

## Annexe

# Methodology of the organic logo experiment

### Design of the experiment

I&O Research has carried out an experimental vignette study for the Netherlands Court of Audit. The methodology used is not included in the report published on consumer confidence in the EU organic logo but is explained in this annexe.

The question at the heart of the vignette study was, 'To what extent does information on production standards influence the respondents' preference for organic products?'

Respondents were first divided randomly into two groups: a control group and a treatment group (the 'informed group'). They were then asked to choose one of two similar products.

The respondents in the control group were asked to choose between an organic product and a non-organic product. Each product (both organic and non-organic) had a high price and a low price based on the prices charged by Dutch supermarkets. Which price the respondents saw was determined at random.

The respondents in the informed group also saw a third property for each product: the production standards that the organic and non-organic products had to meet. The text blocks on the following pages show the choices offered to the respondents. The respondents saw only one price for each product. Only people in the informed group saw the information at the bottom of each text block.

Tomatoes	Tomatoes
Five vine tomatoes	Five vine tomatoes
€ 1.69 (or € 1.99)	€ 2.19 (or € 2.29)
Non-organic	Organic
<b>The informed group was told:</b> Produced using chemical pesticides, genetic modification and artificial fertiliser.	<b>The informed group was told:</b> Produced without using chemical pesticides and genetic modification. Natural fertiliser was used.

Chicken breast	Chicken breast
Chicken breast, 300 g	Chicken breast, 300 g
€ 2.85 (or €3.50)	€ 7.88 (or € 8.40)
Non-organic	Organic
<b>The informed group was told:</b> Free range is not compulsory. Daylight is also not compulsory. On average, 18 hens per square metre.	<b>The informed group was told:</b> Hens have to be outdoors at least eight hours a day, with at least 4 m <sup>2</sup> of space per hen. There has to be sufficient daylight in the henhouses. No more than 10 hens per square metre in the henhouses.

Milk	Milk
Semi-skimmed milk, 1 litre	Semi-skimmed milk, 1 litre
€ 0.85 (or € 1.05)	€ 0.99 (or € 1.09)
Non-organic	Organic
<b>The informed group was told:</b> No requirements on the cows' freedom of movement. Not compulsory for cows to graze outdoors.	<b>The informed group was told:</b> Cows are free to go outdoors (weather permitting). At least 4.5 m <sup>2</sup> of outdoor space per cow and at least 6 m <sup>2</sup> of indoor space per cow.

Tea	Tea
Earl grey tea, 20 bags	Earl grey tea, 20 bags
€ 0.58 (or € 0.65)	€ 0.95 (or € 2.15)
Non-organic	Organic
<b>The informed group was told:</b> Produced using chemical pesticides, genetic modification and artificial fertiliser.	<b>The informed group was told:</b> Produced without using chemical pesticides and genetic modification. Natural fertiliser was used.

This produced eight groups per product (see table 4) based on whether the respondents were informed or not, the non-organic product's price and the organic product's price. We divided a sufficiently large number of people over the eight groups to be certain that the groups did not systematically differ from each other (the original preferences for organic or non-organic products would be *approximately* the same in each group). This random allocation enabled us to ascribe difference in the answers to differences in the information and prices.

**Table 1** Allocation of respondents to eight groups

Non-organic price	Organic price Control		Organic price Informed	
	Low	High	Low	High
Low	12.5%	12.5%	12.5%	12.5%
High	12.5%	12.5%	12.5%	12.5%

NB Percentages are approximate

To generalise our findings and relate them to a situation in a supermarket and different types of organic products, we took the following safeguards:

- The prices were realistic.
- We asked the respondents whether they usually bought organic or non-organic products and to think about how much they had to spend.
- We asked the respondents which type of product they would never buy.
- The experiment used a wide range of food products: tomatoes, chicken, milk and tea.
- We draw no conclusions on the respondents' buying behaviour based on their choices, only on the respondents' preferences.

### **Data collection**

The survey was based on a disproportionate stratified sample of 1,817 members of the I&O panel (ISO 26.362 certified). 913 (50%) respondents actually completed the questionnaire. Their answers were subsequently weighted using Statistics Netherlands' Gold Standard.<sup>i</sup> A full description of the sample, the checks of the questionnaire and the weighting is available in the consumer survey report issued by I&O Research (2020), in which the same method was used.

### **Analysis**

The preferences were analysed by means of logistic regression analysis. This statistical method analyses the relationship between one or more independent variables and a dependent variable (known as a dummy variable) that has two possible values.

The dependent variable in our analysis was the respondents' choice, coded as the dummy variable. The respondents chose either the organic product or the non-organic product. Respondents who said they never bought a particular product were left out of the analysis. The independent variable was whether a respondent was part of the control group or the informed group (also a dummy variable).

### **Results**

The experiment found that information on the production standards for organic and non-organic products:

- increased the percentage of consumers preferring organic tomatoes from 30% to 57%;
- increased the percentage of consumers preferring organic chicken from 17% to 27%;
- increased the percentage of consumers preferring organic milk from 58% to 70%;
- increased the percentage of consumers preferring organic tea from 28% to 44%.

We can conclude from this that the production information had a positive impact on the respondents' preference for organic products. The models underlying the analysis are shown below.

## Models

Model 1. Impact of information on the preference for organic tomatoes					
	Dependent variable: Preference for organic tomatoes				
	$\beta$	SE	z score	p value	Odds ratio
<b>Informed group</b>	1.147	0.147	7.827	<.001	2.946
<b>Intercept</b>	-0.863	0.105	-8.049	<.001	0.426
Observations	822				
Log Likelihood	-491.626				
AIC	987.252				

Model 2. Impact of information on preference for organic chicken					
	Dependent variable: Preference for organic tomatoes				
	$\beta$	SE	z score	p value	Odds ratio
<b>Informed group</b>	0.543	0.177	3.073	.002	1.720
<b>Intercept</b>	-1.557	0.130	-11.966	<.001	0.211
Observations	769				
Log Likelihood	-369.040				
AIC	742.080				

Model 3. Impact of information on preference for organic milk					
	Dependent variable: Preference for organic tomatoes				
	$\beta$	SE	z score	p value	Odds ratio
<b>Informed group</b>	0.533	0.149	3.581	<.001	1.704
<b>Intercept</b>	0.315	0.099	3.177	.001	1.370
Observations	789				
Log Likelihood	-475.087				
AIC	954.175				

Model 4. Impact of information on preference for organic tea					
	Dependent variable: Preference for organic tomatoes				
	$\beta$	SE	z score	p value	Odds ratio
<b>Informed group</b>	0.730	0.156	4.679	<.001	2.076
<b>Intercept</b>	-0.959	0.113	-8.486	<.001	0.383
Observations	736				
Log Likelihood	-434.779				
AIC	873.558				

- i The Gold Standard is a tool developed by Statistics Netherlands and the Netherlands Expertise Center for Marketing Insights, Research and Analytics (MOA) to calibrate national and regional samples in the Netherlands.