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Using the Near InfraRed molecular sensor technology to explore household consumption and purchase behavior of healthy food

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Consumer behavior theories often assume that during food purchases consumers visually observe all the information that the package intends to communicate. However, previous research shows that consumers make choice decisions within a few seconds and may not pay attention to all the information available on the Front-of-Pack (FOP). Recent technologies such as eye-tracking that explore consumers' visual attention on food labels suggest that consumers do not visually attend to all the information. But then, what is the purpose of the healthy nutrition labels such as nutritional claims (NCs) on the food products when these may not be viewed by consumers? Will consumers consider these labels if we constantly show them? Will their household purchase and consumption of healthy food with NCs increase after we consistently make them see the healthy information (NCs) of the product? This research aims to answer these questions and uses a Near InfraRed (NIR) molecular food scanner, which provides precise nutrient labeling to consumers.

We examine consumers' household purchase and consumption of precise nutrient labeling (NCs related to salt content) on dry-cured ham (Jamón Serrano). The data collection consists of an artefactual experiment with consumers in Zaragoza in 2021. The sample includes 34 households and 72 participants who consume Jamon regularly and are older than 18 years. A NIR and a mobile device are given to each participant in the household to scan the piece/slice of Jamon before consumption with the indications to read the nutritional information that the piece/slice of Jamon contained.

The experiment was divided into three stages: i) Measure actual purchases of Jamon for 10 days without using NIR. ii) Measure purchase and consumption of Jamon for 10 days by using NIR; iii) Measure the purchase of Jamon for 10 days after using NIR. T-test and ANOVA estimates report the differences.

The results showed that there are statistically significant differences between the consumption of Jamon in the first stage (before using NIR) and the third (after using NIR) stage. More precisely, after being forced to read the NCs related to the salt content, consumers decide to purchase and consume Jamon with a NC related to the salt content in the third stage. This knowledge suggests that the use of NIR can help consumers purchase and consume healthier foods.

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