

# Consumers' opinion to develop novel foods using jellyfish for the Spanish market

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## INTRODUCTION

Jellyfish is a product with great culinary potential and mostly unknown in Europe, although a great proliferation of jellyfishes in the European costs has aroused interest in them. The aim of this study was to determine if meeting the sensory expectations of the Spanish population when first tasting a jellyfish snack could increase acceptance or, on the contrary, increasing the 'surprise effect' could favor liking. The main hypothesis of the study was that the Spanish population might refuse jellyfish because of its expected texture, which could be easily modified using different culinary techniques.

## EXPERIMENTAL

### PHASE I

National survey (n = 335)  
Food Choice Questionnaire [1]  
Food Neophobia Scale [2]

- Expectations
  - Texture attributes (CATA Check-all-that-apply)
  - Flavour attributes (CATA)
- Elicited emotions (CATA) (EsSense25) [3]

### PHASE II

Samples design  
Consumers' test (n = 100)  

- Food Neophobia Scale
- Liking (9-points scale)
- EsSense25 lexicon (CATA)

 Data analysis

## RESULTS AND DISCUSSION

### PHASE I

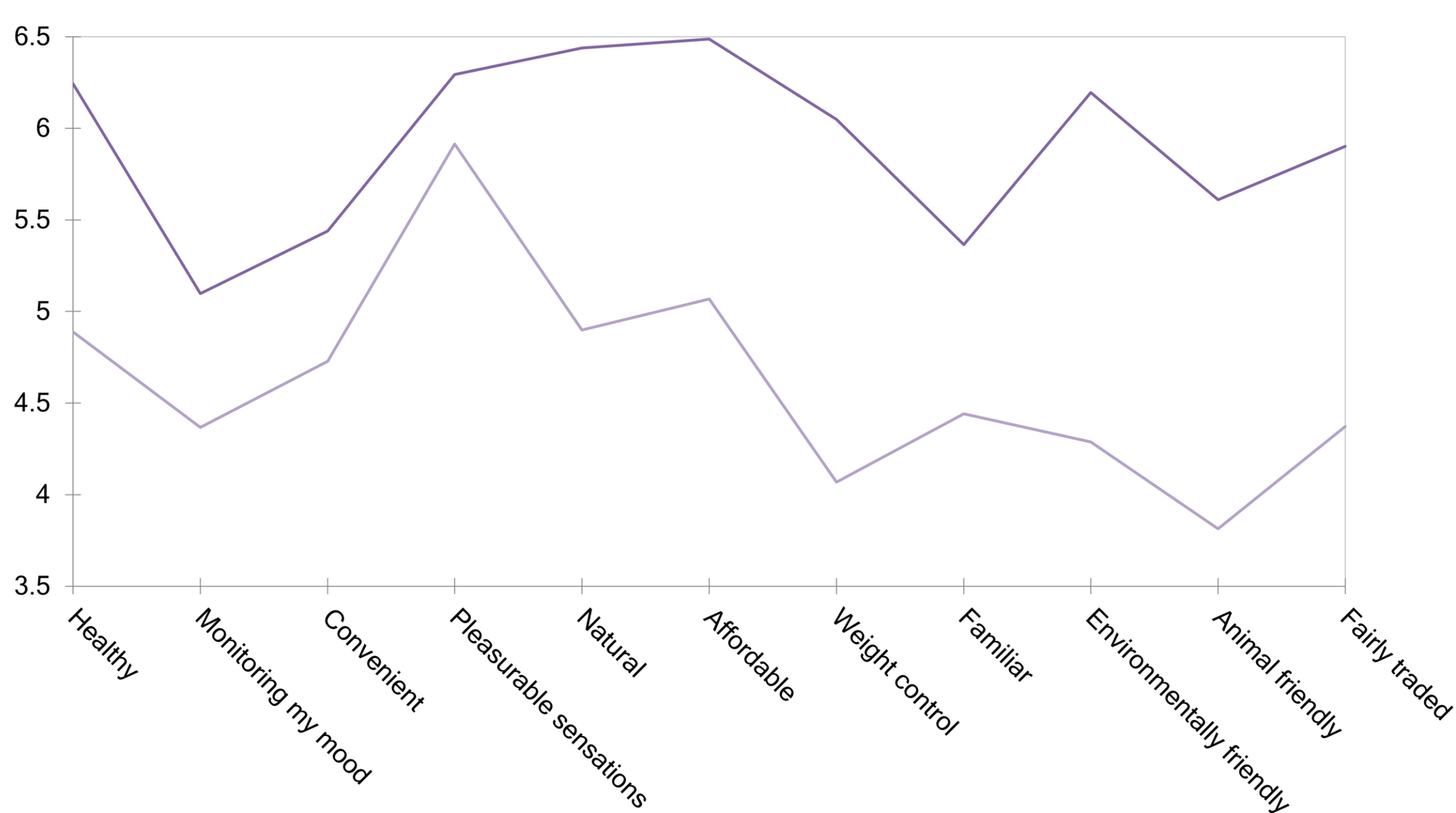


Figure 1. Hierarchical Cluster Analysis of Food Choice Questionnaire results.

### Consumers' neophobia profile

- Neophilic (n=192)
- Non-neophilic (n=143)

Table 1. Texture and flavour attributes CATA results

	TEXTURE	FLAVOUR
EXPECTED	Jelly	Salty, sea flavour
NON-EXPECTED	Crunchy	Acid, floral, sweet

### PHASE II

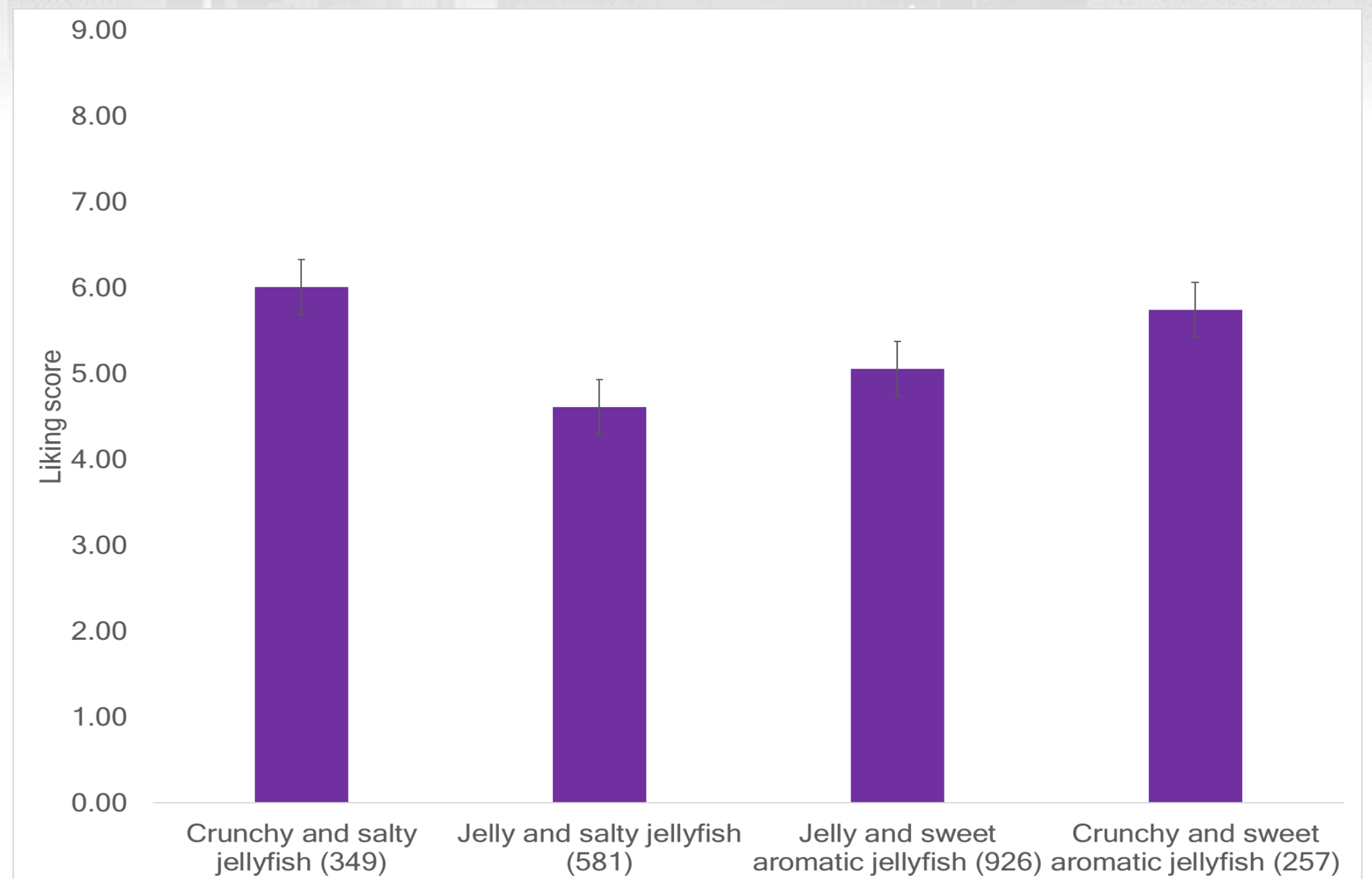


Figure 2. Mean liking score ± SEM (standard error of the mean) for the four samples of jellyfish.

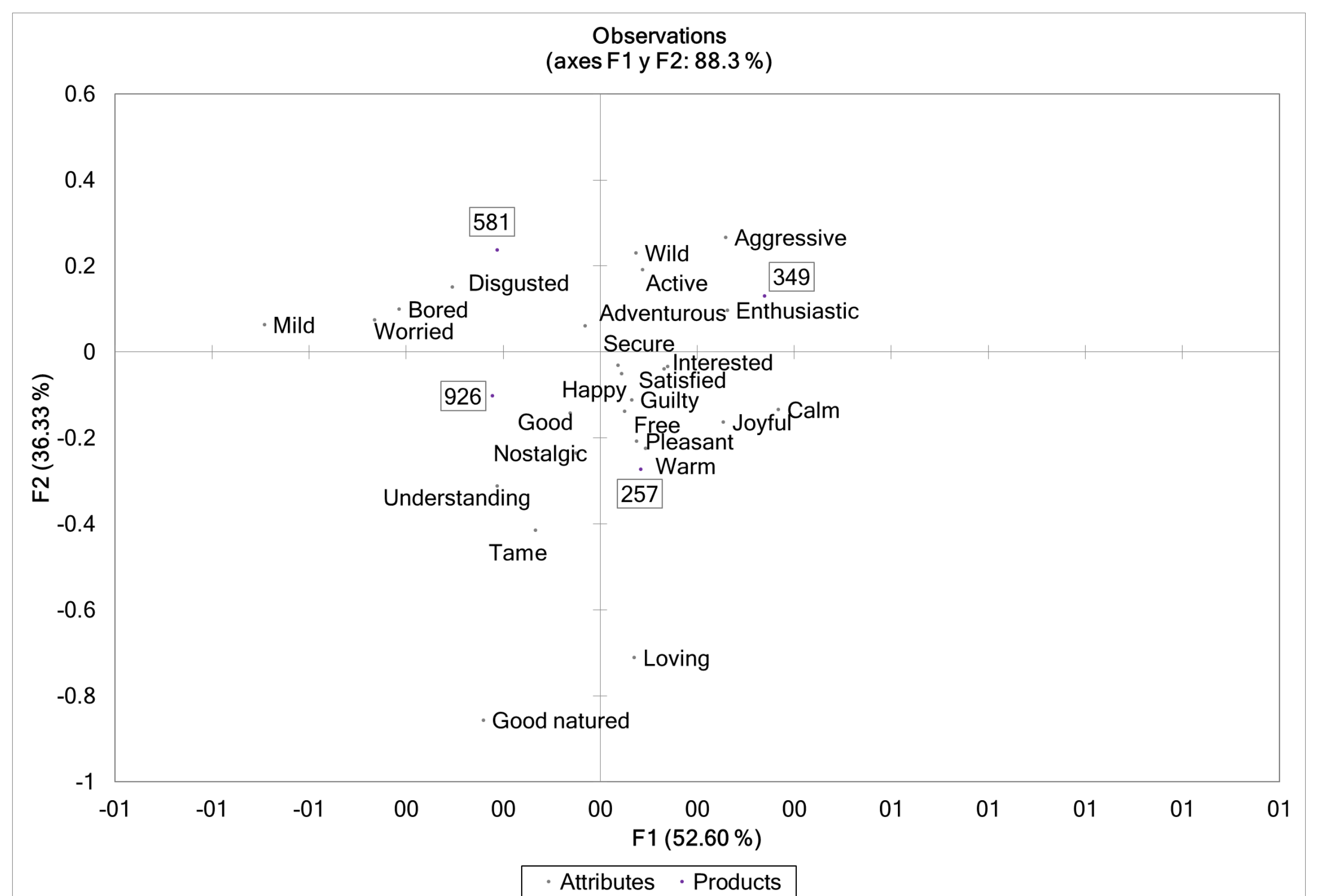


Figure 3. Correspondence analysis of CATA results for EsSense 25.

- There were no significant differences between the liking and the food neophobia ( $p > 0.05$ ).
- "Crispy and salty" sample elicited wild and aggressive sensations ( $p \leq 0.05$ ).
- "Jelly and salty" sample elicited disgusted and worried sensations ( $p \leq 0.05$ ).

An effect of gender on the attitude towards jellyfish was observed (liking), with higher values for males than female respondents.

## CONCLUSION

The present study reveals valuable information that could help a potential introduction of the edible jellyfish as food in Spain, as the characteristics and emotions that have the biggest impact in the acceptability of jellyfish has been identified. Our findings indicate that males have higher interest and liking to accept jellyfish, specially if contains salty and crunchy attributes.

[1] Fotopoulos, C., Krystallis, A., Vassallo, M., & Pagiaslis, A. (2009). Food Choice Questionnaire (FCQ) revisited. Suggestions for the development of an enhanced general food motivation model. *Appetite*, 52(1), 199-208.  
 [2] Fernández-Ruiz, V., Claret, A., & Chaya, C. (2013). Testing a Spanish-version of the Food Neophobia Scale. *Food Quality and Preference*, 28(1), 222-225.  
 [3] Dorado, R., Pérez-Hugalde, C., Picard, A., & Chaya, C. (2016). Influence of first position effect on emotional response. *Food Quality and Preference*, 49, 189-196.



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