Groups and Socially Responsible Production:
An Experiment with Farmers

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Abstract Does corporate social responsibility decrease when decisions are made by several people instead of an individual entrepreneur? And if so, why? I study these questions in a lab-in-the-field experiment involving 126 Italian farmers. They are asked to choose between an ecological version of a product and non-ecological version that provides them with a profit to use on their farms. To study the effect of collective decision making, I introduce a novel 2x2 design with two experimental variations: (i) the number of people responsible for the decision (one vs three); and (ii) the number of people receiving a payoff from the decision (one vs three). I find that a collective payoff leads to less socially responsible decisions, possibly because it provides participants with the moral wiggle room to behave less socially responsibly. Sharing the responsibility of the decision with others does not change behavior in this setting. I also find that my experimental measure of social responsibility correlates well with measures of social responsibility outside the lab.

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1 Introduction

Interest in corporate social responsibility (SR[1]) and consumer willingness to pay for the SR quality of products have been rising in recent years. The media often reports corporate scandals and ethical failures. For example, Volkswagen admitted in 2015 to cheating on emissions tests after the U.S. Environmental Protection Agency (EPA) found that many of its cars being sold in America had a "defeat device" to detect when their diesel engines were being tested (Bovens 2016). The media also reports on positive and SR corporate behavior. For example, in 2010 Unilever launched its Sustainable Living Plan, aimed at halving the company's environmental impacts by 2030. The program set ambitious targets, such as sustainably sourcing 100% of Unilever's palm oil by 2012 and of teas by 2020 (Confino 2012).

Producers' SR actions have been viewed primarily as responses to consumer demand (Bénabou and Tirole 2010, Kitzmueller and Shimshack 2012). Consumer attitudes regarding SR products have been studied in laboratory settings involving students and other selected groups and outside the lab with consumers (Krystallis and Chryssohoidis 2005, Didier and Lucie 2008, Vanberg 2015, Engel and Szech 2020). Producer behavior, on the other hand, has been studied almost entirely in laboratory settings using student participants (Pigors and Rockenbach 2016, Etilé and Teyssier 2016, Feicht et al. 2016). Several studies have questioned the representativeness of student subject pools, finding that, in various cases, student and non-student samples behaved differently in experiments, especially with respect to social preferences (Miller et al. 2009, Cappelen et al. 2015). Furthermore, use of abstract tasks and commodities in laboratory-based experiments can affect respondents' behavior and thus fail to reflect their behavior in the field accurately (Levitt and List 2009, List and Reiley 2010). Studies have shown, for example, that people tend to rely less on moral principles when resolving work-related ethical dilemmas, and subjects with different roles in an organization behave differently (Elm and Nichols 1993, Treviño et al. 2006, Weber and Wasieleski 2001).

Many factors determine why one entrepreneur takes SR actions and another does not (or goes even further and cheats). This study isolates two key factors that can influence entrepreneurs' SR: (i) individual versus collective decision-making and (ii) individual versus collective payoffs. Though group behavior has been extensively explored, the studies have not evaluated the effects of collective decision-making and payoffs separately. Furthermore, to improve the replicability and representativeness of the results, I study SR choices in a lab-in-the-field experiment involving producers who had previously participated in collective action using an actual commodity and task. The experiment was conducted during meetings of members of an Italian farmers' union involving

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[1] Depending on the context, SR represents "socially responsible" or "social responsibility".

126 farmer participants.

In the study, the farmers were randomly assigned to one of four decision environments and were asked to choose between an SR and a non-SR version of a product to receive. Those who selected the SR version received the product, a pair of environmentally friendly work gloves. Those who selected the non-SR version received the product, a pair of work gloves that were not environmentally friendly, and a monetary bonus, making the non-SR choice profitable. The farmers in each session were also assigned to three-person groups to facilitate analysis of collective versus individual behavior. The four decision environments represented combinations of two treatments. Treatment 1 tested the effect of the number of farmers (collective versus individual) who made the product/payoff decision, and Treatment 2 tested the effect of the number of farmers (individual versus collective) who received the product/payoff. In the *individual decision* environments, one participant's decision determined the product/payoff selected. In the *collective decision* environments, the majority "vote" of a group's three members determined the product/payoff selected. In the *individual payoff* environments, individual participants received the selected product/payoff. In the *collective payoff* environments, everyone in the group received the selected product/payoff.

Numerous studies report that *collective decision-making* reduces SR behavior, suggesting that group decisions diffuse group members' sense of responsibility (Falk and Szech 2013, Kirchler et al. 2016, Irlenbusch and Saxler 2019) and thus lead to less SR (Latané and Nida 1981, Kirchler et al. 2016, Weisel and Shalvi 2015). *Collective payoffs* also affect social preferences. With collective payoffs, there is greater defection in prisoner dilemmas (Charness et al. 2007), less cooperation in public good games (Humphrey and Renner 2011), and greater cheating in die-rolling tasks (Gino et al. 2013b). I find no significant evidence that group majority-based decision-making diffuses responsibility and affects SR choices. Instead, I find that collective payoffs affect SR and lead to fewer SR choices.

Collective payoffs can decrease SR in two ways. First, participants can care more about groupmates' payoffs than about payoffs to outsiders and thus be motivated to maximize the payoffs of everyone in their groups (in-group bias or a moral dilemma). In-group bias is the tendency to evaluate one's own group and/or its members more favorably than other groups and group members (Hewstone et al. 2002). Moreover, the choice between behaving in a SR way or obtaining a greater payoff for peers can represent a moral dilemma in which both outcomes have moral value to the decision-maker and can even align with moral norms (Freeman 2001, Lantos 2001, Meehan et al. 2006). In this case, decision-makers could choose to maximize the in-group earnings and disregard the social cost of the non-SR option because it benefits members of their groups (Babcock et al. 2015, Bornstein et al. 2004, Chen and Li 2009,

Conrads et al. 2013).

Alternatively, decision-makers who do not care about their groupmates' welfare can exploit the fact that the payoff is for the group and choose the non-SR product to increase their own payoffs. A collective payoff for a group gives them moral "wiggle room," a cognitive process in which they justify giving themselves the maximum profit because that choice happens to benefit their groupmates as well. Studies have confirmed that people value being viewed as SR (Brekke et al. 2003, Bénabou and Tirole 2006, 2010) and will knowingly manipulate ethical rules to serve themselves (Dana et al. 2007, Ayal and Gino 2011, Shalvi et al. 2015). Deciding the payoff of the group could create the moral wiggle room for participants to act non-SR and increase their own profits, pretending to act in the interest of the group and thus retaining their SR images (Babcock and Loewenstein 1997, Gino et al. 2013a).

This analysis compares choices made when a collective payoff goes only to other groupmates and not to the chooser versus to all group members to discern changes in SR resulting from in-group bias or moral dilemmas from changes resulting from moral wiggle room. When the results of the two choices are similar, participants care about groupmates' earnings, indicating the presence of a moral dilemma and/or in-group bias. When the results of choices that benefit others are different from choices that benefit all, a decline in SR represents self-serving choices justified by moral wiggle room to retain greater earnings without losing their appearance of SR.

I find no significant evidence that majority-based *collective decision-making* diffuses responsibility and affects SR choices. The results indicate, instead, that *collective payoffs* underlie changes in SR and lead people to make fewer SR choices. I further find preliminary evidence, in the comparison of decisions about payoffs only for others (excluding the decision-maker) versus payoffs for the decision-maker and others, that payoff commonality creates moral wiggle room for subjects to continue to appear SR to others and maintain their SR self-images while acting irresponsibly and selecting higher profits "in the interest of the in-group." Decisions made for groupmate payoffs are indeed significantly different from decisions made for whole-group payoffs.

The experiment also asked farmers to make fifteen individual decisions about obtaining a bonus payoff or donating €5 to a charity to explore potentially heterogeneous levels of SR that could affect product/payoff selection decisions.

After completing the choices, participants answered questions designed to collect data on their socio-demographic characteristics and qualities of their farming operations. The information from the questionnaire was used to analyze potential effects of farmer and farm characteristics on their SR product and donation choices. I find a positive relationship between SR choices and

production of organic products and the number of a farm's decision-makers. Additional years in farming are associated with decreased SR while greater yearly revenues are associated with increased SR. In addition, farmers who typically purchased organic products for their operations selected the SR product more often than other farmers.

The study makes three primary contributions. First, I study actual SR decisions made by agricultural producers who have participated in collective action in the lab-in-the-field experiment. These farmers should readily understand potential trade-offs required between profits and SR. Second, studying farmers provides an opportunity to link outcomes of SR decisions to characteristics of the farm operations. Moreover, the analysis isolates the impact of collective decision-making from other impacts on SR choices and investigates potential interactions between collective decision-making and collective payoffs. Third, I use a within-subject decision to identify the cause of any reductions in SR outcomes under collective payoffs. The results suggest that payoff commonality creates moral wiggle room, allowing participants to act to benefit themselves while retaining their images as SR internally and externally.

The rest of the paper is organized as follows. Section 2 presents the experiment design and describes the sample, the purchase and donation decisions, the treatments, and the survey. Section 3 describes the study hypotheses and predictions. Section 4 presents the results of the study in terms of non-parametric statistics and the regression analysis, and section 5 presents a concluding summary of the contributions of the study and potential avenues for future research.

2 Experiment design

2.1 Sample and recruitment

The framed field experiment collected data from 126 Tuscan farmers who were associates of the Confederazione Italiana Agricoltori (CIA, Italian Farmers Confederation).[2] I contacted the general director and vice-president of the Tuscan CIA by email, inviting members to participate in a project aimed at understanding entrepreneurial choices. Included in the email was a leaflet for them to present to regional CIA presidents that described the aim of the study but provided no information about the research questions (Appendix 6, Figure 2). Information about the CIA is presented in Appendix 7.

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[2] Ethical approval to conduct the study was obtained from the Ethics Sub-committee of the School of Economics of The University of Edinburgh. The experiment protocol was preregistered with AEA RCT under trial identification number AEARCTR-0002226. Details of the registered protocol can be found at https://www.socialscienceregistry.org/trials/2226/history/19360.

The experiment was conducted during twelve local and regional assemblies of the CIA in Tuscany: eight in Florence, one in Arezzo, one in Massa Carrara, one in Grosseto, and one in Siena. Assembly presidents introduced the study and invited attendees to participate. The number of participants in the assembly sessions varied from 6 to 19, resulting in 126 participants in total. In each session, the participants were randomly assigned to the two treatments (individual versus collective decisions and individual versus collective payoffs) and to three-person groups, except for the treatment with an individual decision and payoff. Participants were not told who the members of their groups were. Assignment to a group or individual treatment was based on the number of participants in the session and to balance the distribution of participants across treatments.[3]

Participants completed the experiment and questionnaire using pen and paper while in the same room as the rest of the assembly. On average, 90% of assembly members agreed to participate, and they were given the written informed consent form (Appendix 6, Figure 3) and the instructions for the experiment, which was conducted in three parts. A translated version of the instructions is included in the online resources. The consent form and experiment instructions were also read aloud. Experiment sessions lasted 30 to 45 minutes. The experiment administrator then sorted the submitted responses into participant treatments and groups in a separate room. Cash earned was put into envelopes labeled with the identification numbers of participants so they could pick them up before leaving the meeting.

2.2 Product decision

In the experiment, the producers chose one of two versions of the product to receive: (i) a pair of environmentally friendly "ecological" work gloves (the SR option) or (ii) a pair of non-ecological work gloves (the non-SR option) plus a monetary cash bonus. Participants were informed that the ecological gloves were made from sustainable, recyclable bamboo and certified as produced in sweatshop-free plants. The non-SR gloves were a profitable option since they were accompanied by a monetary bonus. Participants were informed that those gloves were made of non-recyclable nylon and were given no information about their production. Furthermore, participants were told that the two pairs of gloves had similar market prices (around €15), fulfilled the same function, and otherwise had the same characteristics. To increase the external validity of the study, the participants made actual economic decisions (Levitt and List 2007)

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[3] Three participants left before completing the experiment and questionnaire, creating two groups of two farmers and one group of four farmers. Since the participants were not aware of their group assignments, they did not know whether the size of their group was affected. In addition, each observation is treated as independent in the analysis and thus does not affect their decisions or the results.

and received the products and cash bonuses selected. The products chosen in the experiment (ecological and non-ecological work gloves) were delivered to participants' farms by Amazon within one month of their participation, and they received any payoff earned at the end of the experiment. Their glove decisions were made in response to the price list shown in Table 1 in which the payoff for choosing the non-SR product varied in steps of €2 from a low of €2 to a high of €20.

Table 1 Decision pairs for the individual decision and individual payoff treatment.

Select the box corresponding to the purchase decision you prefer FOR EACH DECISION PAIR (only one box per decision pair)		
Decision pair 1	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **2 euros**	☐
Decision pair 2	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **4 euros**	☐
Decision pair 3	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **6 euros**	☐
Decision pair 4	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **8 euros**	☐
Decision pair 5	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **10 euros**	☐
Decision pair 6	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **12 euros**	☐
Decision pair 7	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **14 euros**	☐
Decision pair 8	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **16 euros**	☐
Decision pair 9	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **18 euros**	☐
Decision pair 10	A: Choose the ECOLOGICAL gloves and you get **0 euros**	☐
	B: Choose the NON-ECOLOGICAL gloves and you get **20 euros**	☐

Participants were told that one of the ten decision pairs (product choices) would be randomly drawn and implemented to distribute the gloves and payoffs. Each session consisted of three parts: the product decision, the donation decision, and the survey. One-third of the participants in the product decision were randomly selected and their choices about their own or group payoffs were implemented. This was done to reduce the number of work gloves shipped to farm addresses. The other two-thirds of the participants had their choices im-

plemented in the donation portion of the experiment (described in Section 5).

Willingness to pay (WTP) for the SR quality of a good is defined here as the greatest monetary amount participants were willing to forgo to "purchase" the SR gloves. That is, they preferred the SR gloves over the non-SR gloves plus bonus. The smaller the bonus required to convince them to switch to the non-SR product, the less they cared about the product SR quality. Therefore, we can interpret the bonus amount as the price premium the farmers were willing to pay for the SR alternative.

2.3 Treatments

Table 2 presents the two-by-two treatment design resulting in four decision environments. Hereafter, I denotes individual and C denotes collective. The first treatment addresses how the product decision is made: individually versus collectively by majority votes of the groups (I - x versus C - x). For the collective (majority) decisions, the experiment administrators sorted the submitted choices into the participant groups and calculated each group's collective decision. The second treatment addresses how the payoff is distributed: to individuals versus collectively to members of groups (x - I versus x - C). When the payoff is for the group, each member receives the same payoff. This presents participants with the same individual trade-off in the choice pairs for all treatments.[4] There was no communication between participants and their choices were fully anonymous so there could be no public backlash in response to non-SR decisions.

Table 2 Treatment groups.

		Treatment 1: Decision	
		Individual	Collective
Treatment 2: Payoff[a]	Individual	I - I	C - I[b]
	Collective	I - C	C - C

The cells represent the four decision environments. The first letter refers to the decision-maker and the second letter to who receives the payoff. [a] The payoff consists of the pair of gloves and any cash bonus. [b] In C - I, participants make two decisions: one about their personal payoff and one about groupmates' payoffs.

Three of the four treatment combinations are straightforward: I - I, C - C, and I - C. Each participant is presented with a single scenario and makes ten

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[4] This process differs from the preregistered one, in which the payoff was shared among group members when the payoff was collective.

product choices (one for each bonus amount), and one of the choices will be randomly selected to be binding. In treatment C - I, each participant faces two scenarios and makes ten product choices per scenario but is not aware that there will be two sets of decisions. All the decision environments present the same two choices (described in I - I), and Table 3 shows the decisions faced in each treatment.

In the I - I treatment, the farmer participants individually choose which option they prefer in the ten decision pairs: the ecological pair of gloves or the non-ecological pair of gloves plus a varying monetary bonus. One-third of the participants and one of the ten decisions are randomly selected, and their individual preferences in the selected decision are implemented. Thus, one in every three participants receives the product they chose in the randomly selected decision.

In the C - C treatment, the farmer participants "vote" by selecting which option they prefer for collective payoffs to their groups. One-third of the groups are randomly selected to receive the product/payoff, and one of the ten decisions is randomly selected for implementation. The option in the selected decision that receives the most votes in each group determines which product/payoff they will receive (a collective decision). In this case, all members of the selected groups receive the majority-chosen option in the selected decision.

In the I - C treatment, the farmer participants "vote" by selecting which option they prefer all members of their groups to receive. Then, one participant in each group (one-third of all participants) is randomly selected to be the decision-maker for the group. One of the ten decisions is randomly selected for implementation. Thus, all members of the group receive the option chosen by the randomly selected decision-makers in the groups.

In the C - I treatment, each participant farmer is presented with two scenarios and makes ten decisions in each scenario. First (C - I ind), they "vote" by selecting the option they prefer to receive, knowing that the product/payoff will be determined by majority votes of their groups. At this stage, participants are not aware that they will be making a second set of decisions. They are aware that only one member of the group will receive the selected product/payoff but do not know who has been selected as receiver. The participants then consider the same ten decision pairs in the second scenario (C - I group) after being informed that they are "voting" this time for which option a groupmate will receive and that the product/payoff will be determined by group majority vote. After the two sets of decisions are complete, one member of each group (one-third of all participants) is randomly selected to be a receiver. One of the ten decisions is randomly selected for implementation. Each group member designated as a receiver then obtains the product/payoff chosen in the selected decision by a majority vote consisting of the receiver's preference in the C - I ind scenario and the receiver's groupmates' preferences

in the *C - I group* scenario. I use this within-subject design to compare the SR of participants when choosing for a whole-group payoff (including their own) versus choosing for a groupmate's payoff. I thus shed light on drivers underlying payoff commonality effects.

In this product decision, one-third of individuals are paid in *I - I* based on their choices, one-third of groups are paid in *C - C* based on their group choices, one-third of participants are paid in *C - I* based on their group choices, while all participants are paid in *I - C* based on the choices of one member of their groups. Decision-making should be influenced by the probability of one's choice being implemented and not by variation in the probability of being paid. The probability of a participant's choice being implemented was one-third in each treatment.

Table 3 Payoff choices.

	SR prduct + €0	**Non-SR product + €10**
I - I	1 pair of ECO gloves + €0	1 pair of non-ECO gloves + €10
C - I	1 pair of ECO gloves + €0	1 pair of non-ECO gloves + €10
I - C	3 pairs of ECO gloves + €0	3 pairs of non-ECO gloves + €30
C - C	3 pairs of ECO gloves + €0	3 pairs of non-ECO gloves + €30

Payoff choices in the four treatments in decision-pair 5. In *C - I* and *C - C* (collective decisions), the decisions are made by the majority vote of the group. In *I - C* and *C - C* (collective payoffs), every participant in a group receives a pair of gloves and, when the non-SR product is selected, €10.

2.4 Donation decisions

In the second part of the experiment, the participants made fifteen individual decisions about whether to receive a bonus payment or forgo the bonus and donate €5 to a nongovernmental organization (NGO), ASeS (Agricoltori Solidarietà e Sviluppo, farmers solidarity and development),[5] as set out in the choice list shown in Table 4. These decisions control for heterogeneity in their preferences for SR in the main analysis. I also correlate these results with farmer and farm characteristics.

As in Irlenbusch and Saxler (2019) and Kirchler et al. (2016), this choice requires the participants to choose in a choice list setting between forgoing

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[5] ASeS is supported by CIA. Its mission is to support rural communities in developing countries by improving their agricultural capacities, availability of new technologies, and village socio-sanitary conditions

a bonus to make a donation (SR) and creating a negative externality for the uninvolved third party by opting to receive the bonus and not donate (non-SR). The negative externality was held constant at €5 to analyze the subjective cost participants assigned to non-SR behavior. The bonus payment ranged from €0 to €28, increasing in steps of €2. One of the fifteen decision pairs was randomly drawn for implementation and bonuses selected in that decision were paid to the two-thirds of participants who were not selected in the first part of the experiment. Willingness to donate is defined here as the greatest monetary amount at which participants were willing to donate €5 to ASeS.

2.5 Summary statistics

Before leaving, the participating farmers filled out a questionnaire (see the questionnaire in the instructions presented in the online resources). The first section collected information about their farms: how long they had been in business (years), number of people who made decisions for the farm, number of employees, annual revenue, certifications (organic, locally produced), and whether they used organic practices. The next section collected information about the participating farmers' demographic characteristics and perceptions, which were rated on seven-point Likert scales. When rating whether they perceived decisions to select the non-ecological gloves and to not donate to the charity as SR, 1 represented "not SR" and 7 represented "very SR". A similar Likert scale was used to rate their perceptions of pressure associated with choosing SR versus non-SR for others and for their groups in the product decision. They were also asked to rate the SR of the other participants in their sessions as more SR (+1), equally SR (0), or less SR (-1) than they were. Finally, they were asked to predict their preferences for environmentally friendly products ("greenness") using the GREEN scale by Haws et al. (2014), which is presented in Appendix 8. A greenness score for each participant was then calculated by averaging their ratings for the six questions.

Table 5 reports the mean response for each question by treatment, the overall mean, the minimum and maximum values, and P-values based on F-tests of equality across treatment conditions.[6] The treatments are balanced across all characteristics except perceptions of the SR of not donating and number of years in business. I control for those two variables in the regression analysis. The results show that the participating farmers were an average of 44 years old and that 32% were female (which, according to OECD data, is in line with the average in Italy, where the percentage of female entrepreneurs is quite high). The average greenness score was 6 on a 1-7 scale. The average score found by Haws et al. (2014) for a sample of adult Americans was about 4. In terms of SR decisions, the participants preferred making the €5 donation to ASeS over receiving a bonus of up to €17. On average, they considered not donating

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[6] In the *C - C group*, two participants did not answer any of the questions and thus do not appear in the statistics.

Table 4 Donation decision pairs.

Select the box corresponding to your preferred alternative for each decision pair		
Decision pair 1	X: **0 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 2	X: **2 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 3	X: **4 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 4	X: **6 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 5	X: **8 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 6	X: **10 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 7	X: **12 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 8	X: **14 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 9	X: **16 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 10	X: **18 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 11	X: **20 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 12	X: **22 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 13	X: **24 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 14	X: **26 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐
Decision pair 15	X: **28 euro** payoff to you and no donation	☐
	Y: **5 euro** donation	☐

as moderately non-SR (3.42), explaining the relatively large bonus they were willing to give up to donate €5. Regarding participants' farming operations, the average number of employees was 3.4 with a minimum of 1 and a maximum of 40. Decisions were made by an average of 1.93 people with a maximum of 10 people. Their farms had been in business for 17 years on average, and their average annual revenue was in the €30,0000 to €50,000 bracket. A little

more than one-third (36%) produced at least one organic product and more than half routinely purchased organic inputs. Lastly, the participating farmers generally viewed the other participants in their sessions as equally ethical. There were small, insignificant differences across treatments.[7] The particular attention of the sample to SR is important because it allows for analysis of behaviors across treatments by producers who usually take the SR quality of goods into account. This feature should not affect comparisons between treatments and is included as a control variable in the regression analysis.

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[7] The responses to the questions were not incentivized and could have been influenced by their responses in the product and donation decisions. Table 5 shows, however, that there are no statistical differences in their responses by treatment condition.

Table 5 Summary statistics.

	(1)	(2)	(3)	(4)	F-test	(5)	(6)	(7)
	I - I	C - I	I - C	C - C	P-value	Overall	Min	Max
Donation	16.47	17.81	16.00	17.61	0.92	16.97	0	28
	(12.47)	(11.13)	(11.86)	(12.71)		(11.93)		
Age	48.03	41.81	43.97	45.87	0.38	44.88	22	77
	(17.11)	(8.38)	(16.18)	(14.13)		(14.29)		
Female	0.27	0.35	0.26	0.35	0.75	0.31	0	1
	(0.45)	(0.49)	(0.44)	(0.49)		(0.46)		
Years in business	22.11	17.48	12.97	14.30	0.11	16.66	1	75
	(19.70)	(10.89)	(15.94)	(13.38)		(15.40)		
No. of employees	5.17	3.32	2.32	3.00	0.08	3.44	0	40
	(7.97)	(3.04)	(1.66)	(1.67)		(4.46)		
No. of decision-makers	2.02	1.90	1.93	1.90	0.99	1.94	0	10
	(1.88)	(0.65)	(1.66)	(0.82)		(1.34)		
Yearly revenue[a]	2.37	2.87	2.24	2.34	0.56	2.46	1	7
	(1.96)	(1.98)	(1.86)	(1.65)		(1.86)		
Locally produced	0.62	0.52	0.77	0.58	0.22	0.62	0	2
	(0.56)	(0.51)	(0.43)	(0.50)		(0.50)		
Organic product	0.28	0.35	0.37	0.42	0.72	0.36	0	1
	(0.45)	(0.49)	(0.49)	(0.50)		(0.48)		
Buy organic	0.55	0.48	0.62	0.58	0.76	0.56	0	1
	(0.51)	(0.51)	(0.49)	(0.50)		(0.50)		
Others' SR[b]	0.04	-0.03	-0.11	0.13	0.20	0.01	-1	1
	(0.33)	(0.55)	(0.50)	(0.35)		(0.45)		
Greenness score	5.92	6.05	6.06	6.14	0.87	6.04	3	7
	(1.22)	(0.94)	(0.90)	(0.80)		(0.96)		
SR of non-eco[c]	2.81	3.38	3.77	3.45	0.18	3.37	1	7
	(1.74)	(1.12)	(1.83)	(1.72)		(1.64)		
SR of non-donating[d]	2.88	4.07	3.07	3.62	0.04	3.42	1	7
	(1.82)	(1.39)	(1.51)	(1.93)		(1.71)		
N	30	31	32	31	124	124	124	124

Note: The P-values are based on F-tests of equality across the four treatment conditions. Standard errors are shown in parentheses. [a] Yearly revenue is revenue in euros selected by participants from seven brackets: less than 30,000; 30,000 to 50,000; 51,000 to 70,000; 71,000 to 100,000; 101,000 to 250,000; 251,000 to 400,000; and more than 400,000. [b] Others' SR reflects participants' ratings of the SR of other participants in the session: +1 if others are more SR, -1 if others are less SR; and 0 if others are equally SR. [c] SR of non-eco refers to whether participants considered selection of the non-ecological gloves as SR where 0 is non-SR. [d] SR of non-donating refers to whether participants considered not making a donation as SR where 0 is non-SR.

3 Hypotheses and predictions

This section presents hypotheses about the product decision related to two dimensions that potentially influence the SR of participants' choices: (i) the number of people responsible for the decision (individual versus group) and (ii) the number of people receiving a payoff from the decision (individual versus group). Appendix 9 derives the simple model based on Bartling et al. (2015) for these predictions.

3.1 Social preferences

A large economic literature has established that people have social preferences and behave according to moral and social norms (Elster 2000, Camerer 2003, Krupka and Weber 2009, Engel 2011, List 2011, Krupka and Croson 2016). Several models have also accounted for non-selfish motives for behavior (Andreoni 1990, Fehr and Schmidt 1999, Bolton and Ockenfels 2000, Rabin 1993, Charness and Rabin 2002, Falk and Fischbacher 2006).

When individuals incur a cost for non-SR choices, those individuals should be willing to give up some amount to receive the SR good (*WTPSR*).

Hypothesis 1 *With social preferences, mean WTP for a SR good is positive:*
$$WTPSR > 0$$
where *WTPSR* is the price premium participants are willing to pay for the SR product.

3.2 Collective decision-making

3.2.1 Diffusion of responsibility

When individuals incur a cost when producing negative externalities or choosing non-SR behavior, that cost can be shared when such decisions are made by groups and their choices cannot be imputed from the results (Dana et al. 2007, Kirchler et al. 2016, Irlenbusch and Saxler 2019, Weisel and Shalvi 2015, Rothenhäusler et al. 2018).

Thus, in collective decision-making by majority, participants can attribute less personal responsibility to their non-SR behavior. Applied to the experiment at hand, the hypothesis suggests that fewer participants will choose the SR gloves in the *C - I ind* treatment than in the *I - I* treatment and in the *C - C* treatment than in the *I - C* treatment.

Hypothesis 2 *With diffusion of responsibility, mean WTP for the SR product under collective decision-making is less than mean WTP under individual decision-making:*
$$WTPSR\ Collective\ decision < WTPSR\ Individual\ decision$$

3.3 Payoff commonality

Another important potential influence on SR is payoff commonality, which occurs when individuals share the benefit of their non-SR behavior with others. The second treatment allows me to analyze the effect of group payoffs on SR and non-SR behavior and two possible forces driving this effect.

3.3.1 Interest in groupmate profits

Studies have shown that individuals choosing for members of their groups have relatively strong concern about their group members' payoffs (Babcock et al. 2015, Bornstein et al. 2004, Chen and Li 2009, Conrads et al. 2013). In-group/out-group bias and the preference for in-group member payoffs have been documented in many contexts (Hewstone et al. 2002), including teacher-student relations and in business (Akerlof and Kranton 2002, Hewstone et al. 2002, Akerlof and Kranton 2005, Besley and Ghatak 2005, Akerlof and Kranton 2010). Furthermore, choosing between SR actions and payoffs for one's group can create moral dilemmas for decision-makers in which both outcomes have moral value. In the context of firms, corporate SR can create dilemmas for managers responsible for fulfilling shareholder expectations because of trade-offs between philanthropy and profit maximization (Freeman 2001, Lantos 2001, Meehan et al. 2006).

According to these tendencies, individuals making decisions about collective payoffs will emphasize maximizing their groupmates' profits and choose relatively profitable non-SR options. Applied to the experiment at hand, the SR gloves will be chosen less often in I - C than in I - I, less often in C - C than in C - I ind, and less often in C - I $group$ than in C - I ind.

Hypothesis 3 *When participants care about in-group members' profits, mean WTP for the SR gloves will be less when they are choosing for their groupmates and for a group payoff:*

$$WTPSR \ Collective \ Payoff < WTPSR \ Individual \ Payoff$$
$$WTPSR \ Groupmate \ Payoff < WTPSR \ Individual \ Payoff$$

3.3.2 Moral wiggle room and self-serving altruism

When actions benefit others in addition to themselves, decision-makers tend to put less emphasis on moral norms and more emphasis on their own personal benefits. They justify self-interested actions via a phenomenon known as moral wiggle room (Gino et al. 2013a, Wiltermuth 2011). For example, when making decisions about a group payoff, they justify their non-SR decisions, which increase their own payoffs, as decisions that benefit their groupmates monetarily and thus retain their internal images of themselves as SR (Ayal and Gino 2011, Dana et al. 2007).

Wiggle room suggests, therefore, that people making collective decisions will maximize group profits and choose the more-profitable option so long as they personally also benefit from the choice. Applied to the experiment at hand, the SR gloves will be chosen less often in *I - C* than in *I - I* and in *C - C* than in *C - I ind*. In *C - I group*, in which the payoff chosen does not apply to the chooser, the SR gloves will be chosen more often than in *C - C*.

Hypothesis 4 *Self-serving altruism will lead to less mean WTP for the SR gloves under whole-group decisions and greater mean WTP under others-only decisions:*

$$WTPSR \ Collective \ Payoff < WTPSR \ Individual \ Payoff$$
$$WTPSR \ Groupmate \ Payoff \geq WTPSR \ for \ Individual/Collective \ Payoff$$

4 Results

4.1 Non-parametric results

Figure 1 shows average WTP for ecological gloves in the treatments. Table 6 reports the mean and standard deviation of WTP for the SR gloves in the treatments, and P-values based on two-sample Mann-Whitney tests comparing pairs of treatments and Wilcoxon matched-pair signed-rank test comparing *C - I ind* to *C - I group*.[8]

Table 6 Comparison of willingness to pay for SR gloves for pairs of treatments.

	I - I	*C- I ind*	*C- I group*	*I - C*	*C - C*
I - I		0.8336	0.7885	0.0250 **	0.0095 ***
C- I ind	0.8336		0.1250	0.0426 **	0.0131 **
C- I group	0.7885	0.1250		0.0138 **	0.0049 ***
I - C	0.0250 **	0.0426 **	0.0138 **		0.6924
C - C	0.0095 ***	0.0131 **	0.0049 ***	0.6924	
Mean	15.867	14.710	15.548	11.355	9.935
SD	6.684	7.542	7.370	8.616	8.981

Comparison of WTP for the SR gloves between pairs of treatments. P-values based on two-sample Mann-Whitney tests and Wilcoxon matched-pair signed-rank test comparing *C - I ind* and *C - I group*. Significance levels: $*p < 0.1; **p < 0.05; ***p < 0.01$.

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[8] The significant differences across pair of treatments are robust to using T-tests and Somers' D tests clustered at the session level.
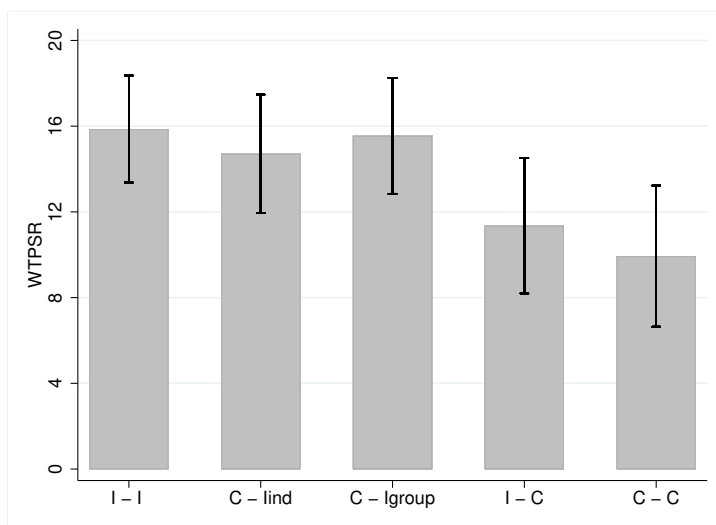
Fig. 1 Mean willingness to pay for SR gloves in each treatment.

Mean of *WTPSR* for each group with WTP measured on a scale from €2 to €20. Error bars reflect the +/- 1 standard errors of the means.

The price premium farmers are willing to pay for the SR gloves is €13.47 on average and *WTPSR* is positive, indicating that not choosing the SR option has a cost.

Result 1 *Farmers choose the SR option and, on average, are willing to pay a positive amount to receive the SR gloves.*

To investigate the effects of *collective decision-making* on SR choices, I compare treatments in which the decisions are made by group majority (*C* - x treatments) to treatments in which the decisions are individual (*I* - x treatments). As shown in Table 6, the WTP for the SR gloves in *C - I ind* is not significantly different from WTP in *I - I* and, likewise, WTP for the SR gloves in *C - C* is not significantly different from WTP in *I - C*. These results show that the cost of choosing the non-SR option is not diffused by collective decision-making when there is no communication between group members and choices are made anonymously.

Result 2 *Collective decision-making does not modify the SR of participants' choices as farmers' WTP for the SR gloves is not affected by group majority versus individual decision-making.*

To investigate the effects of *collective payoffs* on SR choices, I compare treatments in which the payoff is for the group (x - *C* treatments) to treatments

in which the payoff is individual (x - I treatments). I find that WTP for the SR gloves is significantly less for I - C payoffs than for I - I payoffs and for C - C payoffs than for C - I ind payoffs. Thus, when payoffs are collective, group members less often choose the SR option.

Result 3 *Collective payoffs reduce the SR of participants' choices as farmers' WTP for the SR gloves is less for group payoffs than for individual payoffs.*

Next, I explore whether reduced SR depends on (i) participants caring about groupmates' payoffs or (ii) participants choosing greater profits for themselves (own-interest) and pretending to act in the interest of their group-mates. This is accomplished by comparing decisions when a payoff benefits the entire group (x - C treatments) to decisions when a profit only benefits groupmates and does not benefit the decider (C - I $group$ treatment). These results show that decisions that affect the entire group, including the deciders' own payoffs (C - C and I - C), significantly reduce WTP for the SR gloves relative to decisions that only affect the deciders' groupmates (C - I $group$). Thus, collective payoffs do not reduce SR because the participants cared about groupmate profits. Instead, they decline because participants exploit moral wiggle room to behave in their own interests when payoffs are collective.[9]

Result 4 *Making decisions for a group reduces the SR of participant choices only when their own payoffs are involved as farmers' WTP for the SR gloves is less for whole-group payoffs that benefit them than for groupmate-only payoffs.*

Figure 4 in Appendix 10 shows the distribution of WTP for the SR gloves by treatment. Note that WTP is censored between €0 and €20 and the presence of several participant clusters at the extremes. In I - I, C - I ind, and C - I $group$, in which the bonus earned by selecting the non-SR option is personal or only for groupmates, a substantial fraction of the participants never selected the non-SR option in the ten decisions and no participant chose the non-SR but "profitable" option in all ten decisions. In I - C and C - C, in which the payoff is collective, more than 20% of participants always preferred the non-SR option. Thus, these results confirm that the SR of decisions changes when other participants also benefit monetarily from the non-SR decision.

The experiment elicits WTP via a price list so there is potential for participants to switch back and forth between the SR and non-SR options. The analysis indicates that 9% of the participants made multiple switches when

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[9] Since participants were less SR when deciding for others, they should also believe that others would be less SR. The questionnaire asked participants to rate how much other participants in their sessions valued the SR of the product. Of 117 responses to this question, 94 of the participants thought others valued the SR product as much as they did (12 thought others valued it more and 11 thought others valued it less). This analysis confirms the finding that deciders in collective payoff decisions are less SR because they choose to act in their own interests and exploit moral wiggle room to justify their decisions.

choosing the product (two in *I - I*, five in *I - C*, four in *C - C*, and one when deciding for groupmates in *C - I group*). Though the effect is not significant, the results also show that switching was more common when participants made collective payoff decisions, potentially signaling some hesitancy on their part to choose the non-SR option for the group. These analyses measure WTP to be SR as the lowest monetary amount at which participants preferred the non-SR option over the SR option since it signals their willingness to choose the non-SR option to obtain the bonus. These non-parametric results are robust to exclusion of multi-switcher participants, and the results of the Mann-Whitney tests comparing those pairs of treatments do not change.

In summary, the non-parametric analysis shows that farmers incur a cost when they choose the non-SR option and that group decision-making does not diffuse their sense of SR. Collective payoffs, on the other hand, reduce the SR of farmers' choices and increase payoffs for the groups. When a collective payoff benefits the entire group (rather than them personally or only their groupmates), the farmers choose the more profitable option to obtain greater payoffs for themselves. They justify their decisions based on moral wiggle room provided by alignment of their own interests with the interests of their groupmates and preserve their internal images of themselves as SR.

4.2 Regression results

4.2.1 Product decisions

I analyze the impact of the two dimensions of collective decision-making and collective payoffs on WTP for the ecological gloves (SR product) by estimating models of the following form for the outcomes of interest:

$$
\begin{aligned}
Y_i = {} & \beta_1 CollectiveDecision_i + \beta_2 CollectivePayoff_i \\
& + \beta_3 CollectiveDecision_i \times CollectivePayoff_i \\
& + \delta X_i + \varepsilon_i
\end{aligned}
\tag{1}
$$

where Y_i denotes the outcome variable for participant i. β_1, β_2, and β_3 are the coefficients of interest. $CollectiveDecision_i$ is a dummy variable that takes a value of 1 for participants making collective decisions and 0 for participants making individual decisions. $CollectivePayoff_i$ is a dummy variable that takes a value of 1 when participants choose collective payoffs and 0 when participants choose personal payoffs. X_i is a vector of control variables, and ε_i is an idiosyncratic error term. Since *C - I group* is a within-subject decision, that treatment is not included in the regression analysis.

Table 7 reports the estimated coefficients for three outcome measures: (i) an ordinary least squares (OLS) model (columns 1 and 2) in which WTP for the SR product is defined as a continuous variable, (ii) a logit model for a

binary variable (columns 3 and 4) that equals 1 for farmers who have positive WTP for the SR product (prefer the ecological gloves in at least one of the choices), and (iii) a logit model (columns 5 and 6) for a binary variable that equals 1 for farmers who have the greatest WTP (€20) for the SR product (prefer the ecological glove in all choices). Columns 2, 4, and 6 present coefficients from an augmented model that controls for several farm and farmer characteristics.

The results from the regression analysis confirm that collective decision-making does not change WTP for the SR product (columns 1 and 2) and does not modify the probability that a farmer is willing to pay the maximum amount (columns 5 and 6) for the SR product. Instead, collective decision-making increases the probability that a farmer is willing to pay a positive amount for the SR product (columns 3 and 4). Collective payoffs, on the other hand, increase decision-makers' focus on monetary gains and thus reduce WTP for the SR product by €4 to €5 (columns 1 and 2). The probability that a farmer is willing to pay a positive amount and the maximum amount for the SR product both decrease more than 20 percentage points. And in C - C, in which a collective decision is made about a collective payoff, the probability that group is willing to pay a positive amount for the SR product decreases significantly.

In terms of covariates, a greater number of years in business decreases WTP for the SR product. This result is in line with previous findings that managers, partners, and long-tenure employees put less emphasis on moral reasoning when making corporate decisions (Treviño et al. 2006, Elm and Nichols 1993). Willingness to donate and routine purchases of organic inputs also are positively related to WTP for the SR product. Thus, it seems that these three outcomes capture the underlying basis of SR of individuals. The greenness score, on the other hand, is significantly related to WTP only in a few cases. As expected, WTP for the SR product increases with income bracket and there is a significant positive relationship between yearly revenue and WTP.

Since WTP was censored to between €0 and €20, I conducted a separate analysis using the Tobit model for WTP and report those results in Appendix 11; they are similar to the results from the OLS analysis in terms of significance and direction of effects but lead to larger coefficients. In Appendix 11 I also report results from the OLS model for the logarithm of (1 + WTP for the SR product); those results again are similar to the results from the OLS analysis.

Appendix 12 reports the results of the regression that excluded multi-switchers. Their exclusion reduces the power of the estimates, and the impact of collective payoffs becomes insignificant in the OLS model without covariates. The impacts in the OLS model with covariates and the Tobit models remain

significant at the 10% and the 5% and 10% levels, respectively. The directions of the effects are unchanged. The results of additional checks and a survey validation of the measure of SR are provided in Appendix 12.1.

4.3 Donation decisions

Table 8 presents the estimated coefficients for four outcome measures: (i) an OLS model for willingness to donate defined as a continuous variable, (ii) a Tobit model for willingness to donate because it was censored to between €0 and €28, (iii) a logit model for a binary variable that equals 1 when farmers have positive willingness to donate and 0 otherwise, and (iv) a logit model for a binary variable that equals 1 when farmers have maximum willingness to donate (they are willing to donate regardless of the listed revenue they must forgo).

The average amount participants give up to donate €5 to ASeS is €17.13. One potential explanation for their strong willingness to donate to charity in the experiment is that they wanted to make a good impression on the experiment administrator and/or other members of the union. As mentioned in Section 2.5, the participants viewed not donating as moderately non-SR (average of 3.42 non-SR to very SR scale of 1 to 7).

Individual willingness to donate in the lab should be a marker of pro-sociality and SR. Therefore, it should be positively correlated with the other measures of SR. The results show that willingness to donate is indeed positively related to WTP for the SR gloves, which does not support the presence of moral licensing in this experiment.[10] Moreover, participants who had relatively high greenness scores and who reported producing organic products were more willing to donate than other participants. These results indicate that the outcome measures capture the underlying SR of participants. Purchase of organic inputs is negatively related to willingness to donate.

As previously discussed, group decision-making and shared decision consequences can reduce SR behavior. If prior non-SR behavior outside the lab has "created a habit" in participants and spilled over to their experiment decisions, the number of decision-makers and stakeholders of a farm could influence their individual donation decisions. The results show that the number of decision-makers for a farm is positively related to farmers' willingness to donate. One potential explanation for the positive correlation is that the lack of anonymity of actual decisions causes them to be more SR to preserve others' views of them as SR (Bénabou and Tirole 2006, 2010, Brekke et al. 2003).

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[10] Moral licensing refers to an effect in which people who initially behave in a moral way can be more likely later to display behaviors that are immoral, unethical, or otherwise problematic (Merritt et al. 2010, Blanken et al. 2015).

Table 7 Willingness to pay for the SR gloves.

	WTP		Positive WTP		Max WTP	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment variations						
Collective decision	-1.16	-0.35	1.52***	1.17***	0.01	0.09
	(1.335)	(1.454)	(0.341)	(0.197)	(0.068)	(0.102)
Collective payoff	-4.51*	-5.30***	-0.24	-0.25**	-0.25*	-0.25***
	(2.403)	(1.541)	(0.145)	(0.098)	(0.127)	(0.093)
Collective decision	-0.26	0.10	-1.52***	-1.18***	-0.01	-0.02
and payoff	(2.468)	(2.444)	(0.317)	(0.198)	(0.172)	(0.154)
Control variables						
Donation		0.25**		-0.00		0.01**
		(0.091)		(0.004)		(0.004)
Years in business		-0.19***		-0.01***		-0.00
		(0.046)		(0.003)		(0.003)
No. of employees		-0.25*		0.05*		-0.02
		(0.124)		(0.028)		(0.020)
No. of decision-makers		-0.01		0.01		-0.01
		(0.286)		(0.013)		(0.026)
Yearly revenue		0.78**		-0.01		0.08***
		(0.342)		(0.019)		(0.024)
Locally produced		-0.73		-0.06		0.06
		(2.334)		(0.088)		(0.116)
Organic product		-0.49		0.09		-0.05
		(1.897)		(0.060)		(0.094)
Buy organic		4.11*		0.04		0.21***
		(2.048)		(0.063)		(0.081)
Greenness score		0.84		0.00		0.15**
		(1.009)		(0.022)		(0.061)
Female		0.30		-0.00		-0.01
		(1.541)		(0.062)		(0.074)
Age		0.04		0.01**		-0.00
		(0.051)		(0.003)		(0.003)
Constant	15.87***	5.19				
	(1.205)	(6.359)				
Observations	123	104	125	104	125	104

Standard errors clustered at the session level are shown in parentheses. Significance levels: $*p < 0.1; **p < 0.05; ***p < 0.01$. Two participants did not report their WTP for SR gloves (*WTPSR*) and are excluded from the analysis in column 1. Since *WTPSR* in those cases is not positive and not maximum, they are included as 0 values in columns 3 and 5.

Several studies have shown that individuals who hold relatively high positions at work rely less on moral reasoning when making decisions than individuals who hold less-senior positions (Weber 1990, Treviño et al. 2006, Weber and Wasieleski 2001). Those findings suggest that experiment participants who had a greater number of years in business and/or larger farms could be less willing to donate and less SR. However, the results show no significant relationship between willingness to donate and farm revenue and years except that greater revenue decreases the probability of participants donating at least once in the experiment.

As expected, average willingness to donate, presented in Figure 5 in Appendix 10, is not significantly different across treatments. About 50% of the participants preferred making a donation to receiving a bonus of any amount and 12% switched back and forth multiple times in response to the amount of the bonus. Appendix 12 reports the results of these models when excluding the multi-switchers.

Table 8 Willingness to donate.

| | OLS Donation | Tobit Donation | Positive Donation | Max Donation |
	(1)	(2)	(3)	(4)
WTPSR	0.48**	1.21***	0.07	0.10**
	(0.184)	(0.328)	(0.081)	(0.044)
Greenness score	2.00	3.47	-0.40	0.66**
	(1.491)	(2.955)	(0.625)	(0.287)
Buy organic	-4.58**	-8.04	-0.95	-1.00
	(1.992)	(6.207)	(0.675)	(0.620)
Organic product	6.22***	20.33***	2.17*	1.09**
	(1.744)	(6.218)	(1.167)	(0.516)
Locally produced	3.52*	5.39	-0.71	0.14
	(1.915)	(5.259)	(0.912)	(0.316)
No. of decision-makers	1.51***	7.93**	1.47***	0.38**
	(0.382)	(3.577)	(0.563)	(0.150)
No. of employees	-0.24	-0.73	0.69**	-0.06**
	(0.169)	(0.622)	(0.308)	(0.029)
Years in business	0.15	0.47*	0.04	0.04
	(0.122)	(0.244)	(0.028)	(0.030)
Yearly revenue	0.04	-0.58	-0.62**	-0.13
	(0.420)	(1.584)	(0.310)	(0.096)
Female	1.08	2.82	-2.02**	-0.24
	(2.272)	(5.909)	(0.876)	(0.755)
Age	0.17	0.37	-0.01	0.04*
	(0.103)	(0.242)	(0.040)	(0.021)
Constant	-15.85		1.95	-7.95***
	(9.887)		(4.605)	(2.145)
Controls for:				
session	No	Yes	No	No
Observations	104	104	104	104

Note: Standard errors are clustered at the session level for all but the Tobit specification, in which session fixed effects are included. Significance levels: $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

5 Conclusion

This study uses a framed field experiment and farmer participants to improve understanding of producers' SR choices. It complements research on group decision-making by separating the impacts of collective decision-making and collective payoffs on SR behavior. In line with previous studies, I find that decisions made by groups are less SR than decisions made individually (Charness et al. 2007, Falk and Szech 2013, Kirchler et al. 2016, Irlenbusch and Saxler 2019). In addition, firms often face choosing between non-SR options that increase profits for their firms and shareholders and SR options, which

reduce profits. The results of this study show that collective decision-making (group majority) without communication between group members does not affect the SR of the farmers' choices even when there is no public backlash to acting "unethically." That is, collective decision-making does not trigger diffusion of responsibility in decision-makers.

This study demonstrates that decisions about collective payoffs do reduce the SR of choices and that the reduction is not driven by in-group bias or altruistic interest in payoffs for own-group members. Instead, it appears to arise from moral wiggle room in which participants assign value to both SR and their payoffs. That wiggle room allows participants to choose monetary gain for themselves while still viewing themselves as SR, showing self-serving altruism in line with Babcock and Loewenstein (1997), Gino et al. (2013a) and Shalvi et al. (2015). Indeed, when choosing for another group member, participants retained their sense of SR and did not select the more profitable non-SR option. Participants' SR decreased only when payoff was common and they also benefited monetarily from the non-SR choice.

The study findings also improve understanding of corporate SR decision-making by analyzing the behavior of actual producers making actual decisions. Earlier experiment-based studies of producer SR have been conducted with student subjects and have used artificial goods in laboratory settings. This study offers new evidence of WTP by farmers (firm leaders) for a SR product in a familiar setting.

Additional research is needed on the impacts of group decision-making on SR inside and outside the lab, but these findings provide important insights into designing organizations and institutions. Firm decision-makers can behave as if they have been relieved of the "moral" cost of non-SR behavior because it benefits shareholders. Therefore, stronger codes of conduct could be needed to limit non-SR behavior as suggested in Davidson and Stevens (2012) and Shu et al. (2012). It is important to remember that shareholders and stakeholders are increasingly turning to activism to signal their interest in greater SR by the firm. For example, Amazon Employees for Climate Justice was formed by employees concerned about the company's role in the climate crisis. They have called out the company publicly for non-SR practices despite risking being fired for representing the company without authorization (Greene 2020). Such movements eliminate any chances firms have to exploit moral wiggle room and choose non-SR actions to promote shareholder interests.

Conflict of interest

The author declares to have no conflict of interest.

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6 Recruitment material

This section provides an English translation of the study recruitment materials, which were provided to participants in Italian.

Entrepreneurial Choices

We would like to invite the producers of your association to take part in a research study funded by the **School of Economics of the University of Edinburgh***.*

1. WHAT IS THE STUDY ABOUT?

This project aims at studying the decisional mechanism of producers. The study is going to last around 45 minutes, and it is going to consist of two parts. In both parts, producers will have to make decisions with a budget we will provide. In the first part, they will make purchase choices for the association with the budget and will have the chance to earn some money. In the second part, they will decide about donating to charity or allocating a budget to themselves. We will also ask producers some questions regarding their business and the study.

2. DEVELOPMENT

To run the study, we would need a room next to where the association meeting happens, in which to reunite the producers for around 45 minutes. We would like to run the study at the beginning or at the end of your meetings, according to your availability.

The study will be done in pen and paper. We will ask each participant to make his decisions without communicating with the others, in groups of 30 employers max at a time. We will invite all the producers attending your meetings to participate and the participation will be voluntary and compensated.

3. OPEN ISSUES

3.1 Product

We would need to define the product producers will buy. Do you have any preference/advice?

The product we will offer has to have the following characteristics:

- Be useful to the productive process of the confederation (for example, ink for printers, advertisement material)
- Have an ethical component (for example, ecological or non-ecological ink, fair trade or non-fair trade coffee)

3.2 Schedule of the sessions

We aim at running the experiment in the period November 2017 – May 2018. We would like to get a sample of 150 producers. When would you be available to let us participate in your meetings?

4. CONFIDENTIALITY/ANONYMITY

We will not disclose the results of the decisions to the other participants in the study. We will store all the information we collect safely and securely and in accordance with our data protection guidelines. During the entire project duration, we will give producers an identifier (a number) that will allow us to keep **all of the data anonymous;** the data we collect will not contain any identifying information except for a file that links names to numerical identifiers (this is solely to be able to give them their compensation at the end of the session). Once a name is replaced with a number identifier, it will not be possible for anyone else to use this data to identify subjects.
All information provided to us will be anonymous and will be used only for scientific research purposes. We will share the results of the research with the consortium when the study is completed.

PhD student Martina Vecchi
School of Economics
University of Edinburgh

Prof. Dr. Michèle Belot
Department of Economics
European University Institute

Fig. 2 Letter to the directors.

Entrepreneurial Choices

*We would like to invite you to take part in a research study funded by the **School of Economics of the University of Edinburgh**. By signing this form, you agree to participate in the study. Please take the time to read the following information on this study carefully before deciding whether to take part.*

WHAT IS THE STUDY ABOUT?

This project aims to study decision mechanisms of producers. The study will last around 1 hour and it will consist of two parts. In both parts, you will have to make decisions using a budget we will provide to you. In the first part, you will have a chance to make purchase choices and earn some money. In the second part, you will decide about donating to charity or allocating the budget to yourself. We will also ask you some questions regarding your preferences, your businesses, and this study.

CONFIDENTIALITY/ANONYMITY

The results of your decisions will not be disclosed to the other participants in the study.
During the duration of the project, you will be given an identifier (a number) that will allow us to keep **all the data collected from you anonymous;** the data we collect will not contain any identifying information except for a file that links names to numerical identifiers (this is solely to be able to give you your compensation at the end of the session and send you items purchased). Once your name is replaced with a number identifier, it will not be possible for anyone else to use this data to identify you. By agreeing to take part, you agree to your anonymized data being retained by the individual researcher for analysis. We will store all the data we collect, including a digitalized version of the paper trail, safely and securely in accordance with the data protection guidelines of the University of Edinburgh. You can find more information on the website:
http://www.ed.ac.uk/information-services/about/policies-and-regulations/research-data-policy
All information you provide to us will be anonymous and will be used only for scientific research purposes. The results of the research will be shared with you and the consortium at the conclusion of the study.

Please note that participation in this study is **entirely voluntary** and given by signing the consent form attached. You are free to withdraw at any time without giving a reason. You have the right to omit or refuse to answer or respond to any question without any penalty. If you have any questions after reading this information sheet, you should ask the researcher before the study begins.

Please do not hesitate to contact us if you have any questions about the project. My contact details are as follows:

Martina Vecchi, PhD student at the University of Edinburgh, martina.vecchi@eui.eu

PhD student Martina Vecchi
School of Economics, University of Edinburgh

STUDY "ENTREPRENEURIAL CHOICES"

Please give us your email so we can send you a confirmation of the purchase/money distribution:

Email _____

Informed Consent Form

1. I confirm that I have read and understood the information sheet (as specified in
   this document header) for the above study and have had the opportunity to
   consider the information and ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at
   any time, without giving any reason.
3. I agree to take part in the study "Entrepreneurial Choices"

Date   _____   Signature   _____

Fig. 3 Informed consent for producers.

7 - Confederazione Italiana Agricoltori

The Confederazione Italiana Agricoltori (CIA) was formed in 1977 and is one of the two main unions for the agricultural sector in Italy (Confagricultura is the other), representing 900,000 farmers. CIA works to improve and enhance this important sector and to protect conditions for its members. It provides producers with information on all major policy and legislative matters that could affect the businesses of its members and offers a wide range of services. CIA also offers legal advice to ensure compliance with all tax provisions, legal help with complying with all requirements for setting up an enterprise, and advice on the best business form to adopt. It also provides business and administrative consultancy by helping producers formulate business plans and strategies and establish accounting procedures. The CIA head office is in Rome, and the union is part of the European agricultural union (Committee of Professional Agricultural Organizations, COPA) and of the World Farmers' Organization (WFO). It is organized locally in regional and provincial associations that have legal autonomy. In Tuscany, where the experiment is conducted, CIA has 18,544 affiliated farmers.

Table 9 CIA affiliates by area and age.

| | Affiliates per Age Group | | | | | |
	Less than 40	41 - 50	51 - 65	More than 65	No. of businesses	Tot. per Area
Firenze Prato	152	246	468	903	181	1950
Arezzo	195	279	784	1102	159	2519
Grosseto	326	565	1247	1564	511	4213
Livorno	80	145	323	578	62	1188
Pisa	100	129	430	696	87	1442
Pistoia	154	227	452	499	91	1423
Siena	452	478	1120	1708	386	4144
Lucca and Massa Carrara	166	233	478	760	28	1665
Total per age group	1625	2302	5302	7810	1505	18544

8 Green scale

Participants' "greenness" is determined by calculating the individuals' average scores of their responses to six questions using the GREEN score developed by Haws et al. (2014) as follows.

On a scale from 1 (strongly disagree) to 7 (strongly agree), how much do you agree with each of the following statements?

1. It is important to me that the products I use do not harm the environment.
2. I consider the potential environmental impact of my actions when making many of my decisions.
3. My purchase habits are affected by my concern for our environment.
4. I am concerned about wasting the resources of our planet.
5. I would describe myself as environmentally responsible.
6. I am willing to be inconvenienced in order to take actions that are more environmentally friendly.

9 Simple product decision model

To derive predictions, I specify a simple model based on Bartling et al. (2015). It is assumed that individuals potentially care about their own material payoffs, the payoffs to others, and the social impact of their product choices. A linear utility function is used to capture these preferences:

$$u_i = x_i + (n - 1) \cdot \alpha_i \cdot x_j - n \cdot y_i/\delta_i - n \cdot y/\gamma_i. \tag{2}$$

A monetary gain gives subject i a utility of x_i, and generating a monetary gain for a groupmate gives utility of $\alpha_i \cdot x_j$ where α_i is the degree of altruism of the individual. Subjects with $\alpha_i = 0$ do not care about their groupmates' monetary gain; subjects with $\alpha_i > 1$ care more about monetary gain when the choice affects other subjects. The number of subjects in the group receiving the payoff is given by n. Producing a negative externality of purchasing the non-SR product has a cost y_i for the individual that is multiplied by the number of subjects in the group receiving the payoff n.[11] δ_i captures diffusion of responsibility (and hence of the cost) of producing the negative externality, which depends on the number of decision-makers. If the decision-maker is a single individual $\delta_i = 1$. With more than one decision-maker, $\delta_i = 1$ only if responsibility does not diffuse. γ_i captures the in-group bias or "diffusion of guilt" when taking the non-SR action for a group; it depends on the number of people with payoff commonality. $\gamma_i = 1$ if the decision-maker chooses only her/his preference or if there is no diffusion of guilt.

Table 10 Utility of choices.

	SR gloves	Non-SR gloves + Monetary amount
I - I	0	$x_i - y_i$
C - I ind	0	$x_i - y_i/\delta_i$
C - I group	0	$\alpha_i \cdot x_j - y_i/\delta_i$
I - C	0	$x_i + (n - 1) \cdot \alpha_i \cdot x_j - n \cdot y_i/\gamma_i$
C - C	0	$x_i + (n - 1) \cdot \alpha_i \cdot x_j - n \cdot y_i/\delta_i - n \cdot y_i/\gamma_i$

Table 10 summarizes the utility in each treatment. The comparison between I - I and C - I ind, and between I - C and C - C allows me to identify whether there is a diffusion of responsibility ($\delta_i > 1$). In C - I, subjects make the product decision for a groupmate: C - I-group, where $x_i = 0$. The comparison between C - I ind and C - I group identifies altruism and in-group bias ($\alpha_i > 1$). Finally, the comparison between I - I and I - C and between C - I ind and C - C allows me to identify whether being responsible for other

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[11] n is the number of subjects receiving the payoff in the group and hence the number of non-SR products purchased when subjects opt for the payoff.

groupmates' payoffs creates the moral wiggle room to behave non-SR "in the interest of the group" ($\delta_i > 1$).

10 Non-parametric results
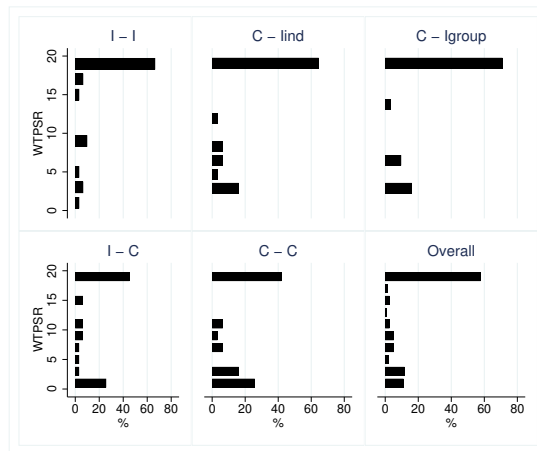
Fig. 4 Willingness to pay for social responsibility by treatment.

Density of participants with different WTP for the SR gloves by treatment.
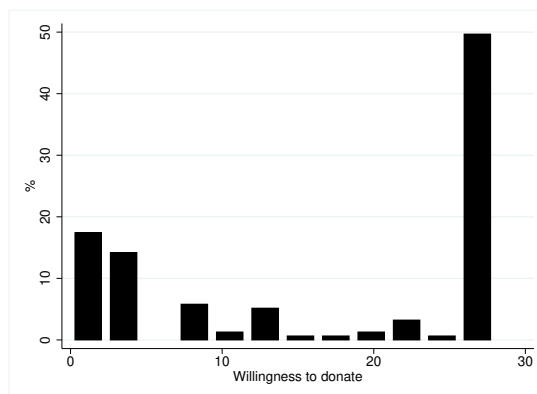
Fig. 5 Willingness to donate.

Density of participants with different willingness to donate.

11 Alternative regression models

Table 11 shows alternative models of the impact of collective decision-making and collective payoffs on the WTP for the ecological gloves (*WTPSR*). In columns 1 and 2 I estimate a Tobit model for *WTPSR*. I use a Tobit model since WTP is censored between €0 and €20 and several participants cluster at the limits. The results of the Tobit model echo the results from the OLS analysis, confirming the pattern of significance. However, considering the censored nature of the data increases the magnitude of the effect of payoff commonality on SR dramatically. In treatments with a collective payoff, participants switch to selecting the non-SR good for a bonus €13 lower than when deciding for themselves (€17 lower if I control for farm and farmer characteristics and include session fixed effects). Collective decision-making by majority does not change the *WTPSR*, or the interaction of the two treatment variations.

I also estimate the OLS model of the logarithm of (1 + WTP for the SR product) in columns 3 and 4. The results confirm that WTP for the SR product declines with a collective payoff and no change in SR when making group decisions by majority.

Table 11 Willingness to pay for the SR gloves.

	Tobit WTP		log(1+ WTP)	
	(1)	(2)	(3)	(4)
Treatment variations				
Collective decision	-3.06	2.84	-0.10	-0.02
	(5.965)	(5.768)	(0.148)	(0.146)
Collective payoff	-15.02**	-17.73***	-0.66*	-0.83***
	(6.360)	(6.249)	(0.325)	(0.241)
Collective decision & payoff	4.51	1.27	-0.09	0.00
	(8.615)	(7.947)	(0.253)	(0.267)
Control variables				
Donation		0.65***		0.03**
		(0.176)		(0.012)
Years in business		-0.48***		-0.03***
		(0.171)		(0.005)
No. of employees		-0.36		-0.03
		(0.443)		(0.016)
No. of decision-makers		-0.07		0.01
		(1.977)		(0.039)
Yearly revenue		1.93		0.08
		(1.291)		(0.055)
Locally produced		0.77		-0.17
		(4.216)		(0.334)
Organic product		-5.67		0.06
		(4.628)		(0.232)
Buy organic		6.61		0.49
		(5.034)		(0.317)
Greenness score		4.71**		0.01
		(2.270)		(0.117)
Female		-2.51		0.05
		(4.390)		(0.194)
Age		0.20		0.01
		(0.201)		(0.006)
Constant			2.65***	1.84**
			(0.115)	(0.672)
Controls for:				
Session	Yes	Yes	No	No
Observations	123	104	123	104

Note: Standard errors are clustered at the session level except for the Tobit specifications which included session fixed effects. Significance levels: $*p < 0.1, **p < 0.05, ***p < 0.01$.

12 Regression analysis excluding multi-switchers

Table 12 reports linear and Tobit-model estimates of the impact of collective decision-making and collective payoffs on WTP for the SR product. Table 13 reports linear and Tobit-model estimates of the impact of farm and farmers characteristics on willingness to donate, excluding participants switching multiple times between SR and non-SR behavior.

Table 12 Willingness to pay for the SR gloves when excluding multi-switchers.

| | OLS WTP | | Tobit WTP | |
	(1)	(2)	(3)	(4)
Treatment variations				
Collective decision	-1.72	-1.49	-5.80	-7.83
	(1.491)	(1.407)	(5.894)	(5.642)
Collective payoff	-2.97	-3.65*	-12.24*	-16.04**
	(2.449)	(1.729)	(6.668)	(6.505)
Collective decision & payoff	-1.08	-0.49	3.55	4.85
	(2.820)	(2.273)	(8.771)	(8.035)
Control variables				
Donation		0.25***		0.74***
		(0.073)		(0.161)
Years in business		-0.19***		-0.54***
		(0.058)		(0.152)
No. of employees		-0.28**		-0.30
		(0.121)		(0.364)
No. of decision-makers		-0.11		0.61
		(0.321)		(1.623)
Yearly revenue		0.92**		2.19*
		(0.307)		(1.181)
Locally produced		-3.14		-11.86***
		(2.634)		(4.411)
Organic product		0.52		-0.15
		(1.964)		(4.201)
Buy organic		5.84**		10.57**
		(2.328)		(4.827)
Greenness score		0.45		4.91**
		(1.013)		(1.993)
Female		-0.70		-9.74**
		(1.583)		(4.077)
Age		0.01		-0.01
		(0.053)		(0.190)
Constant	16.43***	10.13		
	(1.225)	(5.884)		
Controls for:				
Session	No	No	Yes	Yes
Observations	112	94	112	94

Note: Standard errors are clustered at the session level except for the Tobit specifications which includes session fixed effects. Significance levels: $*p < 0.1, **p < 0.05, ***p < 0.01$.

12.1 Checks

Before choosing between the SR and non-SR gloves, farmers were asked some control questions about the decision mechanism (whether their decision was made in a group or individually and whether the decision had consequences for the group or only the individual) and the selection mechanism (only one-third of participants selected and only one decision implemented). Table 14 reports the number of participants responding correctly to all the control questions

Table 13 Willingness to donate when excluding multi-switchers.

	OLS Donation	Tobit Donation	Positive Donation	Max Donation
	(1)	(2)	(3)	(4)
WTPSR	0.54***	1.67***	0.12	0.11**
	(0.159)	(0.390)	(0.078)	(0.045)
Greenness score	1.56	-0.68	-0.76	0.58*
	(1.455)	(3.128)	(0.895)	(0.316)
Buy organic	-6.53**	-8.47	-2.74**	-1.27**
	(2.473)	(6.174)	(1.086)	(0.555)
Organic product	6.01***	19.36***	2.11**	1.16**
	(1.827)	(6.304)	(1.022)	(0.487)
Locally produced	5.81**	12.18**	-0.24	0.44
	(2.375)	(5.327)	(1.109)	(0.375)
No. of decision-makers	1.49***	8.76**	2.80***	0.39**
	(0.354)	(3.897)	(0.977)	(0.173)
No. of employees	-0.28	-0.93	0.87**	-0.07**
	(0.198)	(0.617)	(0.399)	(0.033)
Years in business	0.19	0.61**	0.02	0.05
	(0.117)	(0.241)	(0.041)	(0.029)
Yearly revenue	0.41	0.37	-0.67**	-0.09
	(0.578)	(1.645)	(0.263)	(0.136)
Female	2.71	7.05	-2.15*	-0.15
	(2.656)	(5.862)	(1.187)	(0.783)
Age	0.16	0.47*	0.02	0.04*
	(0.098)	(0.250)	(0.039)	(0.022)
Constant	-16.12		1.49	-7.87***
	(10.389)		(6.169)	(2.414)
Controls for:				
Session	No	Yes	No	No
Observations	94	94	94	94

Note: Standard errors are clustered at the session level except for the Tobit specification which include session fixed effects. Significance levels: $*p < 0.1, **p < 0.05, ***p < 0.01$.

(Correct), the number of people responding correctly only to the questions about the decision mechanism (Correct decision mechanism), and the number of people answering non correctly to both parts (Incorrect). The decision mechanism in the C - I treatment was the most difficult for participants to understand with around 80% of participants understanding it.

In addition, the questionnaire asked farmers about the different influences on the choice between SR and non-SR gloves. They reported to be mainly influenced by the ecological quality of the gloves (mean score of 5.28 on a Likert scale of 1 = no influence at all to 7 = huge influence), followed by the SR quality of the gloves' production (score of 5.05). The actual quality of the

Table 14 Understanding of the decision-making mechanism.

		Treatment				
		I - I	I - C	C - I	C - C	Total
Correct	No. of sbj	25	23	18	27	93
	%[b]	89.29	71.88	62.07	84.38	74.00
Correct decision mechanism [a]	No. of sbj	1	6	6	3	16
	%[b]	3.57	18.75	20.69	9.38	14.67
Incorrect	No. of sbj	2	3	5	2	12
	%[b]	7.14	9.38	17.24	6.25	11.33
Total	No. of sbj	28	32	29	32	121
	%[b]	100.00	100.00	100.00	100.00	100.00

[a] Incorrect refers to their understanding of the drawing used to select participants and decision pairs to implement, not to the decision-making mechanism (individual or group payoff and decision).
[b] Percentage of farmers answering in a correct, partially correct, and incorrect way to the control questions.

gloves had the least influence (score of 4.40), and farmers reported that the possibility of earning a bonus had a very small influence on their selection (score of 2.87).

The questionnaire also asked farmers about my measures of SR: participants consider not donating and choosing the non-ecological gloves plus the monetary bonus representing non-SR behavior (mean score of around 3.5 for both behaviors on a Likert scale of 1 = not SR to 7 = very SR).

I also calculate correlation between my measures of SR behavior, WTP for the SR product and willingness to donate, and the measures of ethical behavior quantified in participants' responses in the questionnaire (i.e., greenness score, beliefs about the SR of non-donating and purchasing non-ecological gloves and ethical characteristics of the farm). Table 15 reports those estimates. WTP for SR is positively correlated to the donation decision, the greenness score, and the habit of purchasing organic products for the farm, mirroring the results of the regression analysis. Donation is correlated to the greenness score and to producing organic and local products. All these measures support a common measure of SR.

Table 15 Correlation between variables.

	WTP SR	WT donate	Greenness score	SR of non-SR[a]	SR of non-donate [b]	Locally produced	Organic product	Buy organic
WTP SR	1							
WT donate	0.419***	1						
Greenness score	0.289***	0.292 ***	1					
SR of non-SR	-0.191*	0.0453	0.0837	1				
SR of non-donate	0.105	0.0693	0.0238	0.428***	1			
Locally produced	0.126	0.175*	0.0715	-0.106	-0.160	1		
Organic product	0.123	0.288***	0.181*	-0.122	-0.0620	0.305***		
Buy organic	0.208**	0.0974	0.297***	-0.0229	0.0261	0.408***	0.351***	1
Others' SR [c]	0.0501	0.144	-0.0394	0.220**	0.200*	0.0768	0.0909	-0.0292

A Pearson's coefficient of $0.1 < r < 0.3$ indicates small correlation, $0.3 < r < 0.5$ indicates medium correlation and $r > 0.5$ indicates strong correlation. Significance levels: $*p < 0.05$, $**p < 0.01$, $***p < 0.001$. [a] SR of non-SR gloves refers to whether farmers reported considering selecting the non-ecological gloves as non-SR behavior. [b] SR of non-donate refers to whether farmers reported considering not donating to ASeS as non-SR behavior. [c] Others' SR refers to whether farmers reported considering other farmers to be more (+1), less (-1), or equally (0) SR as they are.