sample of customers there, and ground FT coffee as treatment product. Particularly, the treatment effects might be different in the setting of a discounter store where customers are potentially more price-sensitive. Existing evidence of the relation between income and self-reported/stated ethical consumption is mixed with some studies finding none (e.g., DePelsmacker et al., 2006; Sunderer and Rössel, 2012) and others finding a positive effect (e.g., Cailleba and Casteran, 2010; Hertel et al., 2009). In this regard our customer survey showed that income does not significantly affect self-reported and observed purchases of FT products. Yet, price perception and subjective financial situation have considerable effects.

The customer survey does have some limitations in itself. Our analyses are not based on a random sample of customers which is preferable to our sampling strategy by customer type. We observed FT purchases in a systematic manner and only at one point in time. The comparison of self-reported and observed behavior is limited by this fact. In addition, it would have been desirable to have more observations for type 1 and type 2 customers for the treatment and control condition of the field experiment. Nevertheless, we are convinced that the comparison based on our data still shows insightful results. Clearly, future studies should avoid such bias.

We chose to focus on FT coffee in our field experiment since it is the oldest and most widely available certified FT product in the German market. Due to the pronounced substitution effects of customers to changes in the price of coffee and the potential for stocking-up on FT coffee during price promotions additional studies with different FT products are needed to assess the effect of product price, additional information, and moral appeal more thoroughly. Future research would not only benefit from analyzing the effect of the three treatments on different FT products using a unified field experimental design but also from investigating stepwise increases and decreases in the price of FT products. Since our price treatment was a single and fixed price reduction of 20% we cannot tell whether sales would decrease as predicted by standard economic models if prices were increased by 20%. The field experiment by Hainmueller et al. (2014) suggests that there is indeed a segment of consumers that pays a higher premium of 9% for FT coffees. Likewise, we did not investigate whether price reductions of 40%, 50% or 60% would increase sales even more or whether sales would decrease because customers perceive such price promotions to be signals for the products' ethical virtues and ethical production standards.

With regard to practical policy measures our field experiment suggests that in a supermarket setting it is not so much customers' need for additional information or the activation of moral obligations but rather the price of FT coffee that motivate ethical consumption. While reducing the overall price of FT products might not be a feasible measure, influencing consumers' ethical product choices, providing more information and appealing to consumers' moral obligations prior to and outside of the routine shopping in supermarkets might prove to be useful starting points for strategies that are to expand individual FT consumption. In this regard findings from the customer survey show that on the individual level especially moral obligations determine purchase behavior.

Table 1: Regular and reduced prices of ground Fair Trade coffee and summary statistics of conventional and organic-only ground coffee

	Supermarket		
<b>Fair Trade Coffee</b>	S1	S2	S3
FT Coffee 1 O (500g)	6.99 (5.59)	6.99 (5.59)	6.99 (5.59)
FT Coffee 2 (500g)	6.49 (5.19)	6.99 (5.59)	6.49 (5.19)
FT Coffee 3 O (500g)	5.69 (4.59)	6.99 (5.59)	6.99 (5.59)
FT Coffee 4 (500g)	-	6.99 (5.59)	-
FT Coffee 5 (500g)	-	6.95 (5.59)	-
FT Coffee 6 (250g)	3.79 (3.09)	3.79 (3.09)	-
FT Coffee 7 O (250g)	4.49 (3.59)	4.49 (3.59)	-
FT Coffee 8 O (250g)	4.49 (3.59)	4.49 (3.59)	-
FT Coffee 9 O (250g)	4.49 (3.59)	-	-
FT Coffee 10 O (250g)	4.29 (3.49)	-	-
FT Coffee 11 O (250g)	4.29 (3.49)	-	-
FT Coffee 12 O (250g)	4.29 (3.49)	-	-
Average Price	7.94 (6.40)	7.56 (6.06)	6.82 (5.46)
<b>Conventional Coffees</b>	N = 39	N = 40	N = 39
Highest Price	6.99	6.99	6.99
Lowest Price	3.49	3.49	3.49
Average Price	5.01	4.97	4.95
<b>Organic Coffees</b>	N = 4	N = 4	N = 3
Highest Price	6.99	6.49	5.99
Lowest Price	4.59	4.59	4.59
Average Price	6.11	5.61	5.37

Notes: Prices in EUR; price reduction of 20% for FT coffees in parentheses; O = FT Coffees is also certified and labeled organic. Average prices of FT coffees are calculated with doubling the price of the 250g packages to give them the same weight as the standard 500g packages. Average prices of conventional and organic coffees refer to the whole period of the experiment including price promotions set by the supermarkets.



Table 2: Number of respondents in the customer survey in S1 per customer type

Customer Types	Supermarket S1
Buyers of FT coffee (type 1)	43 (36)
Buyers of non-FT coffee (type 2)	178 (155)
Buyers of other FT products (type 3)	115 (-)
Other customers (type 4)	637 (-)
Total	973 (191)

Notes: The number in parentheses refers to the sample of respondents which is used in the multivariate analysis.

Table 3: Wording of items and summary statistics for the customer survey from supermarket S1

<i>Dependent Variables (N=191)</i>		<b>Mean (S.D.) Min-Max</b>
Consumption of FT coffee <sup>a</sup> (self-reported)	How often within the last six months have you bought Fair Trade coffee? We mean coffee obtained from fair trade for which small-scale farmers in developing countries receive a price which covers their living costs. ( <i>never; sometimes; often; very often; don't know</i> ); recoded 1 = sometimes, often, very often; 0 = never	<b>0.54</b>
Consumption of FT coffee (observed)	Binary variable with value 1 if the interviewer observed that the respondent bought a Fair Trade coffee, value of 0 if the interviewer observed that the respondent did not buy a Fair Trade coffee	<b>0.19</b>
<i>Variables Related to the Field Experiment (N=191)</i>		
Trust in FT	I doubt that the money spent on fair trade products actually reaches the small-scale producers and laborers.* ( <i>not apply at all, rather not apply, rather apply, fully apply</i> )	<b>2.41</b> (0.90) 1-4
Perceived Price of FT Products	In my opinion Fair Trade products are too expensive. ( <i>not apply at all, rather not apply, rather apply, fully apply</i> )	<b>2.24</b> (0.80) 1-4
Personal Norm	I feel a moral obligation to buy fair trade products. ( <i>not apply at all, rather not apply, rather apply, fully apply</i> )	<b>2.55</b> (0.89) 1-4
<i>Additional Variables</i>		
Gender (N=189)	0=male; 1=female	<b>0.64</b>
Age (years, N=187)		<b>49.15</b> (16.60) 14-94
Education (years of schooling, N=180)	7=left without degree/still at school age 14 or 15, 9=graduated after 9 years/still at school age 16, 10=graduated after 10 years/still at school at age 17, 12=graduated after 12 years and qualifying for university of applied sciences admission or matriculation/still at school at age 18, 13=graduated after 13 years and qualifying for university admission or matriculation, 16=graduated from university of applied sciences after 16 years, 18=graduated from university after 18 years	<b>14.40</b> (3.47) 7-18
Equivalized disposable income (EUR, N=126)	Monthly disposable household income divided by the square root of the number of persons living in the household.	<b>1596.01</b> (973.96) 100-4242.64
Perceived Financial Situation (N=176)	How would you describe your financial situation at the moment? ( <i>very bad, kind of bad, pretty good, very good</i> )	<b>2.89</b> (0.67) 1-4

Notes: \* Negatively keyed item was re-coded for further analyses; <sup>a</sup> Answer category "don't know" re-coded as missing value.

Table 4: Sales and share of ground Fair Trade coffee per supermarket

Period	S1	S2	S3	Total
	Sales FT Coffee Sales All Coffee Share FT Coffee	Sales FT Coffee Sales All Coffee Share FT Coffee	Sales FT Coffee Sales All Coffee Share FT Coffee	Sales FT Coffee Sales All Coffee Share FT Coffee
Baseline	<b>71</b> 1037 0.07	<b>31</b> 1000 0.03	<b>20</b> 621 0.03	<b>122</b> 2658 0.05
T 1 Information	<b>93</b> 1395 0.07	<b>34</b> 1309 0.03	<b>18</b> 1088 0.02	<b>145</b> 3792 0.04
Control 1	<b>88</b> 902 0.10	<b>32</b> 952 0.03	<b>23</b> 735 0.03	<b>143</b> 2589 0.06
T 2 Price -20%	<b>207</b> 1582 0.13	<b>54</b> 1274 0.04	<b>30</b> 981 0.03	<b>291</b> 3837 0.08
Control 2	<b>98</b> 1087 0.09	<b>32</b> 1107 0.03	<b>17</b> 830 0.02	<b>147</b> 3015 0.05
T 3 Moral Appeal	<b>90</b> 1621 0.06	<b>46</b> 1850 0.02	<b>16</b> 1312 0.01	<b>152</b> 4783 0.03
Phase-out	<b>88</b> 920 0.10	<b>39</b> 856 0.05	<b>16</b> 589 0.03	<b>143</b> 2365 0.06
Total	<b>735</b> 8535 0.09	<b>268</b> 8348 0.03	<b>140</b> 6156 0.02	<b>1143</b> 23039 0.05
$\mu$ ; $\sigma$	$\mu=6.02$ ; $\sigma=17.1$	$\mu=2.21$ ; $\sigma=2.6$	$\mu=1.16$ ; $\sigma=2.5$	$\mu=3.14$ ; $\sigma=11.8$

Notes:  $\mu$ = mean;  $\sigma$ = variance over the whole five-month period of the field experiment. Numbers in the cells are based on daily sales data of the treatment coffees and are added up for each project phase. Assortment of FT coffees varies for each supermarket as indicated in Table 1 (S1=10; S2=8; S3=3).

Table 5: Multivariate models for the field experiment

	M1	S1	S2	S3	S1+S2
<b>Treatment</b> (ref = non-treatment)					
T 1 Information	0.100 (0.13)	0.208 (0.15)	-0.153 (0.24)	0.209 (0.40)	0.108 (0.13)
T 2 Price -20%	0.729*** (0.11)	0.851*** (0.14)	0.553*** (0.19)	0.737** (0.37)	0.761*** (0.11)
T 3 Moral Appeal	0.062 (0.11)	0.007 (0.14)	0.292* (0.17)	-0.115 (0.36)	0.106 (0.11)
<b>Sales Day</b> (ref = Monday)					
Tuesday	-0.100 (0.13)	0.154 (0.16)	-0.673** (0.24)	-0.082 (0.43)	-0.085 (0.14)
Wednesday	-0.256* (0.14)	-0.244 (0.17)	-0.272 (0.21)	-0.242 (0.43)	-0.262* (0.14)
Thursday	-0.181 (0.14)	-0.055 (0.17)	-0.326 (0.22)	-0.355 (0.45)	-0.155 (0.14)
Friday	0.100 (0.13)	0.201 (0.16)	-0.029 (0.20)	0.012 (0.42)	0.113 (0.13)
Saturday	0.496*** (0.12)	0.515*** (0.15)	0.169 (0.19)	0.963** (0.38)	0.391** (0.13)
<b>Easter</b> (ref = no)	0.176 (0.24)	-0.200 (0.32)	0.896** (0.36)	-0.155 (0.80)	0.205 (0.25)
<b>Pentecost</b> (ref = no)	-0.082 (0.17)	-0.026 (0.21)	-0.157 (0.29)	-0.283 (0.59)	-0.051 (0.17)
<b>Supermarket</b> (ref = S3 or S2)					
S1	1.643*** (0.10)				0.982*** (0.08)
S2	0.664*** (0.11)				
Intercept	-0.062 (0.13)	1.471*** (0.13)	0.799*** (0.15)	-0.138 (0.32)	0.599*** (0.12)
Pseudo-R <sup>2</sup>	0.16	0.09	0.07	0.05	0.14
N	364	122	121	121	243

Notes: \*p< 0.1; \*\* p<0.05; \*\*\* p<0.001; raw coefficients as expected log count of number of sold packages of FT coffees with s.e.in parentheses. Models are negative binomial regression models, only S2 is a poisson regression model (see FN 12 and FN 13).

Table 6: Association between observed and self-reported FT coffee consumption

		Self-reported consumption: Purchase of FT coffee no=never; yes=sometimes, often, very often		Total
		No	Yes	
Observed consumption behavior: Purchase of FT coffee	No	<b>82</b>	73	155
		52.90	47.10	100
		94.25	70.19	81.15
	Yes	5	<b>31</b>	36
		13.89	86.11	100
		5.75	29.81	18.85
Total	87	104	191	
	45.55	54.45	100	
	100	100	100	

Notes: Each cell contains the absolute number (first value), row percentages of observed FT consumption behavior (second value), and column percentages of self-reported FT consumption (third value).

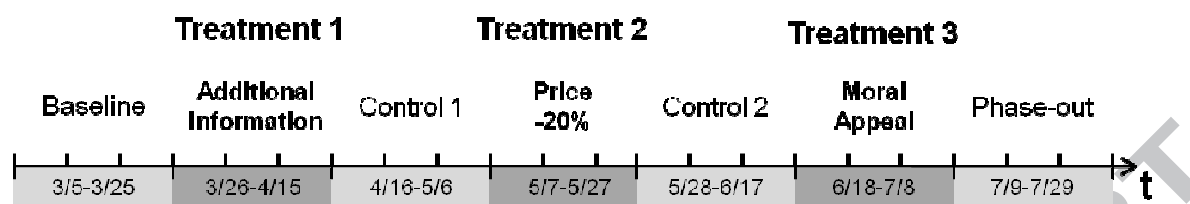
Pearson chi2 (1) = 10.627, Pr = 0.001.

Table 7: Multivariate models for the customer survey

	Binary logit model for purchase of FT Coffee							
	Self-reported	Self-reported	Self-reported	Self-reported	Observed	Observed	Observed	Observed
<b>Variables Related to Experiment</b>								
Trust in FT	0.476** (0.18)			0.255 (0.22)	0.936** (0.29)			0.590* (0.34)
Perceived Price of FT Products		-0.501** (0.19)		-0.282 (0.24)		-0.857** (0.28)		-0.519 (0.39)
Personal Norm			0.630*** (0.18)	0.551** (0.19)			0.975*** (0.25)	0.820** (0.25)
McFadden R <sup>2</sup>	0.062	0.058	0.081	0.104	0.155	0.128	0.162	0.229
N	191	191	191	191	191	191	191	191

Notes: \*p< 0.1; \*\* p<0.05; \*\*\* p<0.001; robust s.e (Huber-White sandwich estimator) in parentheses. All models include fixed effects (binary variables) for treatment phases; the first treatment phase is the reference category.

Figure 1: Overview of the research design (March – July 2012)

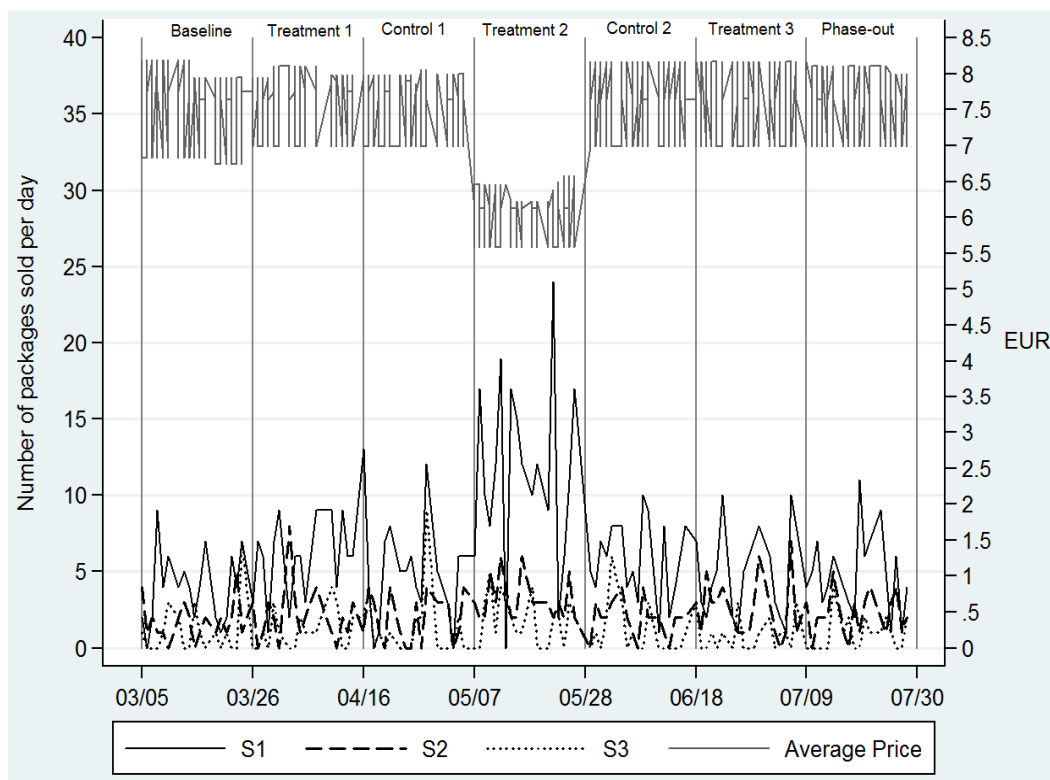


Notes: Each phase of the research design is three weeks long.



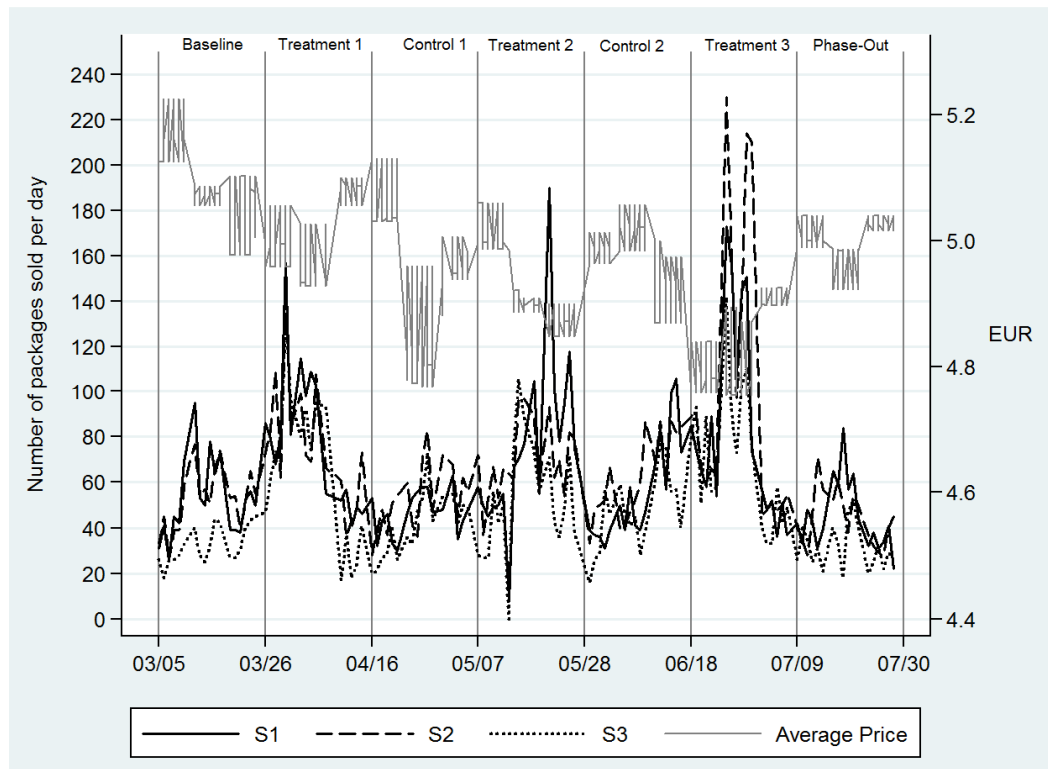
Figure 2: Daily sales data for Fair Trade coffees, selected conventional coffees, organic coffees, and other Fair Trade product per supermarket

(2a) Fair Trade coffees



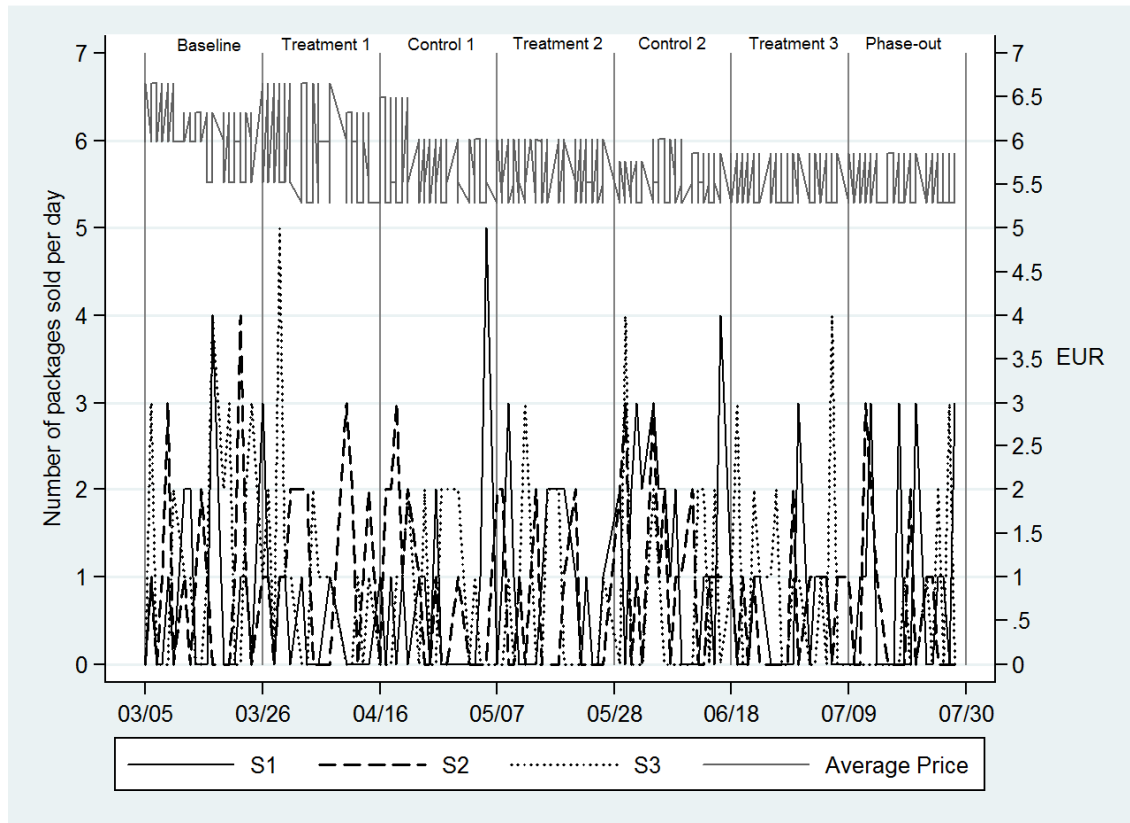
Notes: Price of FT coffees averaged over all three supermarkets with price of 250 g packages doubled to be comparable to the standard size of 500g.

## (2b) Conventional coffees



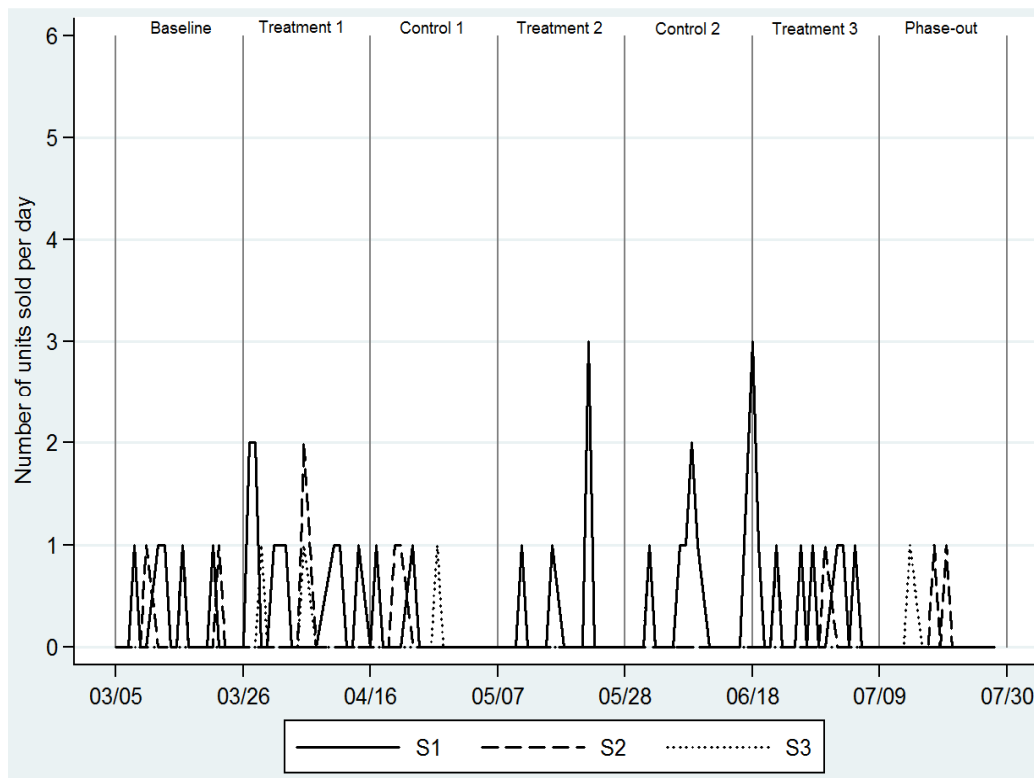
Notes: Price of conventional coffees averaged over all three supermarkets.

(2c) Organic coffees



Notes: Price of organic coffee averaged over all three supermarkets

## (2d) Other Fair Trade product



Notes: For S1 and S2 sales data of FT chocolate bar and for S3 sales data for FT tea are displayed. Prices were stable at 1.79 EUR (FT chocolate) and 6.99 EUR (FT tea) over the five-month period.

## Appendix

Table A1: Socio-demographics of survey respondents in S1 (N=973) by periods in the field experiment

Period	Gender <sup>a</sup> ref. male N	Age <sup>b</sup> mean (S.D.) N	Education <sup>b</sup> mean (S.D.) N	Income <sup>b</sup> mean (S.D.) N
Baseline	0.70 134	50.78 (16.99) 133	14.76 (3.40) 130	1654.26 (1009.01) 84
<b>T 1 Information</b>	0.62 235	49.35 (16.20) 231	15.12 (3.21) 226	1765.79 (970.97) 173
Control 1	0.62 107	45.67 (15.42) 105	14.75 (3.29) 102	1763.31 (984.80) 74
<b>T 2 Price -20%</b>	0.71 161	48.26 (15.09) 160	15.21 (3.19) 153	1836.76 (1082.30) 118
Control 2	0.69 81	48.27 (13.62) 79	15.05 (3.39) 80	1851.87 (1042.87) 57
<b>T 3 Moral Appeal</b>	0.70 165	47.21 (15.73) 164	15.27 (3.20) 161	1717.68 (964.91) 135
Phase-out	0.65 62	44.31 (16.58) 62	14.95 (3.22) 61	1593.86 (827.90) 44

Notes: N = absolute number of respondents per period; education in years of schooling; income as monthly equivalized disposable household income in EUR. See Table 3 for exact wording of the survey items; <sup>a</sup> Pearson  $\chi^2(6) = 7.0734$ ,  $Pr = 0.314$ ; <sup>b</sup> One-way analysis of variance and Bonferroni, Scheffe, and Sidak tests of multiple group differences yield statistically non-significant results.

Table A2: Effect of treatment conditions in the field experiment on survey responses from S1

Period	Trust in FT mean (S.D.) N	Perceived Price of FT Products mean (S.D.) N	Personal Norm mean (S.D.) N
Baseline	2.63 (0.84) 60	2.25 (0.75) 60	2.63 (0.82) 60
<b>T 1 Information</b>	2.63 (0.86) 118	2.25 (0.81) 118	2.60 (0.81) 118
Control 1	2.58 (0.80) 53	2.19 (0.76) 53	2.74 (0.90) 53
<b>T 2 Price -20%</b>	2.56 (0.85) 89	2.19 (0.75) 89	2.66 (0.81) 89
Control 2	2.71 (0.82) 31	2.23 (0.92) 31	2.77 (0.76) 31
<b>T 3 Moral Appeal</b>	2.47 (0.86) 96	2.24 (0.76) 96	2.77 (0.75) 96
Phase-out	2.58 (0.76) 31	2.23 (0.62) 31	2.71 (0.90) 31

Notes: N = absolute number of respondents per period. Four-point response scale: not apply at all (= 1), rather not apply, rather apply, fully apply (= 4). See Table 3 for exact wording of the survey items. Only those respondents who report to drink coffee (N=478) are included because the field experiment focused on the purchase of FT coffee. One-way analysis of variance and Bonferroni, Scheffe, and Sidak tests of multiple group differences yield statistically non-significant results for all three determinants trust, perceived price and personal norm. The results are the same if the analyses are not restricted to the sample of coffee drinkers (N=552).

Table A3: Multivariate models for the customer survey including additional variables

	Binary logit model for purchase of FT Coffee							
	Self-reported	Self-reported	Self-reported	Self-reported	Observed	Observed	Observed	Observed
<b>Variables Related to Experiment</b>								
Trust in FT	0.733** (0.27)			0.437 (0.30)	1.124** (0.42)			0.863* (0.49)
Perceived Price of FT Products		-0.814** (0.30)		-0.506 (0.34)		-0.776** (0.38)		-0.190 (0.48)
Personal Norm			0.661** (0.27)	0.406 (0.28)			1.188** (0.38)	0.969** (0.41)
<b>Socio-demographic Variables</b>								
Gender (ref. male)	0.460 (0.57)	0.498 (0.45)	0.248 (0.45)	0.452 (0.47)	-0.290 (0.57)	-0.174 (0.55)	-0.248 (0.58)	-0.289 (0.61)
Age in years	-0.001 (0.01)	-0.003 (0.01)	0.003 (0.01)	-0.001 (0.01)	-0.040* (0.02)	-0.038* (0.02)	-0.032 (0.02)	-0.038 (0.02)
Education in years of schooling	0.184** (0.07)	0.187** (0.07)	0.190** (0.07)	0.170** (0.07)	0.062 (0.10)	0.088 (0.09)	0.045 (0.10)	0.012 (0.10)
Equivalized Household Income (ln)	0.132 (0.29)	0.298 (0.30)	0.155 (0.30)	0.221 (0.31)	-0.118 (0.44)	0.163 (0.42)	-0.112 (0.43)	-0.129 (0.48)
Perceived Financial Situation	0.217 (0.36)	0.099 (0.36)	0.264 (0.36)	0.121 (0.37)	0.964* (0.49)	0.941* (0.50)	1.262** (0.55)	1.189** (0.56)
Intercept	-6.580 (3.02)	-3.740* (2.17)	-6.690** (2.24)	-5.962** (2.45)	-6.795** (3.02)	-4.579 (2.92)	-7.983** (3.20)	-8.447** (3.49)
McFadden R <sup>2</sup>	0.198	0.197	0.190	0.230	0.232	0.193	0.258	0.301
N	121	121	121	121	121	121	121	121

Notes: \*p< 0.1; \*\* p<0.05; \*\*\* p<0.001; robust s.e (Huber-White sandwich estimator) in parentheses. All models include fixed effects (binary variables) for treatment phases; the first treatment phase is the reference category.



Figure A1: Examples of experimental setup during (a) treatment and (b) non-treatment conditions

(a) Treatment conditions



(b) Non-treatment conditions



Figure A2: Treatment 1 – Additional information

**FAIR TRADE – FAIRER HANDEL**



**Kaffee aus Fairem Handel**

- Gerechte Entlohnung
- Verbesserte Lebensbedingungen für Kleinbauern
- Keine illegale Kinderarbeit

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Figure A3: Treatment 2 – Price reduction 20%



**FAIRTRADE**

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**PREISAKTION**  
**Fair Trade Kaffee**

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statt . Sie sparen 20%

Figure A4: Treatment 3 – Moral appeal

**FAIR TRADE – FAIRER HANDEL**



**Viele Kaffeebauern und ihre Familien haben nicht genug zum Leben.**

**Kaufe Kaffee aus fairem Handel und bekämpfe die Armut in Entwicklungsländern!**

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## References

- Akerlof, G.A., 1970. The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics* 84, 488–500.
- Ajzen, I., 2008. Consumer attitudes and behavior. In: Haugtvedt, C.P., Herr, P.M., Kardes, F.R. (Eds), *Handbook of consumer psychology*. Erlbaum, New York, pp. 525–548.
- Ajzen, I., 1991. The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes* 50, 179–211.
- Arnot, C., Boxall, P.C., Cash, S.B., 2006. Do Ethical Consumers Care About Price?: A Revealed Preference Analysis of Fair Trade Coffee Purchases. *Canadian Journal of Agricultural Economics* 54, 555–565.
- Battalio, R.C., J.H. Kagel, Kogut, C.A., 1991. Experimental Confirmation of the Existence of a Giffen Good. *The American Economic Review* 81, 961–970.
- Basu, A.K., Hicks, R.L., 2013. Poverty Alleviation through Social Labeling Programs? Information Valuation and Willingness to Pay for Fair Trade Coffee. Working Paper. Available at <http://www.maxwell.syr.edu/uploadedFiles/econ/seminars/Basu%20-%20Fair%20Trade-0413.pdf>
- Basu, A.K., Hicks, R.L., 2008. Label performance and the willingness to pay for Fair Trade coffee: a cross-national perspective. *International Journal of Consumer Studies* 32, 470–478.
- BMU/Bundesministerium für Umwelt Naturschutz und Reaktorsicherheit, 2006. Umweltbewusstsein in Deutschland. Ergebnisse einer repräsentativen Bevölkerungsumfrage, Berlin.
- Boonman, M., Huisman, W., Sarrucco-Fedorovtsev, E., Sarrucco, T., 2011. Fair Trade Facts and Figures. A Success Story for Producers and Consumers: Prepared on behalf of the Dutch Association of Worldshops, Culemborg.
- Bray, J., Johns, N., Kilburn, D., 2011. An Exploratory Study into the Factors Impeding Ethical Consumption. *Journal of Business Ethics* 98, 597–608.
- Cailleba, P., Casteran, H., 2010. Do Ethical Values Work?: A Quantitative Study of the Impact of Fair Trade Coffee on Consumer Behavior. *Journal of Business Ethics* 97, 613–624.
- Carlsson, F., Garcia, J. H., Löfgren, A., 2010. Conformity and the Demand for Environmental Goods. *Environmental Resource Economics* 47, 407–421.
- Caswell, J., Modjuszka, E., 1996. Using Informational Labeling to Influence the Market for Quality in Food Products. *American Journal of Agricultural Economics* 78, 1248–1253.

- Cranfield, J., Henson, S., Northey, J., Masakure, O., 2010. An Assessment of Consumer Preference for Fair Trade Coffee in Toronto and Vancouver. *Agribusiness* 26, 307–325.
- d'Astous, A., Mathieu, S., 2008. Inciting consumers to buy fairly-traded products: a field experiment. *Journal of Consumer Marketing* 25, 149–157.
- DePelsmacker, P., Janssens, W., 2007. A model for fair trade buying behaviour: The role of perceived quantity and quality of information and of product-specific attitudes. *Journal of Business Ethics* 75, 361–380.
- DePelsmacker, P., Janssens, W., Sterckx, E., Mielants, C., 2006. Fairtrade beliefs, attitudes and buying behaviour of Belgian consumers. *International Journal of Nonprofit and Voluntary Sector Marketing* 11, 125–138.
- DePelsmacker, P., Janssens, W., Streckx, E., Mielants, C., 2005. Consumer preferences for the marketing of ethically labelled coffee. *International Marketing Review* 22, 512–530.
- Devinney, T.M., Auger, P., Eckhardt, G.M., 2010. *The myth of the ethical consumer*. Cambridge University Press, Cambridge.
- Diekmann, A., 1996. Homo ÖKOnomicus. Anwendungen und Probleme der Theorie rationalen Handelns im Umweltbereich. In: Diekmann, A., Jaeger, C.C. (Eds), *Umweltsoziologie. Sonderheft 36 der Kölner Zeitschrift für Soziologie und Sozialpsychologie*. Westdeutscher Verlag, Opladen, pp. 89–118.
- Eckhardt, G.M., Belk, R., Devinney, T.M., 2010. Why don't consumers consume ethically? *Journal of Consumer Behaviour* 9, 426–436.
- FAO, 2009. *The market for organic and fair-trade coffee*. FAO Rome.
- Fazio, R.H., 1986. How do attitudes guide behavior. In: Sorrentino, R.M., Higgins, E.T. (Eds), *The handbook of motivation and cognition: Foundations of social behavior*. Guilford Press, New York, pp. 204–243.
- Fazio, R.H., 1990. The MODE model as an integrative framework. *Advances in Experimental Social Psychology* 23, 75–109.
- Frank, R.H., 1985. *Choosing the Right Pond: Human Behavior and the Quest for Status*. New York: Oxford University Press.
- Hainmueller, J., Hiscox, M., Sequeira, S., 2014. Consumer demand for the fair trade label: evidence from a multi-store field experiment. *Review of Economics and Statistics*, Forthcoming. Available at <http://ssrn.com/abstract=1801942>.
- Hainmueller, J., Hiscox, M.J., 2012a. *Buying Green? Field Experimental Tests of Consumer Support for Environmentalism*. MIT Political Science Department Research Paper No. 2012-14. Available at <http://ssrn.com/abstract=2062429>.



- Hainmueller, J., Hiscox, M.J., 2012b. The Socially Conscious Consumer? Field Experimental Tests of Consumer Support for Fair Labor Standards. MIT Political Science Department Research Paper No. 2012-15. Available at <http://ssrn.com/abstract=2062435>.
- Harrison, R., Newholm, T., Shaw, D. (Eds), 2007. *The Ethical Consumer*. Sage, London.
- Hechter, M., Opp, K.-D., 2001. *Social Norms*. New York: Russell Sage Foundation.
- Hertel, S., Scruggs, L., Heidkamp, C., 2009. Human Rights and Public Opinion: From Attitudes to Action. *Political Science Quarterly* 124, 443–459.
- Hiscox, M., Broukhim, M., Litwin, C., 2011. Consumer Demand for Fair Trade: New Evidence from a Field Experiment Using eBay Auctions of Fresh Roasted Coffee. Available at <http://ssrn.com/abstract=1811783>.
- Hiscox, M.J., Smyth, N.F., 2011. Is There Consumer Demand for Improved Labor Standards?: Evidence from Field Experiments in Social Product Labeling. Working Paper Harvard University. Available at <http://ssrn.com/abstract=1820642>.
- Hudson, M., Hudson, I., Edgerton, J.D., 2013. Political Consumerism in Context. An Experiment on Status and Information in Ethical Consumption. *American Journal of Economics and Sociology* 72, 1009-1037.
- Jaeger, S.R., Rose, J.M., 2008. Stated Choice Experimentation, Contextual Influences and Food choice: A Case Study. *Food Quality and Preference* 19, 539–564.
- Jensen, R.T., Miller, N.H., 2008. Giffen Behavior and Subsistence Consumption. *The American Economic Review* 98, 1553-1577.
- Kimeldorf, H., Meyer, R., Prasad, M., Robinson, I., 2006. Consumers with a conscience: Will they pay more? contexts 5, 24–29.
- Krier, J.-M., 2008. Fair Trade 2007: New Facts and Figures from an ongoing Success Story. A Report on Fair Trade in 33 consumer countries. DAWS – Dutch Association of Worldshops, Netherlands.
- Krishnamurthi, L., Raj, S.P., 1991. An Empirical Analysis of the Relationship between Brand Loyalty and Consumer Price Elasticity. *Marketing Science* 10, 172.
- Lancaster, K.J., 1966. A New Approach to Consumer Theory. *The Journal of Political Economy* 74, 132–157.
- Lewis, T., Potter, E. (Eds), 2011. *Ethical consumption. A critical introduction*. Routledge, New York, NY.
- Long, J.S., 1997. *Regression models for categorical and limited dependent variables*. SAGE Publications, Thousand Oaks, London.
- Marshall, A., 1895: *Principles of Economics*. London: Macmillan.

- Newholm, T., Shaw, D., 2007. Studying the ethical consumer: A review of research. *Journal of Consumer Behaviour* 6, 253–270.
- Nicholls, A., Opal, C., 2005. *Fair trade: Market-driven ethical consumption*. Sage, London.
- Papaoikonomou, E., Ryan, G., Valverde, M., 2011. Mapping Ethical Consumer Behavior: Integrating the Empirical Research and Identifying Future Directions. *Ethics & Behavior* 21, 197–221.
- Pruckner, G.J., Sausgruber, R., 2008. Honesty on the Streets-A Natural Field Experiment on Newspaper Purchasing. Available at SSRN 1277208.
- Pampel, F.C., Hunter, L.M., 2012. Cohort Change, Diffusion, and Support for Environmental Spending in the United States. *American Journal of Sociology* 118, 420–448.
- Robinson, I., Meyer, R., Kimeldorf, H., 2014. The Strength of Weak Commitments. *Market Contexts and Ethical Consumption*. In: Bair, J., Dickson, M.A., Miller, D. (Eds.) *Workers' Rights and Labor Compliance in Global Supply Chains. Is a Social Label the Answer?* London: Routledge, pp. 140-163.
- Rotaris, L., Danielis, R., 2011. Willingness to Pay for Fair Trade Coffee: A Conjoint Analysis Experiment with Italian Consumers. *Journal of Agricultural & Food Industrial Organization* 9.
- Schwartz, S.H., 1977. Normative Influences on Altruism. *Advances in Experimental Social Psychology* 10, 221–279.
- Shadish, W.R., Cook, T.D., Campbell, D.T., 2002. *Experimental and quasi-experimental designs for generalized causal inference*. Houghton Mifflin, Boston, Mass.
- Shaw, D., Clarke, I., 1999. Belief formation in ethical consumer groups: an exploratory study. *Marketing Intelligence & Planning* 17, 109–119.
- Shaw, D., Shiu, E., Clarke, I., 2000. The Contribution of Ethical Obligation and Self-identity to the Theory of Planned Behaviour: An Exploration of Ethical Consumers. *Journal of Marketing Management* 16, 879–894.
- Sigurdsson, V., Saevarsson, H., Foxall, G., van Houten, R., 2009. Brand placement and consumer choice: an in-store experiment. *Journal of Applied Behavior Analysis* 42, 741–745.
- Slovic, P., Finucane, M.L., Peters, E., MacGregor, D.G., 2004. Risk as Analysis and Risk as Feelings. Some Thoughts about Affect, Reason, Risk, and Rationality. *Risk Analysis* 24, 311–322.
- Sunderer, G., Rössel, J., 2012. Morality or economic interest? The impact of moral motives and economic factors on the purchase of fair trade groceries. *International Journal of Consumer Studies* 36, 244–250.

- Tversky, A., Kahneman, D., 1986. Rational choice and the framing of decisions. *Journal of Business*, 251–278.
- Veblen, T., 1899. *The Theory of the Leisure Class*. New York: Macmillan.

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**Do Information, Price, or Morals Influence Ethical Consumption? A Natural Field Experiment and Customer Survey on the Purchase of Fair Trade Coffee**

**Highlights**

- Natural field experiment and customer survey on ethical consumption
- In experiment price reduction of 20% increase sales of ground Fair Trade coffee
- Treatments with additional information and moral appeal did not have effect
- Survey contrasts observed ethical buying with self-reported Fair Trade consumption