

HEALTH INNOVATION IN PATTY PRODUCTS. THE ROLE OF FOOD NEOPHOBIA IN CONSUMERS' NON-HYPOTHETICAL WILLINGNESS TO PAY, PURCHASE INTENTION AND HEDONIC EVALUATION

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Abstract: Consumers' personality traits are key factors in understanding consumers' choice and acceptance for health innovations in food products, in particular, the Food Neophobia (FN). The patty product as a traditional pork product (TPP) with two innovative traditional pork products (ITPP) from the untapped pig breed (*Porc Negre Mallorquí*) that is covered by a Protected Geographical Indication (PGI) in Spain were analysed. Patties were enriched with Porcini (*Boletus edulis*) using the claim "enriched with a natural source of dietary fiber Beta Glucans that may contribute to improve our defence system" (ITPP1) and enriched with Blueberries (*Vaccinium corymbosum*) using the claim "enriched with a natural source of antioxidant that may help to prevent cardiovascular diseases" (ITPP2). Two Non-Hypothetical Discrete Choice Experiments were applied to investigate the importance of FN in consumers' purchase intention (PI) and Willingness to pay (WTP) before and after tasting the products. Results showed that the TPP and the ITPP2 received higher expected PI and WTP. However, after tasting the products, consumers exhibited lower WTP for all ITPP showing the prevalence of the sensory experience on health innovation. The FN was highly related to WTP before the hedonic evaluation. However, it turned to be non-significant, showing a homogenising role of the sensory experience in reducing the FN impact.

Keywords: Food Innovations, Hedonic evaluation, Non-Hypothetical Discrete Choice Experiment, Food Neophobia, untapped pig.

1. Introduction and Objectives

Food health innovations are becoming determinant factors affecting consumers' food choice. Consumers' preference and acceptance of food innovations are multidimensional and rely on a mixture of the product intrinsic and extrinsic cues, expectations, socio-economic characteristics, and attitudes. Personality traits, in particular, Food Neophobia is one of the most relevant key factors. Food Neophobia (FN) is an individual-specific trait that describes human unwillingness to consume unfamiliar food. Although FN has been examined extensively in last decades, the study of the relationship between FN and consumers' food purchase intention and willingness to pay in "real" context still limited (Jaeger et al., 2017). In general term, researches that associated the FN trait to food choice have used hypothetical survey frameworks. Within this approach, it is relevant to analyse the role of FN when associated to the PI and Willingness to Pay (WTP) when the price information is available, in particular in non-hypothetical framework. In this context, the objective is to analyse the impact of the FN trait on consumers' non-hypothetical Purchase Intention (PI) and Willingness to Pay (WTP) using the Non-Hypothetical Discrete Choice Experiment (NH-DCE) method simulating real purchasing scenarios before and after tasting the product.

2. Methodology

Our theoretical approach relies on the expectancy-disconfirmation model (Oliver, 1980). It involves a comparison between the cognitive state (expected PI and WTP) prior to an event (hedonic evaluation test) and the subsequent cognitive state (experienced PI and WTP) after the event is experienced. According to this approach, consumers develop expectations about its quality when making a food choice (Kallas et al., 2016). Once the product is consumed, these expectations may change. The experiment was carried out in three-steps: Firstly, a NH-DCE is applied, estimating a Random Parameter Logit Model. Secondly, an informed hedonic evaluation test was applied. Thirdly, the same NH-DCE was repeated to analyse the role of the hedonic evaluation in consumers' final choice and its impact on the FN trait.

The patty product as a traditional pork product (TPP) with two innovative traditional pork products (ITPP) including health innovations were used. The products were obtained from the untapped pig breed (*Porc Negre Mallorquí*) that is covered by a Protected Geographical Indication (PGI). The proposed products fit within the measures that aim to protect the autochthonous pig breeds by creating added-value products. The first innovation (ITPP1) was to enrich the patties with Porcini (*Boletus edulis*) as a natural source of dietary fibre. The second (ITPP2) was to enrich the patties with Blueberries (*Vaccinium corymbosum*) as a natural

source of antioxidants. These products were compared with “conventional quality” (CONV) and “premium quality” (PREM) patties. We defined eight purchase situations by means of a D-optimal labelled choice design (Lusk & Schroeder, 2004). The FN was estimated using the Food Neophobia Scale (FNS) developed by Pliner and Hobden (1992). Data was collected from a 121 consumers having purchased and consumed the patty product during the last month and stratified by gender and age according to the population of Catalonia. The experiment was conducted in Barcelona (Spain) during February 2017. Consumers were economically compensated with 25€.

3. Results

Results (Table 1) showed a positive expected WTP, in general, of the new products proposed from the untapped pig breeds and the innovations. The expected WTP showed the highest values for the TPP. After the hedonic evaluation, the expected WTP for the TPP were confirmed by the experienced WTP where non-significant difference was identified. The hedonic evaluation, in this case, had no significant impact on consumers’ WTP and preference change. For the ITPP, results showed that after the hedonic evaluation the expected WTP was negatively disconfirmed (decreased significantly). Consumers expected more from the proposed innovations in terms of taste and therefore the hedonic evaluation played a relevant role in determining the final preference patterns.

Table 1: Willingness to Pay (WTP) and Purchase Intention (PI) before and after the hedonic evaluation.

Products	Expected Before the informed tasting	Experienced After the informed tasting
TPP (PI, %)	14.6% ^y	21.8% ^x
ANOVA		Positive Disconfirmation
TPP (WTP)	3.48€ ^{***a}	3.60€ ^{***a}
Poe test		Confirmation
TPP (PI, %)	10.8% ^x	10.5% ^x
ANOVA		Confirmation
TPP (WTP)	3.13€ ^{***b}	2.59€ ^{***b}
Poe test		Negative Disconfirmation
TPP (PI, %)	18.7% ^x	18.6% ^x
ANOVA		Confirmation
TPP (WTP)	3.60€ ^{***a}	1.73€ ^{**b}
Poe test		Negative Disconfirmation
TPP (PI, %)	24.6% ^x	21.8% ^x
ANOVA		Confirmation
TPP (WTP)	2.72€ ^{***b}	2.60€ ^{***b}
Poe test		Confirmation
TPP (PI, %)	19.3% ^x	14.9% ^y
ANOVA		Negative Disconfirmation
TPP (WTP)	3.57€ ^{***a}	2.69€ ^{***b}
Poe test		Negative Disconfirmation
NONE (% selected)	12.0% ^x	12.4% ^x
ANOVA		Confirmation

Products with different superscript letters in rows (x,y) differ ($P < 0.05$). a, b, c, refer to the difference across products by column at 95% confidence interval. *** $P < 0.01$.

Analysing the expected PI, results showed a relatively low rate of preference for the TPPs and the ITPPs compared to the CONV, PREM and NONE alternatives. However, the estimated share of all products from the untapped breeds showed a potential preference at market level. The expected PI for the TPP jointly with the ITPPs had 44.10% of the total selections. Comparing the impact of the hedonic evaluation on the WTP and the PI, results showed that the product with the highest PI does not necessary imply the highest WTP (Lusk and Schroeder, 2014). The results of the association of consumers’ FN and the non-hypothetical WTP and PI showed that the low FN consumers showed the highest expected and experienced PI for ITPP and the TPP compared to the high FN consumers. Results showed that the relation between the FN and WTP was highly significant before the hedonic evaluation, while it turned to be non-significant after the hedonic evaluation test, showing a homogenising role of the tasting in reducing the FN impact.

4. Conclusions

Results showed a high non-hypothetical expected WTP and expected PI for products obtained from the unfamiliar pig breed, revealing high potential for their market penetration. However, after the hedonic evaluation, the expected WTP for the proposed innovations were negatively disconfirmed. Including the tasting experience in researches that focused on consumers WTP towards food innovation would help to understand consumers' final food choice decision.

Our study showed that the FN trait is likely to play a relevant role in defining the consumers' liking expectations, the non-hypothetical PI and WTP for the proposed food innovations. Our research showed that a market niche exists where no "add-ons" are required to improve consumers' preferences. The TPPs and the ITPP were equally perceived as healthy product showing that the suggested innovations were not significant. Marketing strategies that promotes products from the untapped pig breed should focus on the "natural" version of the product. This may allow consumers to consider the product with a special focus on the untapped pig production system

5. Reference

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