



Exploring acceptance of entomophagy: a survey of Italian consumers

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Introduction

The interest for entomophagy (the consumption of insects) is progressively increasing over the last few years (La Barbera et al., 2018). Eating insects does not simply offer physical health benefits, but it also improves sustainability and food security (Gahukar, 2012; Sileshi & Kenis, 2010; Yen, 2009; Fischer & Steenbekkers, 2018). Insects are currently consumed as part of the daily diet in many developing and non developing countries, like Africa, Asia, Latin America and Oceania (Toti et al., 2020). At European level a clear signal towards the encouragement of entomophagy has been set by the European Union, which laid down Regulation (EU) 2015/2283 on Novel Foods thereby explicitly regulating insect consumption for the first time in Europe (Tasini, 2016).

Aim

Although an increased number of studies appeared on the potential acceptance of entomophagy (House, 2018; Hartmann & Siegrist, 2016; Sogari et al., 2019), major attitudinal barriers to the use of insects as food persist in Western societies (La Barbera et al., 2018; Van Huis, 2017; Verneau et al., 2016). In recent years, a number of studies have investigated the main factors affecting Westerners' acceptance of entomophagy (for a comprehensive review, see Mancini et al., 2019). The paper will try also to analyse if some of these factors and food neophobia may be related and if they jointly contribute to the rejection of insects as food as already mentioned for other authors (Hartmann & Siegrist, 2018; Ammann et al., 2020; La Barbera et al., 2020), in particular regarding disgust and Food Neophobia.

Table 1. Food Neophobia Scale (FNS)

Number	Statement
1	I am constantly sampling new and different foods (R—reverse coded)
2	I don't trust new foods
3	If I don't know what a food is, I won't try it
4	I like foods from different cultures (R)
5	Ethnic food looks too weird to eat
6	At dinner parties, I will try new foods (R)
7	I am afraid to eat things I have never had before
8	I am very particular about the foods I eat
9	I will eat almost anything (R)
10	I like to try new ethnic restaurants (R)

Variable	Statistics
Respondents (n.)	420
Gender (%)	Male 47
	Female 53
Age (mean)	23
Previous insect consumption (%)	yes 10
	no 90

Results

In order to analyse the relation between Food Neophobia Scale (Table 1) and Phobia of Insects' scale (Table 2), two logit models were implemented as follows.

In the first model the dependent variable is the probability to eat food containing insects (ProbInsects) in the next months (Table 3), while in the second model the dependent variable is the intention to eat food containing insects (IntentInsects) in the next months (Table 4).

Results model 1. From the significant results we can observe that the high probability to eat food containing insects is related both to those who have low level of phobia for new foods and those who have low level of phobia of eating insects.

Results model 2. Significant results show that the high intention to eat food containing insects is related both to those who have low level of phobia for new foods and those who have low level of phobia of eating insects.

Discussion and conclusion

This paper outlines some interesting findings, some of which confirmed by already the literature.

- There is a negative correlation between consumers' Food Neophobic tendencies and the probability to eat insects (Hartmann et al., 2015; Caparros Megido et al., 2016; Hartmann & Siegrist, 2016; Lensvelt & Steenbekkers, 2014; Myers & Pettigrew, 2018; Pihl et al., 2018; Tan et al., 2015; Verbeke, 2015; Verneau et al., 2016; Sidali et al., 2019).
- Results show that both food neo-phobia and insect phobia make independent contributions to the intention to eat insects, and the explanatory power of insect phobia is considerably higher.
- The psychological factors are among the main barriers for acceptance (Sogari, Bogueva & Marinova, 2019; Orsi et al., 2019).

In contrast with some previous studies, gender did not have a significant influence on the neophobia level (as already mentioned by Bartkowicz, 2020; Hartmann et al., 2015; Sogari, Bogueva & Marinova, 2019; Mancini, Sogari...2019). Also the region of residence seems to be not important (Devin, 2016; Palmieri et al., 2019).

Table 2. Phobia of insects' scale

Number	Statement
1	The idea of eating insects causes me disgust/repulsion
2	Insect consumption is not socially acceptable
3	I'm afraid insect-based foods have an unpleasant taste
4	I'm afraid insect-based foods have an unpleasant consistency
5	I think insect-based foods have poor hygiene
6	I think that eating insects is not suitable for our diet

Data collection

Data were collected from a representative sample of 420 young people in Pisa, Italy in September 2019, during the Bright event - The European night of researchers in Tuscany. The Participants were randomly recruited during this event taking into account specific inclusion criteria. Inclusion criteria for the analysis were: being involved in food purchasing (but not necessarily being the primary responsible person for food purchasing) and, being a consumer of meat, i.e. no vegetarian or vegan consumers were included in the analysis. The data were collected using a questionnaire.

Table 3. Results from model 1

ProbInsects	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
sex	0.0302	0.2110	0.1400	0.8860	-0.3833 0.4436
neofobia	-0.0418	0.0119	-3.5100	0.0000	-0.0651 -0.0185
insectfobia	-0.0707	0.0161	-4.3900	0.0000	-0.1023 -0.0391
_cons	2.7015	0.4182	6.4600	0.0000	1.8819 3.5211



Table 4. Results from model 2

IntentInsects	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
sex	0.2935	0.2378	1.2300	0.2170	-0.1726 0.7596
neofobia	-0.0549	0.0141	-3.9000	0.0000	-0.0826 -0.0273
Insectfobia	-0.1157	0.0201	-5.7600	0.0000	-0.1551 -0.0763
_cons	2.8400	0.4770	5.9500	0.0000	1.9052 3.7748