



TRAFOON project - International Conference:  
Bonding tradition with innovation - successful  
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## CONSUMER PREFERENCES FOR AN ARCHETYPAL TRADITIONAL FOOD PRODUCT IN HUNGARY

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DEBRECENI EGYETEM  
GAZDASÁGTUDOMÁNYI KAR



- To boost competitiveness and profitability, the EU has looked to greater value-added production, drawing on its reputation for quality goods (European Parliament and the Council of the European Union, 2012).
- One potential type of quality goods are Traditional Food Products (TFPs).





- Mangalica represents an ideal product for

investigating consumer behavior relating to TFPs,  
as its appeal rests on its long, distinctive history  
and status as part of Hungary's gastronomic  
heritage.

- Understanding consumers' WTP for mangalica  
products and the best strategies for realizing this,  
in terms of product composition, labelling and  
retail channels is thus of paramount concern.





- Design of the survey

- Prior to the experiment, focus groups with experts from the Hungarian pork sector and with potential and actual buyers were conducted in order to identify salient product attributes and their levels.



# Mangalica sausage attributes, attribute levels and coding in the DCE

Attribute	Level	Effects coding	
Retail price of mangalitza sausage	1500 HUF/kg 2000 HUF/kg 2500 HUF/kg 3000 HUF/kg	Continuous variable	
Certification of NAMB	No	-1	-
	Yes	1	-
Share of mangalitza	50%	-1	-1
	75%	1	0
	100%	0	1
Source of purchase	Farmers' market	-1	-1
	Butcher/small store	1	0
	Hyper/supermarket	0	1

All prices were expressed in the local currency - Hungarian Forints (HUF).



- In order to avoid the base levels being confounded with the intercept (opt-out), we use effects coding instead of dummy variable coding.



- As suggested by Bech and Gyrd-Hansen (2005), the base levels (no certification, 50% mangalica share and farmers' market, for each of the three attributes) were set equal to the negative sum of the estimated coefficients of the other levels within an attribute.



- Consequently, effects for all levels can be estimated.

- After defining the attributes and their levels, the full factorial design (all possible combinations of the attribute levels) consisted of  $2^1 \times 3^2 \times 4^1 = 72$  hypothetical purchase scenarios (choice cards).
  - It was infeasible for subjects to rate all possible combinations of these scenarios.
  - Therefore a fractional factorial orthogonal main effects design (Kuhfeld et al., 1994) was created, where this number was reduced to 16.
  - In the experiment, participants
- were presented with 8 choice sets.





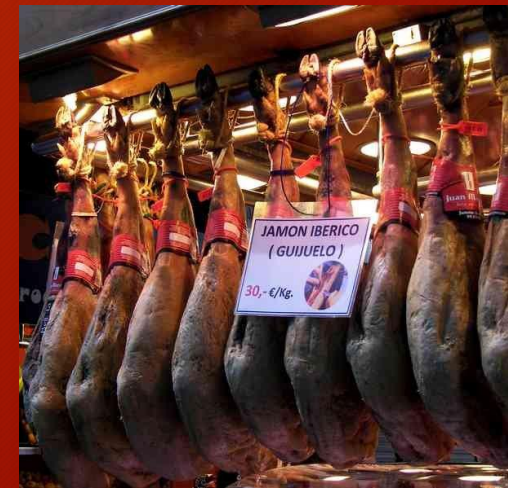
# Example of a set of choice cards



	Product "A"	Product "B"	None of these two products
Price (HUF/kg)	2500	1500	
Certification of NAMB	Yes	Yes	
Share of mangalitza	75%	50%	
Source of purchase	Hyper/supermarket	Butcher/small store	
Your choice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



- Data of the survey
- The questionnaire was piloted with 50 randomly selected consumers and subsequently modified.
- The final survey was carried out between August and October 2012 in the North Great Plain Region of Hungary.
- This is the most significant region for breeding mangalica pigs - nearly 40% of the total number of sows are bred here and it is also the location of NAMB's headquarters.
- In total, 309 individuals fully completed the questionnaire.
- Data collection occurred face to face.



- We collected data in six towns and 18 villages in the region.
- In towns we intercepted consumers
  - at 5 hyper- and supermarkets (Auchan, Tesco, Interspar / Spar, Match),
  - 7 farmers' markets and
  - 11 butcher / small stores.
- While in villages, intercepts occurred at
  - 23 butchers / small stores and 18 farmers' markets.
- From the middle of the 2000s onwards, hyper- and supermarkets in Hungary have sold mangalica products, marketing them as derived from an ancient Hungarian but world-famous breed of pig.





- The questionnaire consisted of three parts:

- In the first part, respondents reported their actual pork buying habits (products purchased and retail outlets patronized).
- They indicated, whether they had consumed mangalica products previously (variable Experience).
- In the second part, respondents completed the DCE.
- The third part focused on demographic / socio-economic questions.





- Respondents were selected using quota sampling, so as to be representative (regarding age, gender and residence) of the North Great Plain region of Hungary.





# Survey Descriptive Statistics

Demographic / socio-economic measures	Sample (n=309)	Northern Great Plain region
Gender (%)		
Female	56.3	52.1
Male	43.7	47.9
Age of head (mean)	40.1	40.2
Residence		
Urban	62.8	68.1
Rural	37.2	31.9
Highest level of education achieved (%)		
(1): Elementary	8.8	-
(2): Secondary	51.1	-
(3): University	40.1	-

# Survey Descriptive Statistics

Demographic / socio-economic measures	Sample (n=309)	Northern Great Plain region
Monthly gross income (%)		
(1): Substantially below average	39.6	-
(2): Below average	18.4	-
(3): Average	25.2	-
(4): Above average	16.8	-
Experience - previously consumed mangalica (%)		
Yes	51.5	-
No	48.5	-



Model estimates					
	MNL	RPL(lognormal price)		GMNL-WTP-space	
	Mean	Mean	SD	Mean	SD
Price/1000	-1.079***	-0.538***	-0.927***	-1 (norm.)	-
OptOut	-3.043***	-7.351***	5.378***	-6.251***	2.419***
Certification	0.493**	1.048*	1.744***	0.504**	0.682***
Share75%	0.254	0.694*	0.228*	0.236	0.298***
Share100%	0.481***	0.819*	0.887***	0.421**	0.305***
Hypermarket	-0.771***	-1.498***	0.959***	-0.641***	0.458***
Butcher	0.376**	0.921**	0.538***	0.291**	0.236***
*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively;					
(Clustered, robust Std. Err.)					

## Model estimates

No. of obs.: 7,416	Pseudo R <sup>2</sup>	LL	AIC	BIC
MNL	0.161	-2,278	4,655	4,993
RPL (lognormal price coeff.)	0.315	-1,1861	3,876	4,408
GMNL - WTP-space	0.293	-1,918	3,979	4,470



# WTP estimates (base segment, thousand HUF)

Attribute/level	Model	Mean	Median	SD.	Min.	Max.
Certification	RPL	0.932	0.446	2.684	-35.105	119.236
	GMNL	0.504	0.504	0.681	-2.452	3.489
	MNL	0.457	0.457	0	0.457	0.457
Share_75%	RPL	0.624	0.385	0.798	-0.536	36.901
	GMNL	0.237 <sup>a</sup>	0.237	0.298	-0.99	1.434
	MNL	0.235 <sup>a</sup>	0.235 <sup>a</sup>	0	0.235 <sup>a</sup>	0.235 <sup>a</sup>
Share_100%	RPL	0.732	0.374	1.472	-15.218	53.025
	GMNL	0.422	0.422	0.305	-0.845	1.744
	MNL	0.445	0.445	0	0.445	0.445
Hypermarket	RPL	-1.348	-0.754	2.092	-84.061	20.249
	GMNL	-0.644	-0.642	0.458	-2.626	1.537
	MNL	-0.715	-0.715	0	-0.715	-0.715
Butcher	RPL	0.829	0.469	1.221	-6.537	41.838
	GMNL	0.29	0.291	0.236	-0.799	1.39
	MNL	0.184	0.184	0	0.184	0.184

<sup>a</sup> The mean of the coefficient was not significantly different than zero.

- First, on average, individuals evaluate the presence of quality certification positively and are willing to pay a range of :  
HUF900 - HUF1,800 more for a product with a certificate as compared to one without (i.e.  $WTP_{\text{certification}} - WTP_{\text{no certification}}$ ).

- Interestingly, concerning the place of purchase, hyper- and supermarkets are less preferred compared to farmers' markets and smaller butchers. Decision-makers value the attribute of farmers' markets at :  
HUF350 (GMNL),

hence they are willing to pay a premium of :

HUF1000 (GMNL)

compared to hyper- or supermarkets in the respective models

(i.e.  $WTP_{\text{farmers' market}} - WTP_{\text{hyper-supermarket}}$ ).





- Concerning the place of purchase, hyper- and supermarkets are less preferred compared to farmers' markets and smaller butchers.



- This is in keeping with how consumers tend to trust and prefer smaller, local producers for speciality food goods (Kneafsey, 2012; Tregear and Ness, 2005; Vecchio, 2010)





- Three key policy implications can be drawn:
- Firstly, TFPs can command a substantial price premium compared against ‘mainstream’ alternative products.





- Secondly, the choice of retail outlet matters, with, overall, butchers and farmers' markets commanding a substantial premium compared to hyper- and supermarkets.





- Thirdly, effective certification and regulatory systems are vital to realize higher mark ups and protect the integrity of TFPs.
- This is particularly important for increasing the customer base - as evidenced in the mangalica case, inexperienced consumers and those who have relatively weaker preferences for the good place greater emphasis on quality certification.







# Thank you for your attention!

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