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Natural or organic? How framing impacts choices of sustainable food and wine products

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Abstract

Purpose – The paper investigates the choice preferences of Gen Z individuals between products labelled as "organic" versus products labelled as "natural". While the former category guarantees production standards set by EU legislation, no codified standard exists for natural products. Understanding whether consumers value the difference is important for policy and marketing reasons.

Design/methodology/approach – The paper uses a between-subject laboratory experiment. Participants are undergraduate students from a medium-sized university, randomized into two conditions. In both conditions, individuals choose between a conventional product and a sustainable one. In the first condition, we frame the organic product as "organic". In the second condition, we frame the same organic product as "natural". We always refer to the conventional product as "conventional". This methodology is applied to a choice regarding wine and a choice regarding food. Choices are incentive-compatible, as one participant is randomly selected in each session to receive the chosen product.

Findings – We find no significant difference between the frequency of choices of the product framed as organic and the one framed as natural, neither for wine nor for food.

Originality/value – The paper tests in a controlled and incentivized laboratory experiment the choice differences regarding products framed as organic versus products framed as natural. The results provide policymakers and marketers with a better understanding of the effects of sustainability labelling on consumer behaviour. The policy implications of our results, which we discuss in the paper, are relevant and multifaceted.

Keywords Natural products, Organic food, Wine, Food, Experiment

Paper type Research paper

1. Introduction

Environmentally sustainable production has become a central issue for the agricultural sector. Producers, policymakers and consumers are all moving towards the goal of reducing the impact of food production, distribution and consumption on the environment.

In the recent past, numerous companies operating in the agri-food industry have embedded at least some basic principles of environmental sustainability into their practices and business models (Migliore *et al.*, 2015; Giacomarra *et al.*, 2016). These practices may be certified by third parties, either private or public, and there is indeed a very large number of certifications and quality regimes, such as, for example, organic and biodynamic agriculture. On the other hand, policymakers are specifically addressing the issue of organic farming as one of the most important objectives in their political and normative agenda. As stated by the Organic Action Plan of the European Commission (2022): "By producing high quality food with low environmental impact, organic farming will play an essential role in developing a

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sustainable food system for the EU". A sustainable food system is at the heart of the European Green Deal. Under the Green Deal's Farm to Fork strategy, the European Commission has set a target of "at least 25% of the EU's agricultural land under organic farming and a significant increase in organic aquaculture by 2030".

A key ingredient to the success of such policy interventions is consumer demand and consumers' perception of sustainability. For this reason, consumer awareness and responsibilities have become increasingly debated during the past decades (e.g. Dieterle, 2022). However, consumers are currently facing a complex communication scenario. In fact, as mentioned above, companies have been communicating environmental sustainability in many ways using different framings and different visual labelling patterns. If we consider only organic products in the European Union, for example, several different organic labelling schemes do exist (Jannsen and Hamm, 2012; Majer *et al.*, 2022). Furthermore, in recent years there has been a proliferation of other categorizations such as biodynamic, sustainable and "natural". While some of these categorizations, such as, for example, biodynamic agriculture [1] correspond to underlying principles, other labels are vaguer and lead the way to the possibility of "greenwashing".

In this paper, we investigate whether Italian Gen-Z consumers show different preferences towards sustainable products depending on whether these are framed as "organic" or "natural". While the term "organic" corresponds to legally binding requirements on the production process, the word "natural" does not follow specific legal or pre-defined principles. The notion of "natural" has nonetheless become one of the leading label claims on new food products launched to satisfy new consumer demands and market niches (Roman *et al.*, 2017; Hemmerling *et al.*, 2016). Yet, a universally accepted definition of food naturalness does not exist, and thus, the naturalness of a food product is still a rather vague concept (Roman *et al.*, 2017; Rozin, 2006). However, the natural wine category actually aggregated a strongly engaged community, showing precise traits described by Alonso González and Parga-Dans (2020), while in the food area we do not observe such social phenomena. This may increase or decrease the perceived discrepancy between natural and organic products in the wine domain compared to the food domain.

We choose to focus on the youngest generation of consumers because they are the preferred target both of producers and policymakers. Thach *et al.* (2021) underline the relevance of Gen Z for wine consumption; they represent a very large population of consumers, comprising 32% of the world population, and already represent more than $143bn in buying power. They are expected to have a huge impact on consumer products on a global basis. As reported by McKinsey (2018), with soaring global connectivity, generational shifts could come to play a more important role in setting behaviour than socioeconomic differences do. Young people have become a potent influence on people of all ages and incomes, as well as on the way those people consume and relate to brands. Most of the research considered only Gen X and Y, for which it has been demonstrated that individuals' age and period are relevant factors in the consumption decision (Rodríguez-Donate *et al.*, 2021). Moreover, Gen Zers exhibit peculiar approaches to decision-making and shopping habits in terms of value consciousness, status consumption, need for uniqueness and social outcomes (Goldring and Azab, 2021; Thangavel *et al.*, 2022). Finally, Gen Z consumers are one important driver of sustainable consumption, and one may expect that their knowledge of the differences between "organic" and "natural" will lead to a difference in consumption of the two types of products.

Our research question is crucial because labelling a product as "organic" for producers means bearing more costs in terms of production and transformation, complying with a relevant number of constraints and quality controls. On the other hand, promoting a product as "natural" simply requires self-declaration. From a theoretical point of view, our setting can be thought of as an application of costly signalling theory (Spence, 1974). Assume for

simplicity that there are two types of firms which are either sustainable or not. In the case where only non-costly signals are possible, in any equilibrium consumers will consider any sustainability claim from firms as cheap talk (Crawford and Sobel, 1982). However, if a costly signal is introduced (i.e. the organic label), the firms that are truly sustainable will acquire the costly signal and the others will not. In such separating equilibrium, consumers should then give credibility only to costly signals such as the "organic" claim and discard non-costly ones such as the "natural" description. Our experiment aims to shed light on whether this is indeed the case.

To compare choices between natural and organic products, one could simply analyse purchasing data and relate it to whether companies present their products more as natural or organic. However, daily food choices are taken in multifaceted contexts, combining different venues, occasions and situations, and people have heterogeneous sets of personal characteristics, knowledge, beliefs, perceptions, attitudes and motivations (e.g. Gorton and Barjolle, 2013). To control for all these possible confounding factors, we employ a laboratory experiment. Our approach allows us to observe the choice situation that consumers generally face in real life, controlling for all possible confounds. In particular, we rely on a between-subjects discrete choice experiment.

Participants in our experiment face a choice between two bottles of wine, one conventional and one sustainable. Our main exogenous manipulation regards how we frame the sustainable choice. In the treatment ORG, on top of the image of the sustainable wine there is written "This is an organic wine", while on top of the image of the conventional wine there is written "This is a conventional wine". In the treatment NAT, everything is the same as in the treatment ORG except that on top of the organic wine there is written "This is a natural wine". The same choice was proposed between two jars of tomato sauce, once again one conventional and one sustainable. Although other value elicitation methods can be used in our experimental setting, such as WTP elicited through multiple price lists (Asioli *et al.*, 2021), experimental auctions (Canavari *et al.*, 2019) or open-ended choice experiments (Corrigan *et al.*, 2009), we focus on a discrete choice experiment as it provides a choice setting simulating the decision-making process that consumers generally face in real-life contexts. At the end of the experimental phase, we elicit socio-demographic and psychometric variables to investigate the determinants of sustainable choices.

We do not directly compare a product framed as organic and a product framed as natural, as in such a design, we would necessarily present participants with two different products. Had we done that, any difference in the label, description or shape of the product could influence participants' choices and add confounding factors to our identification. Instead, we rely on a between-subject design in which both groups of participants choose between the very same two products, and the only difference is how we frame the sustainable product. For the sustainable product, we not only chose two products which are marketed by producers as "natural" but also have the "organic" EU label so that we avoid deception in our experiment (Charness *et al.*, 2022).

Our results show that the majority of our participants choose the sustainable product. Furthermore, we find no significant differences between the frequency of choices of the product framed as organic and the one framed as natural, neither considering wine nor considering food. We also find that people are overall more willing to make a sustainable choice for the tomato sauce rather than for the bottle of wine. As we expect trust to be a mediator of the natural product choice, we investigate whether high-trusting individuals would choose the natural product more than low-trusting individuals. While we confirm that high-trusting individuals choose sustainable products more than low-trusting ones, this does not happen differentially between organic and natural wine. We conclude that participants are not likely to choose more frequently products framed as organic than products framed as natural.

This evidence contributes to the existing literature in different ways. First of all, it contributes to the debate on how perceptions mediated by labels and descriptions affect food and wine consumption choices. Since food production methods are not observable and cannot be objectively verified or experienced by consumers (Darby and Karni, 1973), consumers must rely on information provided by producers (either guaranteed by policymakers or not) and are guided by the perception of benefits of one technique over another (Massey *et al.*, 2018), provided they deem the source of the information truthful and trustworthy (Van Loo *et al.*, 2020; Vecchio *et al.*, 2021; Asif *et al.*, 2018). It has been demonstrated that consumers are willing to pay a premium if a good has characteristics of sustainable production (Schäufele and Hamm, 2017; Sellers-Rubio and Nicolau-Gonzalbez, 2016; Vriezen *et al.*, 2023). Willingness to pay and perceptions of different visuals regarding traceability and sustainable products have been investigated in several studies (Jannsen and Hamm, 2012; Galati *et al.*, 2019; Majer *et al.*, 2022; Cook *et al.*, 2023; Sonntag *et al.*, 2023; Piracci *et al.*, 2024). Our study is novel for two main reasons: first, we use real choices, which alleviates hypothetical bias concerns present in most of the extant literature (Broeck *et al.*, 2022); second, by using our experimental manipulation, participants in the two treatment groups are facing exactly the same decision, and no other factors except the natural or organic message framing can affect their choices. This improves the causal identification, eliminating all the confounds that different labels can introduce, such as differences in label design and other information.

Second, it contributes to the literature how consumers process information based on how information is framed. Framing and its effects on decisions and persuasion is at the core of consumer choice since the seminal works of Tversky and Kahneman (1981), which demonstrated that seemingly inconsequential changes in the formulation of choice problems caused significant shifts of preference. Many studies have been published on the link between framing and environmental sustainability (Florence *et al.*, 2022). Since the importance of food choices has been widely recognized not only at an individual level in terms of health status, overall well-being, etc. but also from a social and environmental standpoint (e.g. Reisch *et al.*, 2013), framing effects were already studied with reference to conventional and genetically modified food products (Heiman and Zilberman, 2011). Moreover, it has been demonstrated that framing product options and features can influence consumer choices based on the loss aversion principle. However, in the first case the manipulation took place on an information level, framing the statements (positive/negative) about the nature of events or qualities of products – where health and environmental effects are uncertain – and thus affecting judgement and choices. In the second case, consumers' attention is focused on additional product features and their relative desirability. In our case, framing is directly linked to the presentation of the product itself, without any value judgement. It is also worth noting that, different from standard framing effects, our framing manipulation is not completely inconsequential. Describing a product as organic signals a certain standard of production and transformation, while describing it as natural does not. In this sense, our framing manipulation conveys different information to participants, which should affect decision-making also in terms of a standard rational point of view.

Finally, our results have important policy implications. First of all, policymakers need to be aware that they are putting relevant efforts into communicating organic schemes, but consumers currently do not recognize the difference between organic and natural products or, if they do, they do not perceive official certifications as benefits, even when price considerations are not an issue. This is probably linked also to the different visual labelling available in different countries that may be misleading and counterproductive in promoting a unique protocol. Furthermore, this evidence calls for more regulation of the "natural" regime, starting from a clear definition of what natural is. Second, this evidence explains why producers are using the natural framework to communicate their products. This option has

indeed less costs of compliance, is not verifiable, processes can be adjusted according to the variability of vintages and harvests, and nonetheless targets the same audience that can be willing to pay a premium for organic agricultural products.

In summary, the main contribution of the paper is to deepen the knowledge on the influence of product framing on food and wine consumption, using incentivized choices in a controlled environment.

2. Hypotheses

To outline our hypotheses, we proceed with the assumption that if consumers are rational, they would know that the organic label carries more precise and reliable information on the product, and if their interest is to make sustainable choices, they should prefer the organic label to the conventional one. In contrast, the natural label is less reliable. First, it is not clear what natural means in terms of production processes and sustainability. Second, even if people equate the word natural with organic, concerns arise in terms of the truthfulness of the claim, as producers can be simply adopting green washing techniques. This leads us to our first hypothesis:

H1. Participants choose the sustainable choice more frequently in the ORG treatment compared to the NAT treatment both for wine and food products.

Next, we move to the comparison between the two types of products, wine and tomato sauce. As anticipated in the introduction the rationale for having these two treatments is that the word "natural" has been used much more in the context of wine than in the context of other products. Given that in the last years the interest in the niche of natural wines has constantly increased, it is foreseeable that consumers will be less able to distinguish the difference between the natural label and the organic label in the wine context compared to the sauce context. This leads us to our second hypothesis:

H2. The predicted difference between organic and natural products is lower in the case of wine compared to the case of tomato sauce.

Our third hypothesis regards the number of overall sustainable choices between the two products. As literature concerning wine consumption behaviour suggests that buying preferences and consumption of wine and beer are similar to those of food (see, e.g. Lockshin and Corsi, 2012), our third hypothesis is as follows:

H3. There is no difference in the fraction of sustainable choices between the wine and the sauce decisions.

The three hypotheses are clearly related to our main research area, that is, how product framing influences food and wine consumption.

3. Methods

To verify our hypotheses, we employ an experimental investigation conducted in the laboratory. Participants are undergraduate and master students enrolled at university and signed up to ORSEE (Greiner, 2015), a recruitment database frequently used in experimental economics. Upon arriving at the laboratory, participants are invited to sit in cubicles, which ensure privacy and anonymity of decisions. An experimenter read aloud the instructions for the experiment. The experiment is composed of three parts. In Part 1, participants are presented with a task unrelated to the current paper. All participants went through the same exact task in part one.

In Part 2, we introduce our main treatment variation. The objective of the experiment is to compare the choice between products described as "organic" and products described as "natural". One way to do this could be to present participants with a product labelled as organic versus another one labelled as natural. As our experiment is not hypothetical (i.e. some participants will eventually receive the product), we would need to present participants with two real products which are identical except for the label. In this way, we can assess in an unbiased way whether natural or organic is preferred by participants. However, finding two real products that are identical except for the frame is clearly impossible. Using the same product is also not feasible, as participants will realize that it is the same product. Hence, our identification strategy relies on a between-subjects design composed of two treatments.

In both treatments, participants are presented with two bottles of wine, both are "Barbera d'Asti Superiore". The first one ("Ricossa" -www.ricossa.wine/vini/ricossa-riserve-barbera-d%27asti-superiore-docg) is a conventional wine, while the second one ("Cascina Vengore" – http://www.cascinavengore.it/Vini/Barbera-Superiore-Mompirone.aspx) is an organic wine. Participants are presented with a front image of the two bottles and are asked to choose the one they prefer. In the treatment ORG, on top of the image of the organic wine there is written "This is an organic wine", while on top of the image of the conventional wine there is written "This is a conventional wine". In the treatment NAT, everything is the same as in the treatment ORG except that on top of the organic wine there is written "This is a natural wine". From the images alone, participants cannot tell whether one or both wines were organic, natural or conventional. Participants are asked to choose among the two products. Participants know that at the end of the experiment, one participant in the session is going to be selected at random, and their choice will be implemented. Selected participants were notified and asked to stay until everybody had left the lab. At the end of the session, one experimenter went to their cubicle and was asked to fill out a form with the product they had chosen, their name and surname and their home address. The product was then shipped to their homes. The advantage of using this design is that participants in the two treatment groups are facing exactly the same decision, and no other factor except the natural or organic labelling can affect their choices.

In Part 3, individuals went through an additional choice between two products, that is, two tomato sauces. As in the previous part, participants were confronted with one conventional product (www.pastarmando.it/box/la-passata-di-datterini) and one organic product (https://www.masseriaroberti.it/conserve-vegetali/14-34-passata-di-pomodoro-datterino.html#/13-conserve_vegetali-bottiglia_da_330g). As before in the treatment ORG, on top of the image of the organic sauce there is written "This is an organic sauce", while on top of the image of the conventional sauce there is written "This is a conventional sauce". In the treatment NAT, everything is the same as in the treatment ORG except that on top of the organic sauce there is written "This is a natural sauce". Participants are asked to choose among the two products. Also, in this case, one participant is selected at random and asked to wait until the end of the experiment to report their address, name and product chosen. The product is then shipped to their home.

Importantly, participants are aware that they will write the address on an excel sheet separated from the dataset, and because in the dataset subjects are only identified by their subject number and not by their name or cabin number, we cannot trace back the identity of the participant and their choices. This preserves anonymity for all choices.

After Part 3, participants fill a brief socio-demographic questionnaire including self-reported willingness to trust strangers, self-reported willingness to take risks (Dohmen *et al.*, 2011) and a 10-item version of the Big 5 personality inventory (Gosling *et al.*, 2003). Afterwards, participants are privately paid at their cubicles. They receive a show-up fee of 5€ plus an additional 5€ if one randomly selected price guess from Part 1 is correct plus one or both products they have chosen in case they are selected. In no session, it happened that

the same subject was selected to receive both products. The experiment was conducted at the VELE laboratory at the University of Verona. The experiment lasted on average 20 min, and participants earned on average 5.8€, which amounts to an hourly compensation of 17.4€. We had a total sample of $n = 209$ participants whose average age was 22.1 and was composed by 68% of females.

Our design allows us to test our three hypotheses outlined in section 2. For the first hypothesis, we will compare the frequency of sustainable choices between the ORG and NAT treatments. For the second hypothesis, we will compare the difference between the two treatments between the wine dimension and the food dimension, implementing a difference in differences analysis. Finally, we will test the third hypothesis by comparing the frequency of sustainable choices between the wine and food dimensions.

4. Results

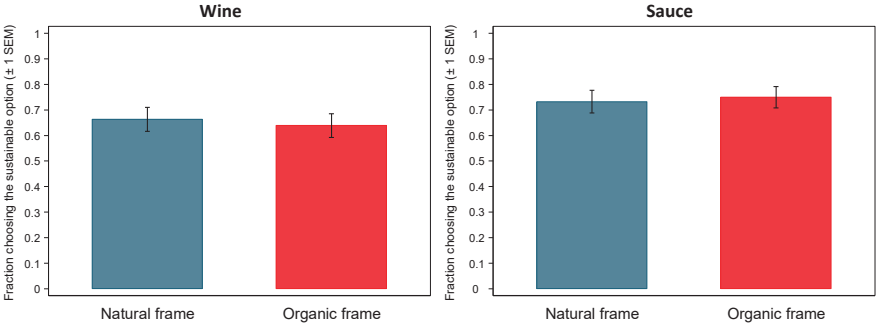
Figure 1 displays the fraction of sustainable choices in our treatments. The left panel shows the results for wine and the right panel for tomato sauce.

As it is clear from the picture, we find no difference across the two frames. With respect to wine, 66.3% of our participants make the sustainable choice in the Natural frame and 63.9% makes the sustainable choice in the Organic frame. This percentage is not significantly different across the two treatments (Pearson's $\chi^2(1) = 0.138, p = 0.711$). Despite the fact that the level of sustainable choices is higher in the case of sauce, in this case we also find no difference in the percentage of sustainable choices across the Organic and Natural frames. In particular, we find that 73.3% of our participants choose the sustainable product when it is labelled Natural and 75% choose it when it is labelled Organic (Pearson's $\chi^2(1) = 0.082$, $p = 0.775$). These results lead us to reject our first two hypotheses and lead to our first result:

Result 1. We find no significant difference in the choice of products between the ORG and the NAT treatments.

Next, it is instructive to compare the rate of sustainable choices across the two products. To do this, we pool the data from the two treatments. We find that our participants make a sustainable choice 74% of the time when choosing between two tomato sauces versus 65% when choosing a bottle of wine. This difference is significant at the 5% level (74% vs 65%, Wilcoxon matched pairs, $p = 0.033$). This leads to our second result:

Result 2. People choose more frequently a sustainable option when choosing among two tomato sauces than two bottles of wine.



Note(s): Left panel shows percentages for wine and right panel for sauce
Source(s): Authors' own work

Figure 1. Proportion of sustainable choices in the natural and in the organic frame

Finally, we ascertain whether choices across the two settings are correlated. Are people who make a sustainable choice in the realm of wine more likely to make a sustainable choice in the realm of food? A Spearman correlation coefficient shows that the correlation between the two choices is low and only marginally significant (Spearman's rho = 0.12, $p = 0.089$).

Next, we conduct an exploratory exercise using trust as elicited in our post-experimental questionnaire. Our hypothesis 1 is that people should choose more frequently the option labelled organic than the one labelled natural, as the former brings more guarantees that the product is effectively sustainable from an environmental point of view. In contrast, the word natural has little meaning and can be used to greenwash consumers. One possible mediator of the choice between the sustainable and conventional product could be trust, as highly trusting individuals may be gullible and might not see the risk of green washing that the "natural" label carries along. To investigate this, we use a question that asks how much one can trust people on a scale from 1 to 10. We generate a dummy variable HI_TRUST that takes value 1 if the response to the trust question is above the median response in the sample.

Using this variable, in Table 1, we report an OLS regression analysis where we use the choice of wine (Model 1) and the choice of sauce (Model 2) as dependent variables. As explanatory variables, we use a dummy ORG, which takes value 1 if the observations come from the organic treatment, the HIGH_TRUST dummy and an interaction term between these two dummies.

Model 1 indicates that high-trusting people are more likely to make a sustainable choice than non-trusting people, as indicated by the significant coefficient on the HI_TRUST dummy. The sign of the interaction term goes in the right direction, indicating that this happens more in the natural frame compared to the organic frame. Yet, the interaction term is not significant. When moving to the choice of the sauce, moreover, we do find the same patterns with respect to the signs of the coefficients, but none of them is significant. We conclude that trust is unlikely to be a mediator of the choices in the natural and organic frames. All results are robust to the use of a probit model instead of OLS (see Table A1 in the Online Appendix).

As a final step, we assess the correlates of sustainable choices at the individual level. Using the two choices for wine and tomato sauce, we construct an index as the average of the two choices. Hence, the index takes value 1 if an individual makes two sustainable choices, 0.5 if they make 1 sustainable choice, and 0 otherwise. Using this index as a dependent variable, we run an OLS regression using personal characteristics elicited in the post-experimental questionnaire as independent variables. Results are reported in Table 2.

	(1) Wine	(2) Sauce
ORG	0.035	0.022
	(0.087)	(0.081)
HI_TRUST	0.234**	0.031
	(0.095)	(0.089)
ORG × HI_TRUST	−0.135	−0.012
	(0.132)	(0.123)
Constant	0.561***	0.719***
	(0.063)	(0.059)
N	209	209
R^2	0.021	0.001

Table 1.
The influence of trust in the choice of sustainable products

Note(s): OLS regressions. Dependent variable: = 1 if choice is natural/organic, = 0 otherwise. Standard errors in parenthesis, *$p < 0.1$, **$p < 0.05$ and ***$p < 0.01$
Source(s): Authors' own work

	Sustainability index
Age	−0.014**
	(0.007)
Female	0.136**
	(0.054)
Trust	0.025***
	(0.009)
Risk	−0.006
	(0.012)
Extraversion	−0.020
	(0.015)
Agreeableness	−0.014
	(0.023)
Conscientiousness	0.012
	(0.022)
Neuroticism	0.008
	(0.019)
Openness to experiences	0.001
	(0.022)
Constant	0.905***
	(0.256)
N	209
R^2	0.102

Note(s): OLS regressions. Dependent variable: = 1 if both choices are sustainable, = 0.5 if one choice is sustainable, 0 otherwise. Standard errors in parenthesis, *$p < 0.1$, **$p < 0.05$ and ***$p < 0.01$
Source(s): Authors' own work

Table 2. Correlates of sustainable decisions

Our results show that age has a negative relation with sustainable choices. The younger our participants, the more sustainable their choices. Moreover, female participants are significantly more likely to make sustainable choices. Finally, as already noted in Table 1, individuals who self-report higher trust are more likely to make sustainable choices. Neither self-reported willingness to take risks nor personality traits according to the Big 5 inventory are a significant predictor of sustainable choices. All results are robust to the use of an ordered probit model instead of OLS (see Table A2 in the Online Appendix).

5. Summary and conclusion

In this paper, we have investigated whether individuals are more likely to engage in sustainable consumption when products are described as organic versus natural. We have employed a laboratory experiment in which subjects were exposed to the choice between a conventional and a sustainable product. While in both our conditions the conventional product was described as conventional, the two conditions differed in the description of the sustainable product. In one between-subject condition, the sustainable product was described as "natural", while in the other condition it was described as organic. We have used a bottle of wine and a tomato juice jar as products to investigate our research question both in the segments of wine and food.

Our findings reveal that the fraction of sustainable choices is statistically indistinguishable between the natural and the organic frames. This has important implications for policymakers. As long as natural and organic are perceived similarly by consumers, it will be difficult to shift a large amount of the production to organic standards, as firms will more cheaply prefer to label their product as natural, still reaping the premium

that consumers are willing to pay for sustainable products. From a policy perspective, our results have two main implications. First, more effort should be devoted to raising awareness on what organic agriculture means and what the guarantees of having an institutional body which guarantees the environmental sustainability of production processes are. Second, it would be important to create a shared understanding and potentially create standards and certifications for "natural" products.

One limitation and a question left for future research regards the interpretation of our findings. According to different interpretations, different policy responses would be suitable. Under the first interpretation, people may be unaware of the difference between the terms organic and natural. In this case, a stronger emphasis on communicating the exact differences and what organic really means seems the best policy. It's advisable to realize institutional communications campaigns that clarify protocols, standards and guarantee for consumers, with a rationalization and harmonization of the various organic labelling schemes, avoiding the proliferation of disparate regional schemes and third-party certifications. In fact, different sustainability labelling schemes are associated with considerable differences in consumer perceptions and behaviour (Majer *et al.*, 2022; Nie *et al.*, 2022).

Under a second interpretation, people may be aware of the difference between organic and natural, but trust companies' claims as much as independent third-party certifications, despite companies have clear conflicts of interest. Evidence from different contexts suggests that people are in fact naïve in recognising conflicts of interest (Loewenstein *et al.*, 2011). In this case, one could envisage an explicit declaration of conflict of interest or an explicit mention that the word "natural" does not respond to any legal standard. Alternatively, policymakers could try to create standards, protocols and a clear certification scheme for natural products. On the other hand, producers who choose not to adhere to organic protocols, preferring to adopt stricter production processes and farming techniques, can emphasize the differences by reporting additional information on the back labels and technical factsheets. Alternatively, they can engage in lobbying activities aimed at making organic requirements more adherent to their current practices and at reducing red tape in control processes.

Finally, one additional interpretation could be that consumers are willing to consume sustainable products for image reasons, that is, either because they like to see themselves as good people (self-image) or because they want to be seen by others as good people (social image). In this case, whether the product is actually sustainable may not matter, as in the comparison between the sustainable product and the conventional one, they signal to themselves or to others their ethics and morality by choosing the more sustainable product. Also in this case, the best policy would be to regulate more strongly "natural" products to guarantee that consumers are effectively consuming more sustainable products. In order to facilitate the interpretation of our findings, future research is needed to assess the theoretical underpinnings of consumer choice towards sustainable products, in particular the presence of a mediating effect explaining the results. In light of the interpretations above, future research could try to elicit mediators for each of the interpretations, such as, for example, perceptions of sustainability related to each claim, trust towards companies' claims or self-image perceptions after choice.

An additional limitation of our study is the use of a lab experiment. Although laboratory experiments are now a standard mean of scientific discovery (Falk and Heckman, 2009), one potential limitation is that they may lack external validity both for the use of student samples (Levitt and List, 2007), which in our case is an advantage as we study Gen Z consumers or for the setup of the decision-making environment, which abstracts away from real-world consumer decision-making environments. In the latter respect, future research should try to assess whether our results extend to more natural settings.

Notes

1. https://demeter.net/wp-content/uploads/2022/05/220414_DEM_INT_brochure_A5_Web.pdf

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Supplementary material

In this appendix, we report robustness models for Table 1 and Table 2 using instead of OLS models a probit and an ordered probit model, respectively.

Table A1.
The influence of trust in the choice of sustainable products

	(1) Wine	(2) Sauce
ORG	0.090	0.069
	(0.231)	(0.246)
HI_TRUST	0.671**	0.093
	(0.271)	(0.270)
ORG × HI_TRUST	−0.404	−0.034
	(0.370)	(0.380)
Constant	0.155	0.581***
	(0.167)	(0.177)
N	209	209
Pseudo-R^2	0.028	0.001

Note(s): Probit regressions. Dependent variable: = 1 if choice is natural/organic, = 0 otherwise. Standard errors in parenthesis, *$p < 0.1$, **$p < 0.05$ and ***$p < 0.01$
Source(s): Authors' own work

Table A2.
Correlates of sustainable decisions

	Sustainability index
Age	−0.050**
	(0.023)
Female	0.462**
	(0.186)
Trust	0.097***
	(0.034)
Risk	−0.025
	(0.547)
Extraversion	−0.072
	(0.181)
Agreeableness	−0.053
	(0.507)
Conscientiousness	0.053
	(0.076)
Neuroticism	0.031
	(0.066)
Openness to experiences	0.004
	(0.080)
/cut1	−1.971
	(0.894)
/cut2	−0.704
	(0.887)
N	209
Pseudo-R^2	0.057

Note(s): Ordered Probit regression. Dependent variable: = 1 if both choices are sustainable, = 0.5 if one choice is sustainable, 0 otherwise. Standard errors in parenthesis, *$p < 0.1$, **$p < 0.05$ and ***$p < 0.01$
Source(s): Authors' own work

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