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Who cares for social image? Interactions between intrinsic motivation and social image concerns*

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Abstract

We consider the interaction of intrinsic motivation and concerns for social approval in a laboratory experiment. We elicit a proxy for Fairtrade preferences before the experiment. In the experiment, we elicit willingness to pay for conventional and Fairtrade chocolate. Treatments vary whether this can be signalled to other participants. Subjects concerned with social approval should state a higher Fairtrade premium when signalling is possible. We find that this is the case, but interestingly only for participants who are not intrinsically motivated to buy Fairtrade. This has important implications both for crowding out of intrinsic motivation through incentives and for producer choices.

JEL-codes: D03, C91

Keywords: image concerns, Fairtrade, ethical consumption, crowding out, experiments

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1 Introduction

Empirical research suggests that choices for products considered to be ethical are driven not only by intrinsic motivation but also by concerns for social approval (Griskevicius et al., 2010; Sexton and Sexton, 2011). How intrinsic motivation and image concerns interact is important for supply and pricing policy of these products (Friedrichsen, 2013). Furthermore, the interaction is relevant to assess potentially negative effects of incentives on behavior motivated by intrinsic motivation or image concerns (Bénabou and Tirole, 2006; Gneezy and Rustichini, 2000; Seabright, 2009). Specifically, if those who are intrinsically motivated are little concerned with the image derived from their choices, then encouraging others through incentives to make the same choice would not lead to crowding out of intrinsically motivated behavior. Instead, if those intrinsically motivated also tend to care a lot for the image they derive from their choice, pooling by those who are only motivated through extrinsic incentives would lead the former to derive less utility from their ethical choices and thus potentially to crowding out.

However, little is known about this interaction between intrinsic motivation and concerns for social approval from empirical work. Due to this lack of empirical evidence, we assess in a laboratory experiment, how intrinsic motivation and social image concerns interact in the context of Fairtrade products. In particular we try to find out whether intrinsically motivated individuals react more or less strongly to opportunities for image building than other individuals.

A growing number of empirical and experimental studies support the assumption that individuals exhibit status or image seeking behavior.¹ Most often the focus is put on the inferred social status of individuals based on their actions. However, the phenomenon of image seeking may occur in other settings where individuals intend to communicate or infer specific traits through and from actions. Social approval or image seeking is often explained by appealing to evolutionary arguments (in particular sexual selection by mate choice): individuals who are perceived as better types have superior matching possibilities and thus increased chances of reproduction and healthy descendants (Miller, 2000; De Fraja, 2009). Similar to demonstrating wealth, engaging in pro-social or pro-environmental behavior can signal one's willingness and ability to take costly action to a potential partner's benefit (Griskevicius et al., 2007).

¹For theoretical studies on the impact of status or image concerns on product design, pricing and advertising see e.g. Bagwell and Bernheim (1996); Ireland (1994); Rayo (2003); Pastine and Pastine (2002); Pesendorfer (1995) and the early contribution by Veblen (1915).

The majority of empirical studies on image concerns relates to conspicuous consumption. Using survey measures on the visibility of different products, Chao and Schor (1998) find that individuals tilt their consumption towards more visible products in the market for women’s cosmetics. Charles et al. (2009) employ a survey measure for the visibility of expenditure on different products. After presenting a model which predicts that consumption expenditure depends on an individual’s position within a reference group as well as on the reference group’s position in society, Charles et al. (2009) present empirical estimates from US data consistent with these predictions: richer individuals have higher expenditures on visible goods when restricting attention to their reference group. Using a similar measure on expenditure visibility, Heffetz (2011) shows that income elasticities derived from the US Consumer Expenditure Survey are higher for more visible products. He also presents a model in which individuals tilt their consumption towards more visible products, which implies higher income elasticities for these products.

Image concerns have also received large attention in the context of pro-social behavior. In particular, it has been shown that blood donations (e.g. Lacetera and Macis, 2010) and alumni giving (e.g. Harbaugh, 1998a,b) are partly motivated by reputational concerns. Similarly, “green” consumption is affected by consumers’ image concerns. Using data on car purchases, Sexton and Sexton (2011) find that “consumers are willing to pay up to several thousand dollars to signal their environmental bona fides through their car choices.”. The car which is used to signal is the Toyota Prius, which according to market research is a conspicuously green car (Maynard, 2007). Image concerns are also found relevant in other areas of pro-social behavior, specifically volunteer fire-fighting (Carpenter and Myers, 2010), volunteering (Linardi and McConnell, 2011), and effort provision for charity (Ariely et al., 2009). Complementary evidence on social image concerns in ethical consumption is provided in Griskevicius et al. (2010). In a series of lab experiments they find that priming subjects with status motives increased their desire to purchase green products in public but not in private.² We discuss further relevant experimental studies on image concerns as well as other related experiments in the next section.

Even though heterogeneity in image concerns is a relevant question, we are not aware of any study formally investigating how image concerns relate to intrinsic motivation for a specific type of behavior. In Section 5, however, we discuss some results, which are consistent with heterogeneity in image concerns, even though this is not explicitly addressed in the respective studies.

²Note that in all these examples the behavior cannot be fully explained by a signaling desire in a Bayesian-rational model, since the signaling only makes sense if some individuals actually are pro-social.

Our experiment explicitly addresses the interaction of intrinsic pro-social motivation and concerns for social image. Before subjects come to the experiment, we elicit a proxy for their intrinsic motivation for Fairtrade chocolate by simply offering a choice between Fairtrade and conventional chocolate as an additional reward for taking part in the experiment. In the experiment itself, participants first engage in a market game involving consumers with substantial power and workers with no bargaining power. Then we elicit in an incentive compatible way the willingness to pay both for conventional and Fairtrade chocolate and thus can derive for each individual subject a Fairtrade premium they are willing to pay. Our treatments vary whether the willingness to pay is kept private or has to be announced publicly and thus whether participants can build an image among the fellow participants for being concerned with Fairtrade. In a questionnaire, we also ask about knowledge about and attitudes towards Fairtrade and confirm that the latter are quite positive, so that our variation of image building opportunities indeed allows participants to derive a positive social image.

We find that subjects who have not revealed an intrinsic motivation for Fairtrade before the experiment exhibit a significantly larger Fairtrade premium with image building opportunities than without, whereas those who chose Fairtrade before the experiment do not react significantly to these opportunities. Hence in our experiment intrinsic motivation and image concerns are negatively correlated. This result has important implications in two areas. The first regards the optimal design of product portfolios. The second concerns the crowding out of intrinsically motivated socially beneficial behavior through incentives that encourage those not intrinsically motivated. We discuss these implications in Section 5. Before that, we discuss related experimental results in Section 2, present the experimental design and procedures in detail in Section 3 and the experimental results in Section 4.

2 Experimental results on image concerns

A number of experimental studies provide evidence on the existence of image concerns in the context of pro-social behavior. Assuming that behaving pro-socially confers a positive image, image-concerned individuals should behave more pro-socially in the public sphere than in private. Experimental investigations of giving in the laboratory (Andreoni and Bernheim, 2009; Grossman, 2010; Lazear et al., 2012; Tonin and Vlassopoulos, 2013; Frackenhohl and Pönitzsch, 2013) and in the field (Soetevent, 2005, 2011; DellaVigna et al., 2012) are consistent with this prediction even though the authors do not necessarily

put forward image concerns as an explanation for their results and other explanations are possible as well. More specifically, DellaVigna et al. (2012) distinguish joy from giving and social pressure as motivations for giving in a field experiment. The effect of social pressure on giving is very similar to that of concerns for social or self image, but the welfare implications differ. Lazear et al. (2012) do not discuss image concerns as a driving factor of observed behavior; however, as we discuss below, also their findings could be explained by image concerns.

Soetevent (2011) finds that contribution and participation rates in door-to-door fundraising drop severely when participants can donate only using a debit card instead of having the option to donate in cash. However, contributing households in the debit-only treatment are more generous. Both findings are consistent with image concerns. As the author argues, a crucial point is that the amount donated is visible when donating by card whereas with cash donations only the fact of giving is observed. Note also that donating being only possible by card gives people the option of pretending to have security concerns, while in turn the lower donation rate increases the return on donations in terms of image, making larger donations more attractive. This would also suggest that debit donors in the debit-only treatment donate more than debit donors in the treatment with cash and debit options. This hypothesis, however, cannot be tested since only three donors (out of 444 who contributed) chose to use a card when the option to give in cash was available. These findings, could, however, also be due to differences in the payment types (with some people indeed not having a card at hand and the others being simply the more generous households). Similarly, Soetevent (2005) finds a positive effect of using open baskets for church offerings for external causes instead of closed collection bags but cannot disentangle an image effect from an asymmetric information effect. The latter takes place if the quality of a cause is unknown and the first mover can increase other people's donations by signaling their private information through the size of her gift.³ Linardi and McConnell (2011) report positive audience effects on volunteering in a laboratory experiment. However, in their setting volunteering might go up to influence peers to also work more.

In a further laboratory experiment, Andreoni and Bernheim (2009) find that giving in a dictator game is subject to "audience effects", where audience effects mean that individuals tailor their behavior to conforming with a perceived norm of "good" behavior. Grossman (2010) points out, however, that these results would also obtain if individuals wanted to signal to themselves and not to the audience. Thus, he extends the framework of Andreoni

³This asymmetric information channel has been analyzed explicitly for instance in Vesterlund (2003) and Potters et al. (2007).

and Bernheim (2009) to investigate the relative importance of social signaling (audience effects) versus self-signaling. The results of Grossman (2010) indicate that self-signaling does not play a major role for giving in a dictator game but social signaling is a relevant motivation for a large subsample of individuals.

Findings from dictator games with sorting options (Lazear et al., 2012) can be related to (self-) image concerns as well, even though the authors do not discuss this. “Reluctant sharers” who are most generous in a standard dictator game are least willing to re-enter the dictator game when the sharing environment is increasingly subsidized. Image concerns (as well as social pressure) can explain why individuals give generously if they have to give something but prefer to avoid the giving situation. Image concerns (but less so social pressure) also explain why these individuals are reluctant to enter a subsidized dictator game because the subsidy distorts the signaling value of giving (Bénabou and Tirole, 2006).⁴

While the above studies use publicity as a trigger for image concerns, Tonin and Vlassopoulos (2013) find evidence for self-image concerns in dictator games without manipulating the visibility of actions. When given the option to ex post exit the dictator game, a significant fraction of participants took this up and kept the whole amount - an option that had been available on the dictator game. Deciding to give a positive amount and then stepping back from this pro-social behavior ex post is consistent with self-image concerns because decisions were made for three dictator games only one of which was randomly chosen to be implemented.

Our use of Fairtrade products to elicit image concerns also puts us in close relation to the literature on impure public goods and ethical differentiation, because Fairtrade products are similar to those that bundle a conventional product with a donation. Valente (2010) tests in class room experiments the effects of bundling a donation to Oxfam with a purchase of chocolates and finds that the presence of such an impure public good leads to lower overall donations.⁵ She also finds that some participants even choose inefficient bundles (i.e., where the price difference to the conventional good is larger than the donation). Apparently, when a product with a bundled-in donation is offered, subjects perceive this level as appropriate to derive a positive self-image. In contrast, Koppel and Schulze (2010)

⁴Also “costly (but quiet) exit in dictator games” is a possible effect of image concerns. If I want you to think good of me, this is an image concern. In the experiments by Dana et al. (2006) visibility is not manipulated in making a person and her action visible to another but by revealing or disclosing that a certain outcome is related to another individual’s action.

⁵The use of chocolate is popular in experiments using real goods, probably because “Nine out of ten people like chocolate. The tenth person always lies.” (John Q. Tullius, who is apparently known primarily for this quote).

find in a field experiment that donations are higher if they are bundled with a private good (beverages in coffee shops in their case), even if the level of donation can be chosen. Social image concerns may matter here because if the donations are bundled with the product, the consumers have to communicate their choices to the staff, whereas direct donations are just dropped into a box (this is one of the explanations discussed by their authors, though not explicitly linked to image concerns). The findings by Frackenhohl and Pönitzsch (2013) support self-image concerns in an experiment on the willingness to pay for public goods. They find that bundling a private and a public good increases the valuations for both the public and the private good. One of several explanations discussed by the authors are self-image concerns. By design, concerns for social image cannot explain the findings, because choices are made in private. Strahilevitz and Myers (1998) investigate bundling necessary goods and “frivolous luxuries” with charitable donations in laboratory experiments and field studies. Their interest lies in the marketing aspect of this bundling and they find that it is a more effective marketing tool for “frivolous luxuries”. This might be the case because the charitable donations enhance the self-image, which is otherwise damaged by the luxury purchase. Alternatively, the higher visibility of the luxury good enhances the possibility of communicating the donation. This in turn makes the donation and thereby the bundle more valuable in terms of image.

Related also to the first part of our experiment, Rode et al. (2008) study consumer’s willingness to pay for ethically diversified goods. They find that many subjects are willing to pay more to buy at high-cost experimental firms if an ethical reason is given for the higher costs. This is in line with the positive Fairtrade premium we observe for most of our participants.

3 Experimental design and procedures

Our experimental design consists of three steps. First, after participants have registered for the experiment, but before they arrive at the laboratory, we derive a proxy for their preference for Fairtrade products. Second, in the first part of the laboratory experiment, they take part in a market game. Third, in the second part of the laboratory experiment, we elicit their willingness to pay for Fairtrade and conventional chocolate with an incentive compatible random price mechanism, where our treatments vary the possibility for image building. Our main interest here lies in the relation between the intrinsic motivation elicited before the experiment and the reaction to image building opportunities varied in the second

part of the experiment. The market game serves two purposes. On the one hand, given that the second part is short, we used the opportunity to assess the generalizability of fair behavior observed in an experimental labor market by comparing behavior in this market with Fairtrade choices both before the experiment and in its second part. This analysis is the focus of a companion paper (Danz et al., 2013). On the other hand, the market game serves to start the experiment in a relatively conventional fashion and thus removes the focus from the rather unusual chocolate purchase in the second part.

In order to derive a proxy for their intrinsic preference for Fairtrade products we offered subjects via email the choice between Fairtrade and conventional milk chocolate as an additional reward for coming to the experiment. This email was sent and had to be answered before they came to the laboratory but chocolate was distributed only after the experiment. Since Fairtrade chocolate is in general more expensive, we offered a choice between a slightly larger (125g) bar of conventional chocolate and standard size (100g) bar of Fairtrade chocolate.

For a number of reasons, this proxy is noisy. First of all, subjects might be motivated to build an image towards the experimenters. As a result, some of those whom we classify as intrinsically motivated might be rather concerned with their image in the eyes of the experimenter. Second, Fairtrade products might simply be perceived as of higher quality. Hence some of those choosing Fairtrade chocolate might not be concerned with the production methods, but just expect large quality difference.⁶ Third, because in our first sessions only few subjects chose the conventional chocolate (even though the choices were more balanced when we used the same chocolate for recruiting new subjects), we offered a choice between two bars of conventional chocolate and one bar of Fairtrade chocolate in the following sessions. We balanced the design with respect to whether we offered two or one bars of conventional chocolate. Interestingly, a majority still chose Fairtrade, probably because the two-to-one choice was perceived as a signal that the Fairtrade chocolate was substantially more expensive than the conventional chocolate, which is actually not true (the price for a bar of conventional chocolate was 0.95 €, for the Fairtrade chocolate 1.29 €).⁷ For these reasons, our classification into Fairtrade and conventional choosers is

⁶Indeed, survey responses show that in addition to pro-social motivations, quality expectations do play a role for choosing Fairtrade (see Table 4 in the Appendix). This does not invalidate our analysis though. Even if subjects were only interested in quality and not pro-sociality a modified story holds where some care more about quality than others and these groups react differently to the image building opportunity in the public treatment. We confirmed that our results as reported below do not change if we control for two measures of quality perceptions.

⁷Our own evaluation of the taste did not reveal any difference either way.

noisy. This should, however, only reduce any differences we find between these two groups in terms of attitudes and behavior because, while the proxy is noisy, it is not systematically biased.

Note that an experimenter demand effect in the sense that subjects choose Fairtrade chocolate or inflate their willingness to pay to impress us as experimenters is not problematic for the question we are interested in. We are interested in who reacts to opportunities to build a social image. If subjects care about their image in the eyes of the experimenter, this would increase their willingness to pay in all treatments. Nevertheless, as long as they also care about their image in the eyes of the other participants, our treatment variation would affect their behavior. Our results indicate that image concerns induced by our treatment as outlined below are not outweighed by reputational concerns towards the experimenters.⁸

The laboratory experiment itself consists of two parts. In the first part, the participants take part in a market game modified from Danz et al. (2012). In this game, subjects are randomly allocated one of three roles, consumer, firm, or worker, that they keep for the whole first part. One consumer, two firms, and one worker interact in a fixed group for 20 periods. Each round of the game consists of two stages. Firms produce a homogeneous fictitious good and they both employ the same worker to do so (the subject in the worker role essentially acts as the representative worker). In the first stage, firms choose prices and wages. In the second stage, the consumer is informed about the price-wage pairs of both firms and can then choose to buy up to 10 units of the fictitious good that she can split in any way between the two firms. Workers are passive wage recipients and have no choices to make (one reason why we used only one representative worker rather than one worker per firm, the other being that it makes redistribution in favor of workers a lot easier for consumers). Consumers earn 20 points minus the price for each unit purchased, the firm earns the price minus the wage for each unit sold and the worker earns the respective wage for each unit sold by both firms. Subjects obtain 1 € for each 100 points. In a subgame-perfect Nash equilibrium with common knowledge of rationality and selfishness, wages are 0 and prices equal 0, 1, or 2 (if the consumer buys five units at each firm when they both charge 2, there is no incentive to undercut).

⁸If one is further worried about a demand effect in the sense that some subjects state a higher willingness to pay in the public treatment because they think we expect them to impress their fellow participants, one has to find a plausible story why intrinsic motivation for Fairtrade is correlated with responding to this demand since we find such a heterogeneity (see Section 4). For instance, subjects who are concerned with their image in the eyes of the experimenters (the authority) might care less about reputation within their peer group and vice versa.

In Danz et al. (2012) the market game is slightly different by having a worker participant for each firm. The main purpose of this market game in Danz et al. (2012) is to study whether consumers are willing to incur higher costs in order to make workers better off and in particular, whether such a motivation is crowded out by minimum wages. The situation of the market game corresponds in an abstract way to the idea of Fairtrade products. Hence we utilize a similar game in the present experiment, because it allows us to study in our companion paper (Danz et al., 2013) whether there is a relationship between such fair treatment of subjects in a role of workers and higher willingness to pay for actual Fairtrade products, which we elicit for the purposes of the present paper.

In the second part of the laboratory experiment, we elicit from each participant his or her willingness-to-pay (between 0-2 €) for both Fairtrade and conventional dark chocolate (WTP_{fair} and WTP_{conv}) using a random price mechanism (Becker et al., 1964). Specifically, subjects enter a price between 0 and 2 Euros, where any multiple of 0.01 € was permitted. Then we draw a price from a uniform distribution of all integer multiples of 0.01 €. Subjects receive a bar of the chocolate type sold if their stated WTP for that type is at least as high as the randomly chosen price. Which type of chocolate is sold is determined randomly after the price has been chosen such that the mechanism is incentive compatible for both types of chocolate. We chose dark chocolate for this part of the experiment instead of milk chocolate, so that subjects could not end up with two bars of the same chocolate, which could have reduced their willingness to pay for the type of chocolate of which they were already sure to receive one bar relative to the other one.⁹ We also did not choose any well-known brands, in order to minimize the chance that subjects' willingness to pay was based on taste preferences due to personal experience.¹⁰ From these two WTPs we infer individuals' willingness' to pay a premium for the Fairtrade chocolate as $WTP_{\text{premium}} = WTP_{\text{fair}} - WTP_{\text{conv}}$.

Our two treatments differ in whether the WTPs are elicited publicly or in private. In treatment *private*, individuals enter their WTPs privately at the computer. In treatment *public*, they also announce them publicly among the group of participants. The difference in WTP_{premium} between the treatments serves as our measure for image concerns. We note that while the random price mechanism (Becker et al., 1964) is incentive compatible in theory, it has been pointed out that experimental subjects may misconceive this mechanism

⁹Interestingly, at the time of payment, most of our participants had already forgotten that for participating they would receive a milk chocolate bar of a type chosen beforehand.

¹⁰A picture of the type of chocolate bars which we used in the experiments can be found in the appendix, Figure 3.

(Plott and Zeiler, 2005; Cason and Plott, 2012). Such misconceptions should be of much less concern in our experiment. Misconceptions appear to be more of an issue for elicitation of willingness to accept to forego an item rather than for willingness to pay to obtain an item. More importantly, we are only interested in WTP_{premium} , and in particular in the question whether this differs significantly across groups or treatments. Tests of the related hypotheses are robust to any misconception that only leads to a bias that is monotone in the true WTP and is not systematically correlated with the treatment or subject group.

After entering their WTPs (but before they announce them in *public*), subjects fill in an extensive questionnaire regarding their attitudes towards and knowledge about Fairtrade. The answers to this questionnaire allows us to confirm the validity of our proxy for intrinsic motivation.

The experiment was computerized using zTree (Fischbacher, 2007) and took place in the experimental economics laboratory mLab at the University of Mannheim. Participants were recruited using ORSEE (Greiner, 2004). We have conducted 8 sessions with 16-20 participants each so that we had in total 144 participants. For part 1 of the experiment, each participant got a show-up fee of 5 €; for the second part, everyone got an additional endowment of 4 €. Average cash earnings were 18.63 € in total, including the show-up fee and the endowment in the second part, subtracting payments for chocolate if applicable.¹¹ In the second part, the payoff-relevant chocolate turned out to be conventional and Fairtrade in half of the sessions each. Details about the (randomly chosen) prices at which chocolates were sold are collected in Table 1. In total, we handed out conventional chocolate to 22 subjects and Fairtrade chocolate to 21 subjects.

¹¹In the market game in the first part of the experiment, participants in the role of firms earned 4.50 € on average, those in the role of workers earned 6.31 € on average, and those in the role of consumers earned 23.73 € on average. It is to be expected that consumers are by far best off, given that their earnings in a subgame-perfect Nash equilibrium with common knowledge of rationality and selfishness are at least 36 €, whereas those for the workers are 0 € and those for the firms at most 2 €. It is surprising, however, that workers are better off than firms, given that they have no bargaining power at all. The reason appears to be that because one worker collects wages from two firms, he earns actually twice as much as each firm player when they choose the same price-wage pair and the price equals two times the wage, which may appear fair at a superficial look. Furthermore, in a few occasions, firms confuse wages and prices when entering their choices, leading to losses for them and high incomes for the workers. In Danz et al. (2012) where there is one worker per firm, workers are on average worse off than firms.

	conventional				Fairtrade			
price in €	0.26	0.27	0.97	1.85	0.25	1.01	1.20	1.78
treatment	public	private	private	public	public	private	public	private
#participants	16	16	20	20	16	16	20	20
#bars sold	11	9	2	0	12	2	7	0

Table 1: Prices drawn for the chocolates and number of chocolate bars paid out to participants.

4 Experimental results

Our analysis evaluates decisions from 121 subject who made their choice between Fairtrade and conventional chocolate via email as described above. In addition, 23 newly recruited subjects participated in our experimental sessions but are not included in the analysis. For these subjects, the chocolate choice which we intended to use as a proxy for their intrinsic preference had to be taken in public during a recruitment day in front of the student cafeteria and not via email. We believe that this led to image concerns biasing their choices already at that stage so that we cannot pool them with the other participants.¹² Unfortunately out of 222 new recruits, only 23 ever showed up in one of our experiments and their chocolate choices are not balanced across treatments such that we cannot hope for reliable results for this subgroup. We therefore exclude these 23 observations from our analysis.

Of the 121 subjects who made their choice via email, 32 chose conventional chocolate, while the remaining 89 chose Fairtrade before coming to the lab. Our main interest lies in whether there is heterogeneity with respect to image concerns along the dimension of intrinsic motivation. We thus compare our measure of image concerns (namely the difference in WTP_{premium} between the public and the private treatment) for the two groups of individuals who chose Fairtrade or conventional chocolate before coming to the experiment, respectively. The difference-in-differences in the Fairtrade premium (i.e. the difference in

¹²Specifically, we had used chocolate as an incentive to sign up to the subject pool in a recruitment drive at the university cafeteria and library. Our original plan was to use the newly recruited subjects in our experiment and their chocolate choice in the recruitment drive as their preference proxy. As it turned out, many of them made their choice in the presence of friends and hence image concerns already had an influence at that stage. Furthermore, very few of them ever signed up to an experiment. Hence incentives worked, but precisely to get them to do what they were incentivized for, namely signing up for the subject pool, but not for taking part in experiments. Further issues are that because they are newly recruited, they are more likely to be confused in the experiment and that they are less likely to know other students in their session and hence less affected by image concerns in the public treatments.



Figure 1: Averages of WTP by treatment and by chocolate choice. Left panel: averages of premium in willingness to pay for Fairtrade, right panel: averages of willingness to pay for Fairtrade and conventional chocolate.

the treatment effect) between the groups of participants shows whether image concerns interact with our measure of intrinsic motivation.

Looking at the averages across individuals (see Figure 1), we see that making choices public increases WTP_{fair} from 0.40€ to 0.58€ and WTP_{premium} from -0.06€ to 0.10€ for those subjects who had chosen the conventional chocolate. However, it decreases WTP_{fair} from 0.71€ to 0.63€ and WTP_{premium} from 0.26€ to 0.15€ for those who had chosen Fairtrade chocolate. Due to the negative effect on fair-minded individuals and that group being larger, making choices public decreases the average WTP_{fair} from 0.63€ to 0.62€ and WTP_{premium} from 0.18€ to 0.14€ when we average across all individuals. Only the increase in WTP_{premium} for conventional chocolate choosers is significant while the decrease which we observe for Fairtrade choosers is not as is illustrated by boxplots in Figure 2 (as confirmed by non-parametric tests below). While there is some downward shift in WTP_{premium} for the Fairtrade choosers, the median and upper and lower quartiles are hardly affected. In contrast, WTP_{premium} for the conventional choosers is shifted upward substantially. In particular the bulk of the mass is below 0 in the *private* treatment but above 0 in the *public* treatment.

Table 2 presents results from an OLS regression of the Fairtrade premium on dummies for the *public* treatment and whether the subject had chosen Fairtrade chocolate (*FTchoice*) before coming to the experiment as well as the subject's earnings from the market game

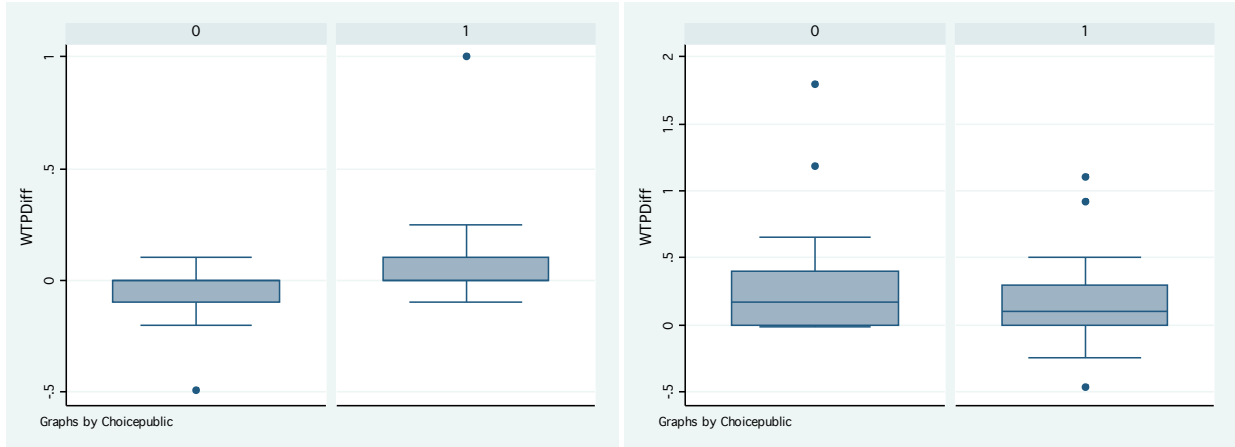


Figure 2: Averages of WTPpremium by treatment, Choicepublic=0 if WTPs were elicited in private. Choicepublic=1 if WTPs were elicited in public. Left panel: conventional choosers, right panel: Fairtrade choosers.

in the first part of the experiment (*marketprofit*). We also include the interaction effects between the two dummies and between the (*marketprofit*) and the treatment dummy. Looking at all 121 individuals, we find the following results (see Table 2, column 1).

Our treatment dummy *public* is significant (+29.2 Cents, $p = 0.018$) implying that making choices public increases individuals' willingness to pay a premium for Fairtrade chocolate. Thus, we empirically confirm the relevance of image concerns in Fairtrade consumption. As expected, having chosen Fairtrade chocolate before the experiment is associated with a significantly higher WTP_{premium} (+31 Cents, $p < 0.001$). Higher earnings in the first stage also increase WTP_{premium} ; the effect is marginally significant (coefficient of 0.007, i.e. +0.7 Cents per 1 € higher income, $p = 0.056$). The interaction between first stage profits and *public* is significantly negative with a coefficient of -0.012 ($p = 0.047$). This implies that in the public treatment, first stage profits have no significant effect. We confirm this in a separate regression conditioning on the treatment being public, see Table 3.¹³

The descriptive analysis points to important heterogeneity between the two groups, those that have chosen conventional chocolate and those who have chosen Fairtrade chocolate when we asked them before the experiment for their preference. This heterogeneity

¹³Table 7, column 1 illustrates that within the subsample of participants whose chocolate choice was elicited in public at the cafeteria, the choice of Fairtrade chocolate is not significantly correlated with the willingness to pay a premium for Fairtrade in the experiment in contrast to the sample of individuals who chose via email. Columns 2 and 3 in Table 7 and Table 8 show that results in the cafeteria recruited subsample are far from robust.

WTP _{premium}	Standard		Clustered SE		Group-level RE	
FTchoice	0.313*** (0.085)	0.341*** (0.094)	0.313*** (0.060)	0.341*** (0.060)	0.313*** (0.085)	0.335*** (0.093)
public	0.292** (0.122)	0.311** (0.134)	0.292** (0.109)	0.311** (0.115)	0.292** (0.122)	0.284** (0.138)
FTchoice*public	-0.290** (0.119)	-0.283** (0.132)	-0.290*** (0.106)	-0.283** (0.113)	-0.290** (0.119)	-0.236* (0.133)
marketprofit	0.007* (0.004)	0.006 (0.004)	0.007 (0.005)	0.006 (0.005)	0.007* (0.004)	0.006 (0.004)
marketprofit*public	-0.012** (0.006)	-0.012* (0.007)	-0.012* (0.006)	-0.012* (0.007)	-0.012** (0.006)	-0.011* (0.007)
Observations	121	103	121	103	121	103
R ²	0.150	0.158	0.150	0.158	(a)	(b)
Prob > F	0.002	0.005	0.000	0.000	0.001	0.002

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

Table 2: Regression of WTP differences on Fairtrade choice (ex ante), profits from the first part of the experiment, treatment (public or private) and interaction terms. Columns 1 and 2 are the benchmark specifications for all subjects who made their choice via email. Columns 3 and 4 account for standard errors clustering at the group level, columns 5 and 6 include group-level random effects. In columns 2, 4, and 6 we exclude subjects who bid less than 2 cents for each type of chocolate. Standard errors in parentheses. (a) R²: within = 0.1391, between = 0.1217, overall = 0.1503. (b) R²: within = 0.2204, between = 0.0022, overall = 0.1563

shows up significantly in the regression analysis (see Table 2, column 1). The interaction effect between having chosen Fairtrade chocolate and *public* is significant with a p -value of 0.016. The coefficient on the interaction is negative and with -0.290 similar in size to the aggregate treatment effect. Thus, in our experiment, image concerns are significantly less pronounced and virtually absent for those individuals who had chosen the Fairtrade chocolate. In fact, making choices public has a significant effect on the willingness to pay a premium for Fairtrade *only* for those who had chosen conventional chocolate if we control for first-stage profits.

WTP _{premium}	all
FTchoice	0.187*** (0.059)
marketprofit	0.004 (0.003)
Observations	121
R ²	0.082
Prob > F	0.006

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

Table 3: Results conditioning on the treatment being public. Standard errors in parentheses.

Our main results remain qualitatively unchanged if we exclude 18 individuals with “no demand”, i.e., individuals who state a willingness to pay of less than 2 cents for each of the two types of chocolate (see Table 2, column 2). The main difference is that the profit from the first part would not have a significant impact anymore (and the interaction effect with the treatment dummy only at the 10% level). Furthermore, one could worry that the interaction in the first part of the experiment may have influenced the participants and hence conclude that one should not consider individual Fairtrade premia as independent observations. Clustering standard errors on the group level (with 36 independent groups) yields slightly smaller p -values for the treatment dummy and the interaction effect with the FTchoice dummy, but now *marketprofit* is not significant anymore ($p = 0.193$) and *marketprofit*public* is only significant at the 10% level (see Table 2, columns 3 and 4 for details). Alternatively, we also run the regression with group-level random effects, which has no effect on significance levels (the p -values all become marginally smaller, see Table 2, columns 5 and 6 for details).

We also ran probit regressions for a dummy of having a positive Fairtrade premium and the independent variables as above. Unsurprisingly, those having chosen Fairtrade before the experiment are significantly more likely to have a positive Fairtrade premium ($p < 0.01$), the treatment effect is significantly positive ($p < 0.10$) and the interaction effect between these dummies is negative and significant ($p < 0.05$), the results being again robust to including group-level random effects (see Table 6).¹⁴ Thus, we can see two things from the probits. First, in the private treatment, those who choose conventional chocolate before the experiment are significantly less likely to have a positive Fairtrade premium than those who have chosen Fairtrade before. Second, in the public treatment, the conventional choosers become significantly more likely to state a positive Fairtrade premium. While only one out of 13 in the private treatment states a positive Fairtrade premium, seven out of 15 in the public treatment do so. While these results are in line with those from the OLS of the WTP premium, they are actually not as informative. Those choosing Fairtrade before the experiment should already have a positive Fairtrade premium in the private treatment (and 33 out of 42 do, ignoring subjects who state a maximum WTP smaller than 0.02€) and hence the treatment cannot have much of an effect in this group, hence the negative interaction effect (26 out of 34 state a positive Fairtrade premium in the public treatment). In the OLS, we could also observe if Fairtrade choosers react to the image building opportunities by increasing their Fairtrade premium but see that they do not.

The results regarding the heterogeneity of image concerns are also confirmed by non-parametric Mann-Whitney tests.¹⁵ The Fairtrade premium is larger in the public than in the private treatment for those subjects who had chosen conventional chocolate ($p = 0.005$), but not for those who had chosen Fairtrade chocolate ($p = 0.122$). Furthermore, the Fairtrade premium in the private treatment is significantly larger for those who had chosen

¹⁴One participant, a Fairtrade chooser in the public treatment, stated after the experiment to have accidentally swapped WTP_{fair} and WTP_{conv} . The aggregate data and statistical analysis reported in this paper use the original data as he entered them, because some participants always make mistakes and it seems somewhat arbitrary to correct those that some participants report later to be mistakes. Nevertheless, we also performed robustness checks with the WTPs as he claimed he had wanted to enter them. The only difference we observe regarding the treatment and the proxy for the intrinsic preference is that in the probit regression, when we exclude participants with a maximum WTP $< 0.02\text{€}$, then in the uncorrected data, the treatment dummy is significant at 10%, but just misses significance at the 10% level in the corrected data. In addition, the significance of the impact of the profits from the first part is weaker in some of the regressions, but the impact of the profit is not our concern.

¹⁵The caveat that these tests uses individual Fairtrade premia as independent observation applies here again. But since it is not obvious how interaction in the market stage should have impacted on the decisions here and taking the dependence into account did not make a difference in the regressions, we consider these tests valid at least as additional support.

Fairtrade chocolate than for those who had chosen conventional chocolate ($p < 0.001$), but in the public treatment the Fairtrade premium does not differ significantly between these two groups ($p = 0.123$). This is in line with the regression results in suggesting that opportunities for image building lead those not intrinsically motivated to pool their image with those who are intrinsically motivated, but leaves the latter unaffected.

5 Concluding discussion

We have addressed the heterogeneity in image concerns by studying the effect of opportunities for image building on Fairtrade premia for experimental participants with different intrinsic motivation. We find that participants with low intrinsic motivation to buy Fairtrade react positively to image building opportunities, whereas those with high intrinsic motivation do not.

Our results imply that addressing the signaling desire of consumers who are not intrinsically motivated to buy Fairtrade can increase Fairtrade consumption without having to fear an image-based crowding out of intrinsically motivated buyers. Since the intrinsically motivated subjects in our experiment are not influenced by social image building opportunities, they would not be affected if the derived image is diluted because those not intrinsically motivated are encouraged by extrinsic incentives (such as image building opportunities but also, e.g., material rewards) to buy the same products. Hence extrinsic incentives are not likely to crowd out intrinsic motivation in our setting.

On the aggregate level, for the Fairtrade choosers we even observe a decrease of the Fairtrade premium in the public treatment. This could be seen as a suggestion that these subjects choose Fairtrade to support their self-image and that the expected pooling of those only driven by social image in the public treatment leads to a decrease of the self-image derived from the stated Fairtrade premium and hence their Fairtrade premium actually decreases if self-image is derived as if in the eye of a neutral observer as in the model by Bénabou and Tirole (2003).¹⁶ However, such motivations do not seem to play a role because once we control for the profits from the first part of the experiment, the treatment effect

¹⁶Alternatively, one could also imagine that some people perceive a negative image of appearing to want to have a positive image. This second-order stigma of first-order image concerns could then lead some intrinsically motivated participants to have a lower Fairtrade premium in the public treatment, because even though they can now derive social image from the Fairtrade choice they might care more about the stigma attached to being concerned with that image. In equilibrium, heterogeneity in concerns for stigma is required (and it has to be rare) because otherwise no positive image could be derived from a positive Fairtrade premium in the first place.

completely disappears. In an OLS regression of the Fairtrade premium restricted to the subjects who chose Fairtrade before the experiment, the coefficient on the dummy for the public treatment is actually positive, but very small and very far from being significantly different from zero ($p > 0.8$).¹⁷

Our results that those not intrinsically motivated care for social image but the intrinsically motivated do not, would also suggest that the profit maximizing strategy of a monopolist will attempt to pool consumers who intrinsically value Fairtrade with those who only care about their image. Thus only one type of “ethical” good should be offered. Alternatively, if a subset of the intrinsically motivated cared substantially about social image, it would pay for the producer to offer a high-quality (where quality here refers to the quality in the ethical dimension) high-price product for them to allow them to separate from those purely interested in social image, who in turn are pooled on an intermediate-quality intermediate-price product with those who are only intrinsically motivated, but not through social image (see Friedrichsen (2013) for these theoretical results). Our results are thus in contrast with the propagation of Fairtrade labels that differ in the strictness of their standards, which suggests separation. Naturally, other components may matter here as well, including heterogeneity in the sensitivity to price as a signal of quality and in the information about the different standards (such that product differentiation would not be derived from heterogeneity in image concerns and quality preferences but from incomplete information).

As always, care should be applied when deriving conclusions from our experiment. There are several perceivable alternative explanations for our results. If a positive image can be realized by revealing a positive Fairtrade premium but does not further improve in the size of the premium, the fact that Fairtrade choosers do not increase their Fairtrade premium is not informative about their image concerns. However, if this was the case the Fairtrade premium should cluster at a very low positive level which it does not. Another argument is that the increase in image from separating could be worth less than the image of pooling with conventional choosers such that Fairtrade choosers would not find it worthwhile to increase their Fairtrade premium to achieve separation. Again, the variance in observed positive Fairtrade premia speaks against this hypothesis. Finally, some participants might see a public good character in Fairtrade but decide to free-ride in private. In public, however, they decide to contribute and thereby give an example to others who

¹⁷Table 5 shows results from regressions on the two subsamples of individuals who chose conventional and Fairtrade chocolate, respectively. Only for those who chose conventional chocolate the treatment effect is significant.

might follow them and contribute in the future. Note that our experiment is one shot so that such future contributions would have to happen outside the lab.

Moreover, even if our interpretation is correct, we only considered one very specific setting, with a specific group of participants (almost exclusively university students). We see our contribution therefore as demonstrating that indeed important types of heterogeneity in image concerns do exist, in contrast to the approach taken traditionally in the literature on conspicuous consumption and thus that it is important to take this heterogeneity into account in economic modeling as well as policy recommendations. In contrast, it would be premature to generalize our results to suggest that the intrinsically motivated are in general not concerned with social image.

Our results are, however, also in line with and help better understand other empirical and experimental results that point to important heterogeneity. Charles et al. (2009) find that visible expenditures are higher in poorer groups, which have a stronger need to signal their status, than in richer groups. This also indicates a negative correlation between the wealth to be signaled and the desire to signal. Furthermore, two survey studies point to interaction effects between intrinsic motivation and image concerns in the context of ethical consumption (Vermeir and Verbeke, 2006; Bellows et al., 2008). In a telephone survey by Bellows et al. (2008), conducted in the US, a significant share of people report to strongly value organic production systems but not to buy organic products. Furthermore, some state that they do not value organic production methods but report high probabilities of buying organic produce. The effects correlate with demographic characteristics and could be explained by a signaling concern which induces higher educated and richer individuals to spend more on organic goods.¹⁸ Using a survey combined with an experiment, Vermeir and Verbeke (2006) also describe a consumer type who buys a sustainable product despite reporting a rather negative attitude towards it. These consumers state that friends and family of theirs put high importance on their purchasing behavior. Since reacting to others' norms is just another facette of image concerns, this finding gives further empirical backing for heterogeneous image concerns in sustainable consumption. However, the experimental design of Vermeir and Verbeke (2006) is not suited to illuminate how intrinsic motivation and image concerns interact with each other. Our results are also in line with a result in a study by Filippin et al. (2012) on tax morale. In this case, social reputation (for withholding

¹⁸Also in Charles et al. (2009) within their reference group, richer individuals signal more. Furthermore, environmentally friendliness—and thus signaling it—is supposedly more important in educated and richer groups.

taxes) is negative (stigma). The authors find that those intrinsically motivated are less affected by this negative social reputation, in line with our results.

Regarding experimental studies, two articles point to relevant heterogeneity in image concerns. Grossman (2010) finds more compelling evidence for social signaling concerns if he excludes “selfish-types” and “money-maximizers”, indicating a positive relation between image motivation and intrinsic giving in his sample, opposite to what we find. The findings by Lazear et al. (2012) reported above (see Section 2) would be consistent with a negative correlation between image concerns and intrinsic motivation to give. However, the paper does not offer sufficient information on the data to check this.

Finally, our experimental design delivers a methodological insight. While a random price mechanism may be problematic for eliciting willingness to pay and especially willingness to accept because of possible misconceptions of the mechanism (Plott and Zeiler, 2005; Cason and Plott, 2012), this is less of a concern in our analysis. First of all, the mechanism is more robust for the elicitation of differences in willingness to pay (or accept), such as the Fairtrade premium that we elicit in our experiment. The reason is that any misconceptions that simply lead to a shift of the elicited WTP would influence both WTPs equally and hence be canceled out in the difference. Moreover, we are only really interested in differences in the Fairtrade premium and the effect of any misconceptions on the WTPs can well cancel out in these differences-in-differences. Most importantly, our main research questions do not rely on the absolute level and hence on precise measures of WTP or the Fairtrade premium or even of differences or differences-in-differences in the Fairtrade premium, but on whether the Fairtrade premium differs significantly across treatments or across groups of participants and whether the difference across treatments differs between the two groups of participants. Thus the crucial hypotheses rely on whether the differences and differences-in-differences in the Fairtrade premia are significantly different from zero, not on their precise magnitude. Our conclusions are therefore robust to any misconceptions that lead to a bias that results in a monotone transformation of true into stated WTP, such as the perception as a first-price auction that appears to occur in Cason and Plott (2012), as long as the bias is not systematically related to the treatment. One could imagine further misconceptions, but it appears that in order to test hypotheses relying on whether differences (and differences-in-differences and diffs-in-diffs-in-diffs) in WTP are significant, the random price mechanism is substantially more robust to misconceptions than when it is used to measure WTP.

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A Appendix



Figure 3: We used milk chocolate to derive a proxy of intrinsic preferences and dark chocolate to elicit willingness to pay.

quality tolerance	conventional	Fairtrade
0	31	82
1	1	7

FT quality	conventional	Fairtrade
0	25	46
1	7	43

Table 4: Quality tolerance takes the value 1 if the respondent chose a strictly positive value as response to the statement: “I am prepared to accept lower quality in FT products” with answer categories “strongly disagree (-3)” to “fully agree (+3)”. FT quality takes the value 1 if the respondent chose a strictly positive value as response to the statement: “Compared to conventional products, the quality of FT products is usually $<$ $>$.” with answers categories “much worse (-3)” to “much better (+3)”.

WTP _{premium}	Fairtrade		Conventional	
	all	w/o no demand	all	w/o no demand
public	0.014 (0.100)	0.059 (0.119)	0.258** (0.111)	0.267** (0.123)
marketprofit	0.008* (0.005)	0.006 (0.005)	0.004 (0.006)	0.004 (0.007)
marketprofit*public	-0.013 (0.009)	-0.016 (0.010)	-0.008 (0.008)	-0.008 (0.009)
Observations	89	75	32	28
R ²	0.071	0.054	0.182	0.194
Prob > F	0.098	0.264	0.126	0.152

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

Table 5: Results when we split the sample according to chocolate choice. Standard errors in parentheses.

WTP _{premium} > 0	Probit		Probit with RE	
	all	pos. demand	all	pos.demand
FTchoice	2.042*** (0.544)	2.302*** (0.577)	2.048*** (0.570)	2.302*** (0.577)
public	1.275* (0.667)	1.244* (0.690)	1.278* (0.674)	1.244* (0.690)
FTchoice*public	-1.535** (0.661)	-1.533** (0.707)	-1.539** (0.674)	-1.533** (0.707)
marketprofit	-0.001 (0.019)	-0.020 (0.020)	-0.001 (0.019)	-0.020 (0.020)
marketprofit*public	-0.007 (0.028)	0.015 (0.032)	-0.007 (0.029)	0.015 (0.032)
Observations	121	103	121	103
Pseudo R ²	0.1365	0.2050	-	-
Prob > F	0.000	0.000	0.008	0.001

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

Table 6: Probit model: Dependent variable is 1 if the willingness to pay a premium for Fairtrade is positive (i.e. $WTP_{Fair} > WTP_{conventional}$). Column 2 and 4 exclude no-demand observations. Column 3 and 4 include group-level random effects. Standard errors in parentheses.

WTP _{premium}	Standard	Group-level RE	Clustered SE
FTchoice	0.214 (0.192)	0.312*** (0.101)	0.214 (0.203)
public	-0.342 (0.219)	-0.094 (0.192)	-0.342* (0.174)
FTchoice*public	0.054 (0.275)	-0.220 (0.193)	0.054 (0.267)
marketprofit	-0.018 (0.012)	-0.024*** (0.006)	-0.018** (0.008)
marketprofit*public	0.029* (0.015)	0.031*** (0.011)	0.029** (0.012)
Observations	23	23	23
R ²	0.299	(a)	0.299
Prob > F	0.256	0.000	0.074

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

Table 7: Accounting for group structure in a subsample of subjects who made chocolate choice (proxy) in public: Column 2 includes group-level random effects, column 3 accounts for standard errors clustering at the group level. (a) R²: within= 0.8467, between= 0.1442, overall= 0.2151. Standard errors in parentheses.

WTP _{premium} > 0	Probit all	Probit with RE all
none		
FTchoice	-0.097 (0.844)	-0.996 (3.622)
public	-4.063	(13.565)
FTchoice*public	0.713 (1.708)	5.096 (7.764)
marketprofit	-0.078 (0.065)	-0.638 (0.504)
marketprofit*public	0.794 (0.578)	5.133* (2.805)
Observations	23	23
Pseudo R ²	0.3765	-
Prob > F	0.048	0.494

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

Table 8: Probit model for a subsample of subjects who made chocolate choice (proxy) in public: Dependent variable is 1 if the willingness to pay a premium for Fairtrade is positive (i.e. WTP_{Fair} > WTP_{conventional}). Column 2 includes group-level random effects.