

Assessing the impact of an environmental priming strategy on consumers' choice towards innovative foods resulting from new sustainable processing technologies

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Background

Non-thermal food processing technologies have been widely researched and developed in the last couple of years and it is important to understand how consumers will perceive and choose them. So far little research has explored European consumer reactions to non-thermal food labels and whether their opinion can be influenced by communication efforts. This work aims to further understand if the use of a priming strategy influences people's choice towards products developed by sustainable innovative food processing technologies, such as orange juice for high hydrostatic pressure (HPP), liquid egg for ultrasound (US), oregano for non-thermal plasma (NTP) and oat drink for pulsed electric field (PEF).

Approach

The methodology used was a Choice-Based Conjoint Analysis (CBCA), with the use of an initial priming strategy, following the one described by Loebnitz and Aschemann-Witzel (2016).

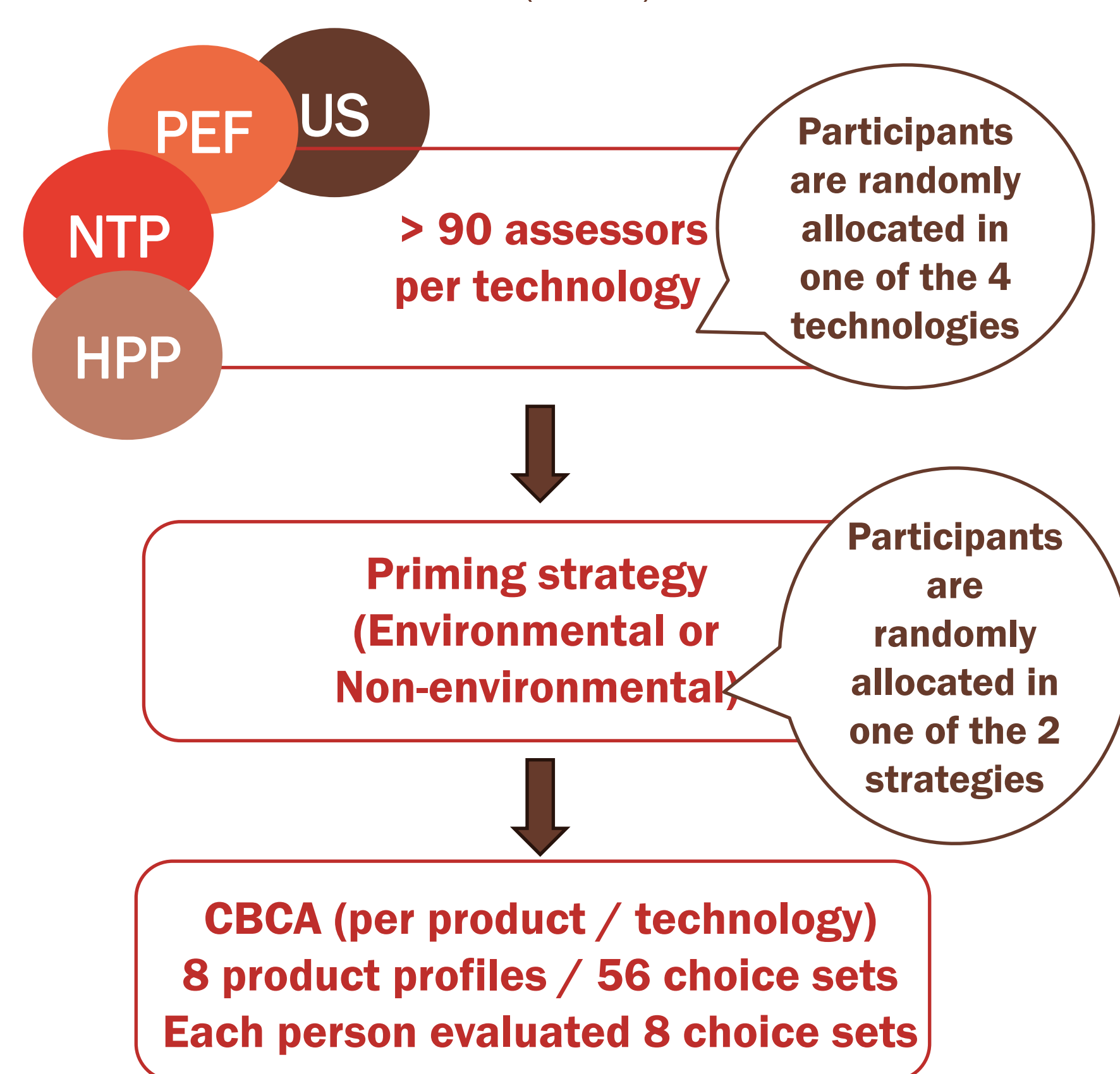


Figure 1: An example of a choice set for HPP (UK version).

Table 1. Attribute levels used in the CBCA

Attributes	Levels
Technology name	Alternative (Cold pasteurisation, Cold plasma, Fresh micro pulse and Sonication) Technical (HPP, NTP, PEF and US)
Benefits	Sustainable product Great flavour
Price	Low High

- The use of a priming strategy is to subconsciously activate people's goals, which can influence how a person thinks, acts and perceives information. The priming strategy used consisted in people rearranging the values given in table 2 from 1 to 5 in order of importance. Then, to check the activation, they had to write the value that they strived to live by and were important to them.
- For the analysis, only the participants with a clear activation of the priming strategy were considered. For the environmental priming, this consisted of: 29-45% in PT; 23-46% in the UK and; 46-64% in DE. For the non-environmental priming, this consisted of: 98% in PT; 93-98% in the UK and; 87-95% in DE.

- Through CBCA it is possible to estimate the utility of each of the products analysed, which is essential as it represents the value or preference that consumers grant to the different attributes and levels of the product. The primary aim of calculating the utility is to understand and quantify the contribution of each attribute to a consumer's overall decision when choosing between products (Rao, 2014). The products with the highest utility in each of the situations analysed can be seen in Figure 2.

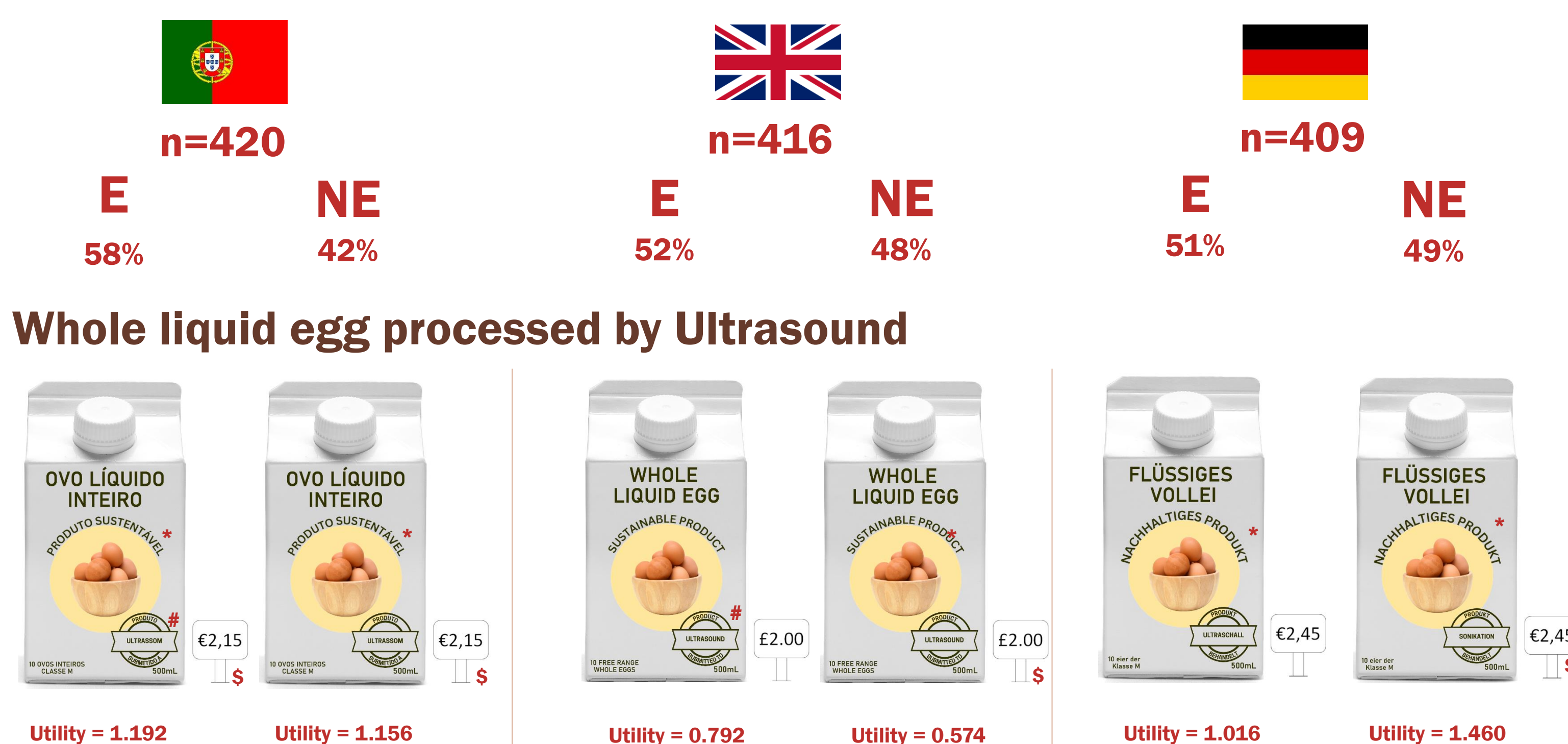
Table 2. Values used in the priming strategy

Non-Environmental	Environmental
Perfectionism	Preserving nature
Respecting other people,	Caring for future generations
Enjoying the good things in life	Living in a healthy place
Social recognition	Unity with nature
Freedom	World of beauty

CONCLUSIONS

The products with the highest utility for the three countries, in any prime and any technology analysed, were those that presented the benefits of a sustainable product and a low price. There was some variation in the name of the technology between countries, technologies and prime, which shows that it is important to understand this variation before launching products with these technologies.

Results



Oregano processed by Non-thermal plasma



Orange juice processed by High pressure



Oat drink processed by Pulsed electric field



Figure 2: Image representing the product with highest utility to each prime, technology and country. E – Environmental prime; NE – Non-Environmental prime.

*Significant difference between benefit attribute levels; #Significant difference between technology designation attribute levels; \$ Significant difference between price attribute levels

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