

# Consumer's willingness to pay for a locally grown meat label: A real choice experiment

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# Outline presentation

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*Choice experiment design*

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# 1. The “localvore” current debate

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## Local foods

According to the European Committee of the Regions (1996), the concept of “local food” has been used to define

**natural goods or services produced or provided by different enterprises in rural areas with an established socio-economic identity.**

“Local food” refers to a geographic production area that is circumscribed by boundaries and in close proximity to the consumer (Hand and Martinez, 2010).

# 1. The “localvore” current debate

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Previous research indicated that consumers are interested in local food products because they are perceived as having:

- i) higher quality (fresher, tastier, healthier, safer, etc.);
- ii) higher environmental sustainability (including the use of sustainable production methods, the minimization of transportation,);
- iii) higher social and economic justice (including the support of local economies, community stability, etc.).

# 1. The “localvore” current debate

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On the other hand, the sustainability of agriculture and food systems is one of the most important challenges to face in the coming years.

To maintain a sustainable agriculture requires economically viable farms even with lower subsidies.

One interesting marketing strategy for farmers to improve their profitability and therefore their long-term viability is to differentiate their products by the location where the products are grown (locally grown), **if consumers are really willing to pay for those locally-produced foods**

## 2. Objective

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The objective of this study is to **examine consumers' preferences for local food and the willingness to pay** for them in Spain.

In particular, preferences for a fresh lamb meat are investigated and two attributes are evaluated, a **“locally grown”** label (“Ojinegra from Teruel) and the **commercial type of lamb meat** (“Ternasco” and “suckling”).

# 3. Experimental procedure

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A **real choice experiment** has been used for two reasons:

- the similarity of the choice task asked to participants to their real purchase decisions
- To mitigate the hypothetical bias inherent in hypothetical choice settings



**A incentive compatible mechanism was introduced**

# 3. Experimental procedure

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## Incentive compatible mechanism

- Participants, received 10€ at the end of the session
- Participants were informed that the interviewer will draw a number between 1 to 8 (total number of choice sets) to determine the binding choice set
- Participants were informed that they should pay the price market in this binding choice set and they would then receive the corresponding product



# 3. Experimental procedure

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## Experimental design:

- Selected product: a package of three lamb ribs
- Selected attributes and levels:
  - **Price:** 2.5, 3, 3.5 and 4 € per package
  - **Locally grown label:** unlabeled and labelled as “Ojinegra from Teruel”
  - **Type of commercial lamb meat:** “Ternasco” and “Suckling”

### 3. Experimental procedure

Ojinegra from Teruel: is a breed raised in the south of Aragón (Spain) for a long time because their breeding requirements suit the climatic and geographic characteristics of the area



# 3. Experimental procedure

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## Choice set design:

- Street and Burgess (2007). Main effects designed
- For, 3 attributes with 4, 2 and 2 levels and 2 options
- 8 pairs were obtained (design efficiency 96.7%)
- Participants faced 8 different choice set scenarios and they had to choice between two products with different attributes and prices plus the no buy option

# 4. Model specification

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## Lancaster utility function and RPL model approach

$$U_{njt} = ASC + \beta_1 PRICE_{njt} + \beta_2 OJITER_{njt} + \beta_3 TERNASCO_{njt} + \varepsilon_{njt}$$

where  $n$  is the number of respondents,  
 $j$  denotes each of the three options available in the choice set and  $t$  is the number of choice occasions.

**ASC:** a dummy variable indicating the selection of the designed alternatives.

**PRICE:** the price levels faced by consumers.

**OJITER:** lamb meat labeled as “Ojinegra from Teruel”. Effect coded variable

**TERNASCO:** commercial type of lamb “Ternasco. Effect coded variable

Error: unobserved random term that is distributed following an extreme value type I (Gumbel) distribution, i.i.d. over alternatives and independent of  $\beta$  and the attributes that is known by the individual but unobserved and random from the researcher’s perspective which motivates different choice models.

## 5. Data collection

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In a medium-sized Spanish town, **Zaragoza**.

During March and April **2009**.

Target respondents were the **primary food buyers** in the household and only **households who consumed lamb** meat at least occasionally were finally included in the sample.

In total, **133 participants** were recruited in different locations in Zaragoza.

# 5. Data collection

<i>Variable definition</i>	<i>Name (type)</i>	<i>Value*</i>
Gender		32.3
Male	FEMALE (dummy)	67.7
Female		
Age (Average from total sample)		49.7
	AGE (continuous)	(14.96)
Education of respondent		59.4
Elementary School	UNIVERSITY	27.1
High School	(dummy 1=university; 0	13.5
University	otherwise)	
Average household monthly Income		15.8
Below 1,500 Euro		29.3
Between 1,501 and 2,500 Euro	INCOME (continuous)	35.5
Between 2,501 and 3,500 Euro		19.6
More than 3,500 Euro		
Household Size (Average from total sample)		3.5
	HSIZE (continuous)	(1.33)

# 6. Results

## Error Component Model - Random Parameters Logit (ECMRPL) with correlated errors

	Model 1	Model 2	Model 3
<i>Mean Values</i>			
ASC	4.85 (15.46)	8.34 (9.69)	<b>7.86 (9.49)</b>
PRICE	-1.16 (-12.28)	-1.33 (-13.98)	<b>-1.33 (-14.35)</b>
OJITER	0.13 (3.42)	0.15 (2.54)	<b>0.20 (2.73)</b>
TERNASCO	0.18 (3.15)	0.23 (2.77)	<b>0.29 (2.95)</b>
<i>Standard deviations of parameter distributions</i>			
OJITER	0.00 (0.017)	0.14 (1.27)	<b>0.26 (2.33)</b>
TERNASCO	0.48 (7.14)	0.59 (8.85)	<b>0.66 (2.45)</b>
<i>Standard deviation of the latent random effect</i>			
$\sigma$		3.80 (4.99)	<b>4.36 (4.20)</b>
<i>Population mean WTP – 2 * (<math>\beta_{attribute} / \beta_{price}</math>)</i>			
OJITER	0.23 (3.34)	0.23 (2.63)	<b>0.29 (2.83)</b>
TERNASCO	0.30 (3.09)	0.35 (2.82)	<b>0.43 (3.00)</b>

# 7. Conclusion

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- Consumers get higher utility for a package of lamb ribs with the “locally grown” label (“Ojinegra from Teruel”) than for the unlabeled package.
- Consumers get higher utility for a package of “Ternasco” lamb ribs than for one package of “Suckling” lamb ribs.
- Consumers are willingness to pay a premium of **13%** in the price for the “**locally grown**” label (“Ojinegra from Teruel”) and a **9%** price increase for the “**Ternasco**” lamb ribs.



# 7. Conclusion

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- To investigate preference heterogeneity, socioeconomic and demographic consumers' characteristics were introduced in the model (interaction with attributes)
- These interaction terms were not statistically significant indicating that preference heterogeneity is not explained by the typically observed consumers' characteristics (socio, economic and demographic)

# 7. Conclusion

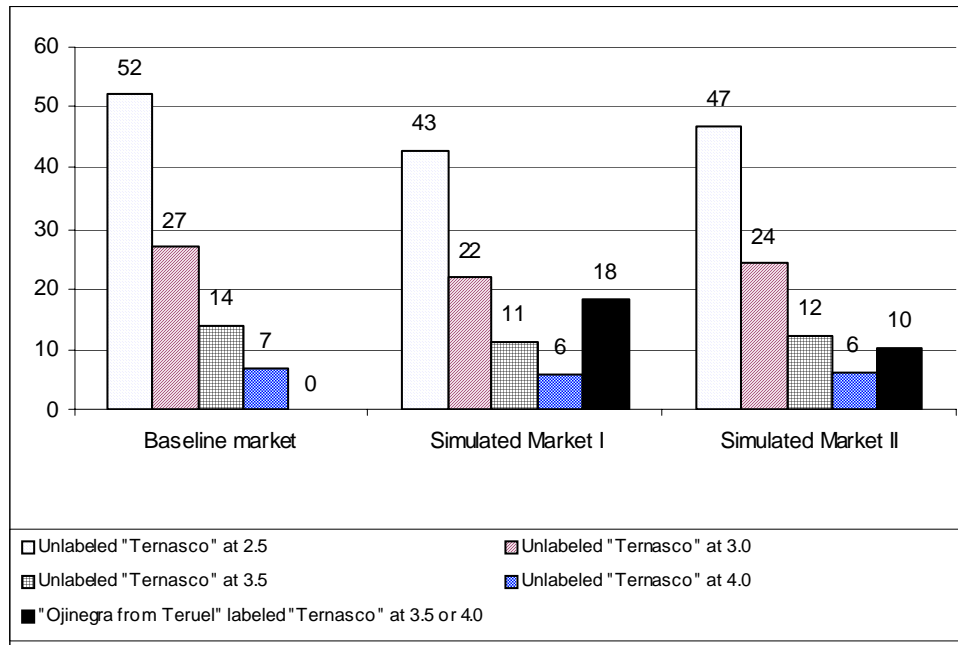
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## Simulation (Train 2003)

Baseline market: we assume a market were only “Ternasco” lamb ribs without this label “Ojinegra from Teruel” are sold (assumption highly realistic for Aragon)

Simulated market: a new product is introduced in the market with the “Ojinegra from Teruel” label (2 prices assumption, the highest prices, 3.5 € and 4 €)

# 7. Conclusion



## Mean market shares for alternative market scenarios

**this new product** will capture **18% market share** if the package of lamb ribs is assumed to be **sold at 3.5 €** and a **10% market share** if the package is assumed to be sold at **4 €**

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# Thanks