

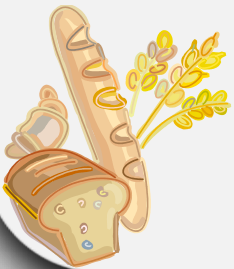
# CONSUMER ETHNOCENTRISM AND TRADITIONAL FOOD PRODUCTS – RESEARCH REVIEW

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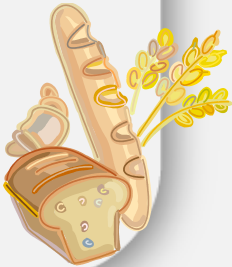
Department of Bioeconomy and  
Rural Development

Osijek, Croatia



# Introduction: Consumer ethnocentrism 02

- world market globalization - need to preserve the own economy and the aspiration towards ethnocentrism increases
- consumers with strong ethnocentrism - confident in the rightness and morality of buying domestic products, but also they refuse to buy foreign products - it will harm the national economy and cause unemployment
- the large retail chains in Croatia have nothing against the sale of cheap import products - we are exposed to a large number of imported products
- domestic products are more represented in domestic trade chains



# General concept of ethnocentrism (1)

03

- The term consumer ethnocentrism - comes from the terms "ethnic" meaning group and "centrism" which means directed, focused
- In marketing literature from the 1970's CET is a concept that embraces consumer beliefs about the superiority of products of domestic origin over products of foreign origin
- In the early 1980's literature, buying foreign products can cause high emotional involvement, especially when it comes to national security or job loss
- Herche (1992) found that the ethnocentric tendencies are better predictors of purchase behavior than demographic or marketing mix variables



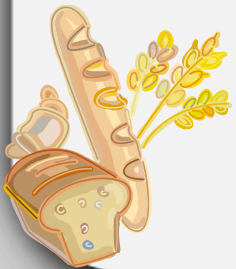
- CET and lifestyles are among major influences in buying behavior
- in the first phases of the transition, the multinational market brands were preferred (high quality and the new ones on the market) but intense competition on the domestic market woke up national motives when deciding on buying and consuming products
- CET is associated with other concepts such as patriotism or nationalism
- transition counties (Poland and Czech Republic) – strong feeling of national pride, CET positively influenced domestic purchase behaviour, especially under conditions of economic crisis



# Measuring consumer ethnocentrism – CETSCALE

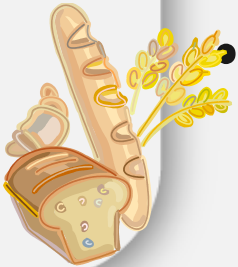
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- to measure consumer ethnocentrism, the literature has extensively used the consumer ethnocentrism tendencies scale (CETSCALE) developed by Shimp & Sharma (1987) in the context of U.S. consumers
- standard 17-item CETSCALE version
- Since 1987, the CETSCALE has been used widely by numerous studies and the CETSCALE exhibits a high degree of reliability



## *Socio-psychological factors*

- cultural openness - the readiness to interact with people from other countries and cultures
  - people who spend several years in contact with other cultures show high ethnocentric tendencies;
- patriotism - emotional feeling that people have about their own country, and that it does not mean that they ignore other countries
- conservatism - people who tend to nurture the tradition and accept changes only occasionally
- animosity or antipathy - associated with previous or current military, political or economic event
- dogmatism - a feature of a person when watching black and white, positive relationship between dogmatism and CET



# Determination factors of CET

## *Economic factors*

07

- different economies create different consumer preferences for imported products
- in transitional countries, western products will be assumed as desirable for quality and innovation
- however, as the country's economy develops, nationalist motives become more in shadow and consumers adopt a minor form of ethnocentric purchasing
- Consumer are more perceptive on products produced in more wealthy countries (better promotion than domestic products)
- more wealthy consumers tend to be less ethnocentric than less wealthy consumers

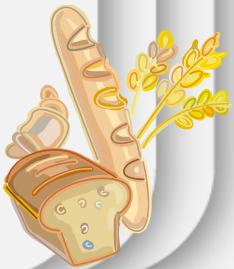


# Determination factors of CET

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## *Political factors*

- political propaganda as one of the antecedents of ethnocentrism - leaders can increase group ethnocentrism by raising the bogey of threat by out-groups
- „political freedom” or „democracy”
- whether consumers belonging to democratic countries are less likely to be swayed by political propaganda than those living in authoritarian environments
- political histories of different countries also determine the level of CET in a society – oppression history or conquerors history





# Determination factors of CET

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## *Demographic factors*

- consumer demographics determine consumer ethnocentrism (Shimp, 1984)
- gender: females tend to be more conservative, conformist, patriotic, less individualistic, more concerned about preserving social harmony - more consumer ethnocentric than males
- age: mixed results, but more support that older people have more ethnocentric tendencies than younger people
- education: people with a higher level of education tend to be less conservative and less ethnocentric



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## Etnocentričnost hrvatskih potrošača prema povrću

Pavić, Iva

Undergraduate thesis / Završni rad

2021

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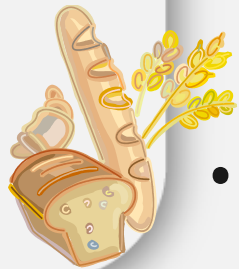
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# CET research – CET of Croatian consumers towards vegetable

# 11

- the production of vegetables fluctuates strongly from year to year, which points to problems in production technology, which significantly affects yields
- in 2022, there was a strong drop in production, to 160 thousand tons compared to 250 thousand tons produced in 2020
- agricultural areas have also been significantly reduced - in 2016 - 11 thousand hectares, in 2021 on only 8.6 thousand hectares, while in the last two years they are produced on about 9 thousand hectares
- the consumption of vegetables records continuous growth (from 59 kg p.c. to 83 kg p.c. in 2020)
- The percentage share of the most represented types of vegetables in 2017 (white cabbage 19.5%, tomato 22.7 %, onion and garlic 11.4 %, bell pepper 10.6%, carrot 7.5%)
- vegetable production in the Republic of Croatia covered 64.9% of the total needs of the domestic market



# CET research – CET of Croatian consumers towards vegetable

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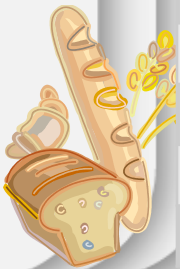
aim of final work: to define the level of ethnocentrism of Croatian consumers (N=120) toward vegetable according to CETSCALE methodology (Shimp and Sharma, 1987); 17 statements, Likert scale from 1 to 7 level of agreement



# CET research – CET of Croatian consumers towards vegetable; CETSCALE

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no	Ethnocentrism statement
1.	Croats should always buy vegetables produced in Croatia instead of imported vegetables
2.	Only vegetables that are not from Croatia should be imported
3.	By purchasing Croatian vegetables, we maintain the functioning of Croatia.
4.	Personal opinion: "Croatian vegetables now and forever".
5.	Buying foreign vegetables doesn't mean you're Croat.
6.	It is not right to buy foreign vegetables, because this will lead to an increase unemployment in Croatia.
7.	True Croat should always buy vegetables produced in Croatia.
8.	We should always buy vegetables produced in Croatia, instead of letting other countries get rich at our expense.
9.	It is best to buy vegetables produced in Croatia.
10.	Buying foreign vegetables should be limited to what they are really necessary.
11.	We Croats should not buy foreign vegetables, because it is harmful Croatian companies.
12.	Customs duties and taxes on foreign vegetables bought in Croatia should be increased.
13.	Even if it harms me in the long run, I prefer to buy Croatian vegetables.
14.	Foreign companies should not be allowed to bring their vegetables to Croatian market.
15.	The consumption of foreign vegetables would have to be taxed strictly, which will disable import into Croatia.
16.	We should only buy foreign vegetables that cannot be produced in Croatia.
17.	Individuals who buy foreign vegetables are responsible for the increase in unemployment in Croatia.

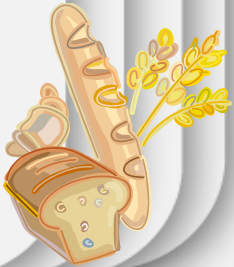


# CET research – CET of Croatian consumers towards vegetable; Results

## 14

### Socio-demographic characteristics of respondents

		N	%
<b>Gender</b>	Female	82	68,3
	Male	38	31,7
<b>Age</b>	18-30	63	52,5
	31-50	28	23,3
	>50	29	24,2
<b>County</b>	Osijek-Baranya	88	73,3
	Vukovar - Srijem	1	0,8
	Other counties	31	25,8



# CET research – CET of Croatian consumers towards vegetable; CETScale results

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## Consumer attitudes concerning buying domestic vegetables

Attitude	Average (1-7)	SD	Standard error
Croats should always buy vegetables produced in Croatia instead of imported vegetables	5,875	1,097	0,100
By purchasing Croatian vegetables, we maintain the functioning of Croatia.	6,125	0,992	0,091
Personal opinion: "Croatian vegetables now and forever".	5,717	1,310	0,120
True Croat should always buy vegetables produced in Croatia.	4,017	1,923	0,176
We should always buy vegetables produced in Croatia, instead of letting other countries get rich at our expense.	5,192	1,584	0,145
It is best to buy vegetables produced in Croatia.	5,842	1,181	0,108
Even if it harms me in the long run, I prefer to buy Croatian vegetables.	3,758	1,744	0,159

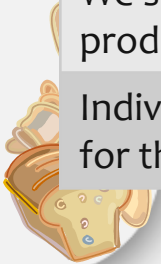


# CET research – CET of Croatian consumers towards vegetable; CETScale results

# 16

## Consumer attitudes towards vegetables – import and consumption

Attitude	Average (1-7)	SD	Standard error
Only vegetables that are not produced in Croatia should be imported	5,825	1,135	0,104
Buying foreign vegetables should be limited to what they are really necessary.	2,683	1,838	0,168
It is not right to buy foreign vegetables, because this will lead to an increase unemployment in Croatia.	4,417	1,742	0,159
Buying foreign vegetables should be limited to what they are really necessary.	5,233	1,554	0,142
We Croats should not buy foreign vegetables, because it is harmful Croatian companies.	4,767	1,633	0,149
We should only buy foreign vegetables that cannot be produced in Croatia.	4,992	1,531	0,140
Individuals who buy foreign vegetables are responsible for the increase in unemployment in Croatia.	3,392	1,844	0,168





# CET research – CET of Croatian consumers towards vegetable; CETScale results

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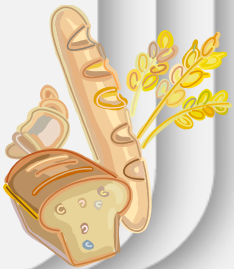
What should be done for preventing import of foreign vegetables

Attitud	Average (1-7)	SD	Standard error
Foreign companies should not be allowed to bring their vegetables to Croatian market.	3,375	1,691	0,154
The consumption of foreign vegetables would have to be taxed strictly, which will disable import into Croatia.	4,117	1,696	0,155
Customs duties and taxes on foreign vegetables bought in Croatia should be increased.	4,683	1,603	0,146



# CET research – CET of Croatian consumers towards vegetable; Conclusion 18

- Croatian consumers generally show mildly ethnocentric towards vegetables
- The general level of ethnocentrism is 4,485 taking into account all 17 statements in range from 1 to 7
- The best rated statements where consumer express ethnocentrism are those where they state feith in good quality of Croatian vegetables and importance of selfsufficiency for Croatian economy:
  - By purchasing Croatian vegetables, we maintain the functioning of Croatia – 6,125
  - Croats should always buy vegetables produced in Croatia instead of imported vegetables – 5,875
  - It is best to buy vegetables produced in Croatia – 5,842
- But when it comes to consumer benefit, their statements are less ethnocentric
  - Even if it harms me in the long run, I prefer to buy Croatian vegetables - 3,758
  - Buying foreign vegetables should be limited to what they are really necessary – 2,683



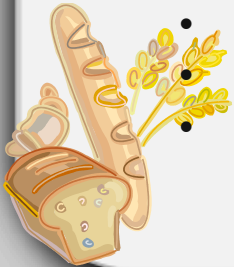
# Traditional food products - introduction

# 19

- <https://youtu.be/oXbIR7e9PYM>
- Traditional food products (TFP) are an important part of European culture, identity, and heritage; a growing segment
- TFP is a product frequently consumed or associated to specific celebrations and/or seasons, transmitted from one generation to another, made in a specific way according to gastronomic heritage, naturally processed, and distinguished and known because of its sensory properties and associated to a certain local area, region or country
- the time criterion is recently connected with traditional food - it is suggested that such a time period should correspond with a period ascribed to one generation and last at least 25 years
- Croatian TFP for a long time have been neglected because of the unfavorable legislative framework and lack of initiative
- Over the last decades, the offer of these products and the number of involved manufacturers has been increasing (Government and Local Government Initiative - stimulated projects to revive TP production and supply)



- Croatia is tourist country with pure environment and beautiful nature as well as country abundant with wealth of traditional local products
- But, Croatia hasn't sufficient supply of such products to satisfy the domestic food and touristic markets
- The reasons: production technology of the majority of domestic food products rely on a traditional technology or recipe of a small number of family farms in the Croatian regions; less interest in TP in restaurants due to higher TP prices, while foreign consumers are hardly familiar with these products because of inadequate promotion of Croatian gastronomic offer
- Since 2015 when first Croatian product is registered, now there is 60 endogenous products in European DOOR database (Database of Origin and Registration)
  - PDO (Protected designation of origin) – (Zaštićena oznaka izvornosti)
  - PGI (Protected geographical indication) – (Oznaka zemljopisnog porijekla)
  - GI (Geographical indication of spirit drinks)
  - TSG (Traditional Specialities Guaranteed) - (Zajamčeno tradicionalni specijalitet)

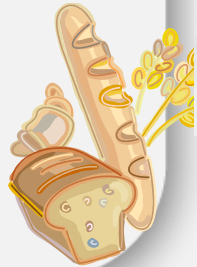


Krčki, Istarski, Drniški, Dalmatinski pršut; Maslinovo ulje Cres, Krk, Korčula, Šolta, Brač; Neretvanska mandarina; Ogulinsko, Varaždinsko kiselo zelje; Baranjski, Slavonski kulen; Lički krumpir; Poljički soparnik; Zagorski puran; Paška, Lička janjetina; Međimursko meso 'z tiblice; Slavonski med; Lička, Dalmatinska janjetina; Paška sol; Zagorski mlinci; Paški sir; Bjelovarski kvargl; Brački varenik; Varaždinski klipič; Malostonska kamenica; Rudarska greblica, Dalmatinska pečenica; Dalmatinska pancetta; Lički škripavac; Zagorski bagremov med; Zagorski štrukli; Meso istarskoga goveda – boškarina; Samoborska češnjovka; Goranski medun; Slavonska kobasica; Komiški rogač; Novigradska dagnja; Varaždinsko bučino ulje, Meso turopoljske svinje i Meso crne slavonske svinje.



# Traditional food products - introduction 21

- The most famous East Croatian TFP:
  - Slavonian sausage
  - Kulen/kulin
  - Čvarci (greaves), svargl, bacon, ham



REPUBLIC OF CROATIA  
UNIVERSITY OF JOSIP JURAJ STROSSMAYER IN OSIJEK  
FACULTY OF AGROBIOTECHNICAL SCIENCES OSIJEK

**Sanja Jelić Milković, MEngSc Agriculture**

**IMPACT OF SOCIAL CONCERNS ON CONSUMER CHOICE OF  
BLACK SLAVONIAN PIG MEAT**

DOCTORAL THESIS

Osijek, 2022

Jelić Milković, S. Impact of social concerns on consumer choice of Black Slavonian Pig meat. Faculty of Agrobiotechnical Sciences Osijek, University of Josip Juraj Strossmayer Osijek, Osijek, Croatia, July 21, 2022



## RESEARCH BACKGROUND AND MOTIVATION

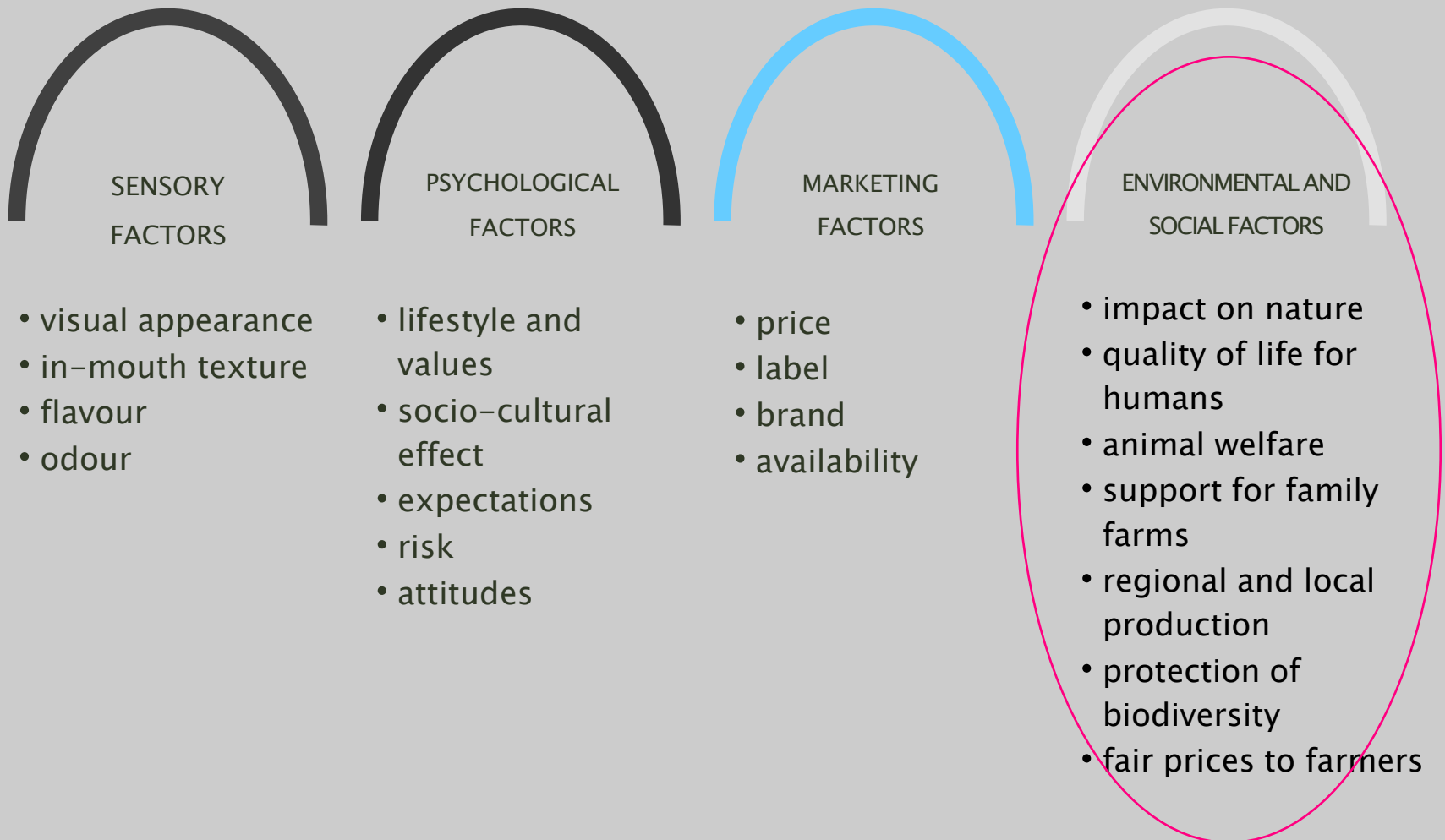
- Republic of Croatia – long tradition of pork production
- Production – family farms and large pig farms
- Modern production:
  - highly selected genotypes of meat pig breeds
  - breeding in an intensive production system
- Preservation of local pig breeds
- Products from indigenous pig breeds – high gastronomic and economic value
- Public interest in sustainable, high quality and safe food



- The black Slavonian pig or fajferica is an autochthonous breed of pig in Croatia
- pig with modest food requirements, suitable for outdoor keeping
- It feeds on cereals, corn, acorn, pumpkins, clover, etc.
- the meat quality of the black Slavonian pig was assessed by the color of the meat, the pH of the meat and the ability to bind water.
- The percentage of intramuscular fat is high (6 to 8%).



Consumers are the last step in the production chain, so it is essential to understand factors affecting consumers' behaviour (Font i Furnols and Guerrero, 2014; Marinova and Bogueva, 2019).



## METHODOLOGY

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### Method

 Online survey

### Location



### Collected Sample

 410 completed survey

### Time and duration

June 2021, 15 minutes

- Criteria established to select the consumers were the gender, age and geographical region of the Croatian population
- Three screening questions (age, pork consumption, responsible (at least partially) for purchasing food products in household)
- Each respondent evaluated 12 choice tasks in 2 treatments (control or information)

## Discrete choice experiments are:

- based on microeconomic theory
- a survey based instrument to elicit preferences and willingness to pay values for goods, services or policy changes
- a stated preferences approach: the respondent is asked to choose repeatedly between hypothetical alternatives
- a tool to investigate several attributes of a good rather than the good itself
- an increasingly popular method, especially in trans – and interdisciplinary research

Most important for a successful choice experiment is the **selection process of attributes and attribute levels.**

<b>Product attribute</b>	<b>Product level</b>
Price	70.00 HRK/kg 120.00 HRK/kg 170.00 HRK/kg
Colour	dark red light red
Geographical information	Continental Croatia Continental Croatia + PDO Other regions

FRESH PORK HAM WITHOUT BONES OF  
BLACK SLAVONIAN PIG  
REARD OUTDOOR



LIGHT RED COLOUR  
OF MEAT



CONTINENTAL  
CROATIA



170.00 HRK/kg

FRESH PORK HAM WITHOUT BONES OF  
BLACK SLAVONIAN PIG  
REARD SEMI-INDOOR



DARK RED COLOUR  
OF MEAT



CONTINENTAL  
CROATIA + PDO



120.00 HRK/kg

FRESH PORK HAM  
YOUR USUAL CHOICE



PINK COLOUR OF  
MEAT



45.00 HRK/kg



FRESH PORK HAM WITHOUT BONES OF  
BLACK SLAVONIAN PIG  
REARD OUTDOOR



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CONTINENTAL  
CROATIA



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FRESH PORK HAM  
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PINK COLOUR OF  
MEAT

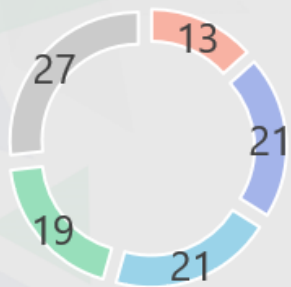


45.00 HRK/kg



## Age

- 18 – 24
- 25 – 34
- 35 – 44



CONNECTION WITH AGRICULTURE	
Urban	79 %
Rural	22 %

### CONNECTION WITH AGRICULTURE

Yes	44 %
No	56 %

### EDUCATION

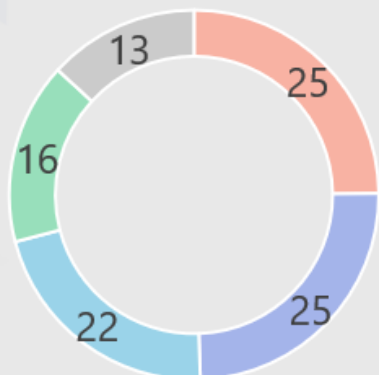
High school and lower 25 %

Higher education 51 %

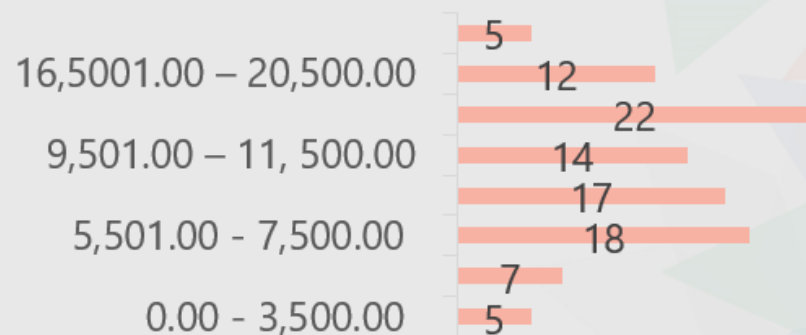
University degree 25 %

## Region

- Central Croatia
- North-western Croatia
- Eastern Croatia
- Northern Adriatic and Lika
- Middle and South Adriatic

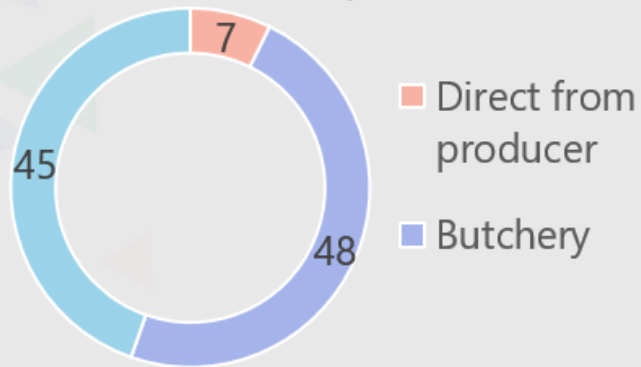


## Household monthly income (HRK)

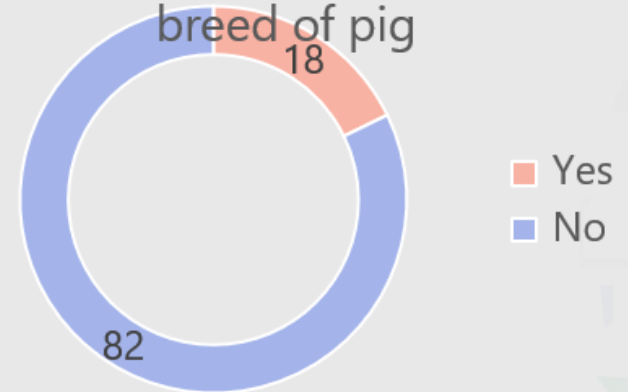


## IV RESEARCH RESULTS

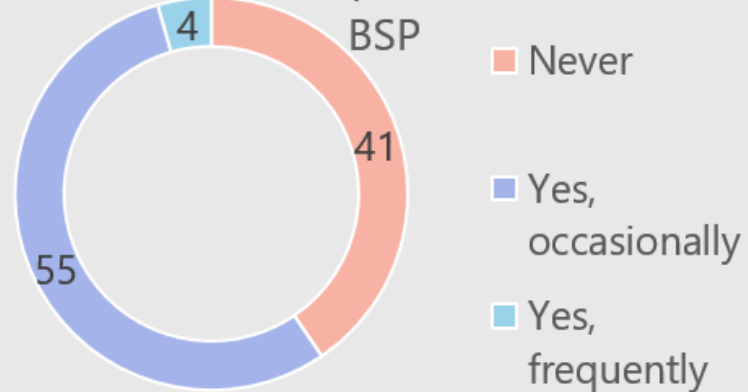
### Place of purchase



### Knowledge about the breed of pig



### Consumption frequency of fresh meat or cured products from the



Estimated parameters of the MNL, RPL, and RPL-EC models and interaction of information treatment with main effect variables

Mean estimates	Coefficients		
	MNL	RPL	RPL-EC
Number of respondents	410	410	410
Number of observations	<b>4920</b>	<b>4920</b>	<b>4920</b>
Log-likelihood	-5096.4	-4915.7	-3273.1
AIC	10214.84	9865.369	6588.258
BIC	10286.35	9975.887	6724.78
<b>St. dev. of mean estimates (std. err.)</b>			
COLOUR (dark)		0.5615***	0.4759***
GEOGRAPHICAL INFORMATION			
Continental Croatia		0.4679***	-0.5173***
Continental Croatia + PDO		0.4261***	0.4866***
Non status quo			5.1799***

Note: MNL – multinomial logit, RPL – random parameter logit, RPL-EC – error component random parameter logit, LR test – log likelihood ratio test, AIC – Akaike information criteria, BIC – Bayesian information criteria, BSP – Black Slavonian Pig’s meat, PDO – protected designation of origin

. p<0.1, \*\* p<0.01, \* p<0.05, \*\*\* p<0.001

Mean estimates	Coefficients		
	MNL	RPL	RPL-EC
BS reared outdoors	0.4561***	0.4003***	1.0255**
BS reared semi-indoors	0.3709***	0.3195***	0.6570*
PRICE	-0.0109***	-0.0130***	-0.0203***
COLOUR (dark)	-0.0573.	-0.0877.	-0.0536
GEOGRAPHICAL INFORMATION			
Continental Croatia	-0.0121	-0.0183	-0.0346
Continental Croatia + PDO	0.2303***	0.2832***	0.3427***
<b>Information treatment interaction with main effect variables</b>			
BS reared outdoors * Information	0.2924***	0.3435 ***	1.2164*
BS reared semi-indoors * Information	0.2374***	0.2573***	1.1162*
COLOUR (dark) * Information	0.1042 **	0.1282.	0.0999
GEOGRAPHICAL INFORMATION			
Continental Croatia * Information	0.0564	0.0783	0.1310
Continental Croatia + PDO * Information	0.0112	0.0305	0.0109

Note: MNL – multinomial logit, RPL – random parameter logit, RPL-EC – error component random parameter logit, LR test – log likelihood ratio test, AIC – Akaike information criteria, BIC – Bayesian information criteria, BSP – Black Slavonian Pig’s meat, PDO – protected designation of origin

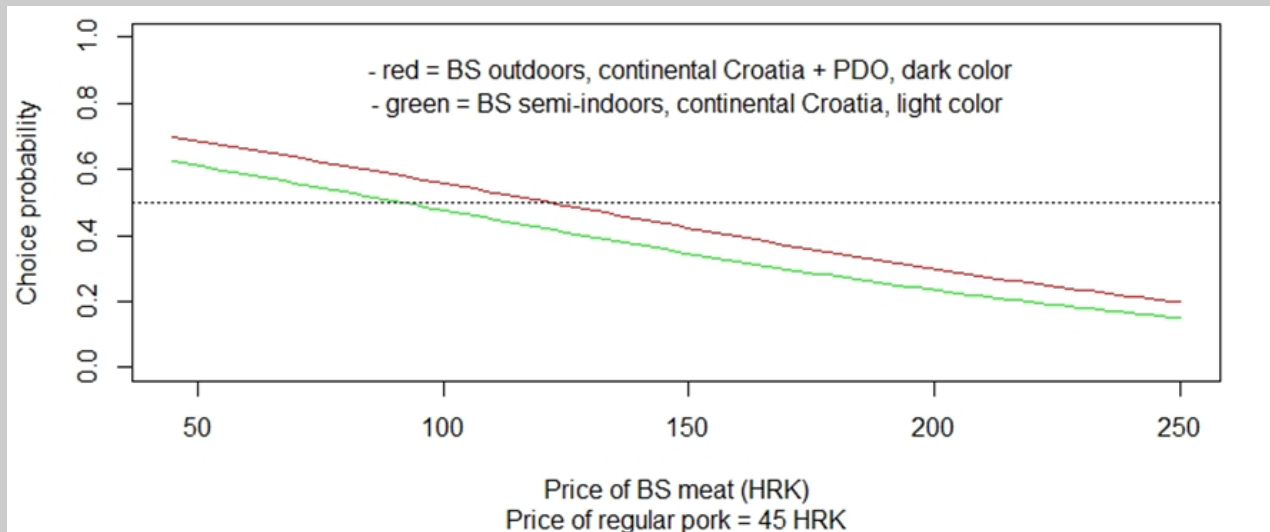
. p<0.1, \*\* p<0.01, \* p<0.05, \*\*\* p<0.001



Maximum premium prices for the attribute compared to reference product (HRK/kg)

Attributes	WTP <sub>MNL</sub>	WTP <sub>RPL</sub>	WTP <sub>RPL-EC</sub>
BS reared outdoors cf. regular pork	55.17	31.15	50.51
BS reared semi-indoors cf. regular pork	44.77	25.09	32.36
Continental Croatia cf. other regions	24.74	36.41	13.47
Continental Croatia + PDO cf. other regions	44.80	47.80	32.06

Note: BS – Black Slavonian Pig’s meat, PDO – protected designation of origin, cf. – compared to, regular pork (hybrid meat obtained from pigs reared conventionally) and other regions (regions of the Republic of Croatia in which Black Slavonian pigs are not traditionally bred) present a reference point.



# CONCLUSION

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## Economic contribution

- Specific marketing strategies for each consumer segment.
- Producers, retailers, and policymakers can design and develop successful tools for the improvement of standards in meat production, transfer of information through (labels, declarations) and promotion of fresh meat and meat products from the BS.
- Creation of marketing opportunities in rural areas through the development of a brand and a label.

## Scientific contribution

- Contribution to the theory about consumers' preferences.
- Presenting critical analyzes of previous research in this area.
- Implementation and analysis of choice experiment by including the effect of information.
- Presented methodology can be applied to the other food products in order to investigate consumer heterogeneity and predict consumer behaviour.

## Contribution at the national level




- Lack of research of this type in the Republic of Croatia.

Jelić Milković, S.; Crnčan, A.; Kristić, J.; Kralik, I.; Djurkin Kušec, I.; Gvozdanović, K.; Kušec, G.; Kralik, Z.; Lončarić, R. Consumer Preferences for Cured Meat Products from the Autochthonous Black Slavonian Pig. *Foods* **2023**, *12*, 3666. <https://doi.org/10.3390/foods12193666>



Article

## Consumer Preferences for Cured Meat Products from the Autochthonous Black Slavonian Pig

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**Abstract:** This study investigated the attitudes of Croatian consumers regarding their preferences for cured meat products from the Black Slavonian Pig. The survey was conducted on a sample of 410 consumers who completed an online survey about their consumption habits, knowledge about the pig breed, and socio-demographic characteristics. In this study, the independent samples *t*-test and ANOVA were conducted to determine the significant differences between the most important attributes in the purchase of cured Black Slavonian Pig products and the socio-demographic characteristics, consumption, and purchase habits of the respondents. Statistically significant differences were found between the studied intrinsic (color, odor, fat content, and salt content) and extrinsic variables (production method, brand, quality mark, and origin) in relation to the socio-demographic characteristics of the respondents (gender, age, employment status, number of household members, and number of children under 15 in the household) and place of purchase, knowledge about the breed, and frequency of consumption of Black Slavonian Pig meat and products. Principal component analysis (PCA) and cluster analysis (CA) were used to determine the consumer segments. Based on the responses received, three homogeneous consumer segments were identified: intrinsically oriented meat consumers, extrinsically oriented meat consumers, and uninterested meat consumers. The information obtained in the study is important for producers and retailers, as they can use our findings to develop successful marketing tools and different marketing strategies to promote cured Black Slavonian Pig products.

**Keywords:** cured meat products; Black Slavonian Pig; consumer behavior; intrinsic and extrinsic cues



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### 1. Introduction

Pork is one of the most commonly consumed meats in the world. The consumption of pork has played a crucial role in human evolution and is now an important part of a balanced diet [1,2]. Mankind began producing meat products with the aim of extending shelf life and improving taste. Meat was transformed into different products through salting, curing, and smoking, and today there is a wide range of products that differ from each other in terms of meat type, salt and fat content, processing method, and consumption occasion [1,3,4]. Traditional food products represent regional identity, traditional production methods, and gastronomic heritage [1,4–6]. Traditional food products can be a way to preserve autochthonous pig breeds and contribute to the development of sustainability, rural area preservation, and product differentiation to provide consumers with a wide range of food choices [1]. Black Slavonian Pigs have been reared for centuries in the Republic of Croatia. The Black Slavonian Pig, also known as Fašerica, was developed by the earl Karl Pfeiffer in the second half of the 19th century in Slavonia [7]. Pfeiffer created the breed with more desirable economic characteristics (feed conversion ratio, daily gain, carcass traits)

## RESEARCH BACKGROUND AND METHODOLOGY

The aim of this study was to identify consumer segments for cured meat products from Black Slavonian Pigs based on their socio-demographic characteristics, purchasing and consumption habits, and knowledge about the pig breed.

The survey was conducted on a sample of 410 consumers who completed an online survey about their consumption habits, knowledge about the pig breed and socio-demographic characteristics.

The survey was conducted among consumers who are older than 18 years, consume pork and are responsible for purchasing for their household.

The survey area was the Republic of Croatia. The survey was conducted using online software company Qualtrics Inc.

In this study, the independent samples t-test and ANOVA were conducted to determine the significant differences between the most important attributes in the purchase of cured Black Slavonian Pig products and the socio-demographic characteristics and consumption and purchase habits of the respondents.

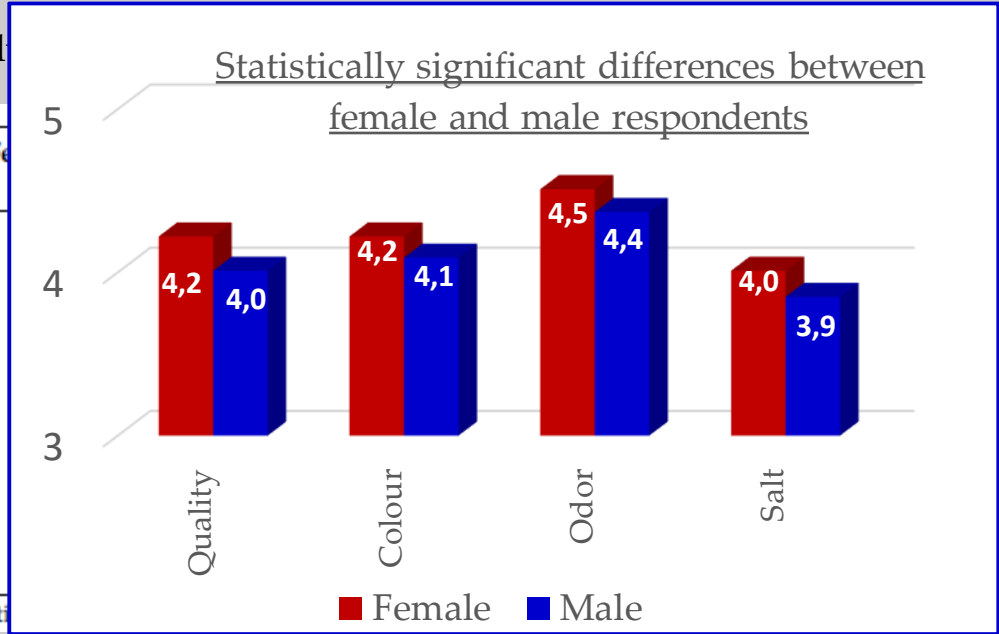
Principal component analysis (PCA) and cluster analysis (CA) were used to determine the consumer segments.

# RESEARCH RESULTS

Testing the differences in the mean values

Variables	M
Production method (domestic or industrial production)	4.12
Producer or brand	3.80
Quality mark	4.22
Origin (regions of the Republic of Croatia, autochthonous breed)	4.11
Color of the meat	4.22
Taste of the meat	4.53
Odor of the meat	4.51
Visible fat content	4.04
Percentage of salt	4.01

Note: M—arithmetic



Testing the differences in the mean values concerning knowledge of the breed

Variables	M
Production method (domestic or industrial production)	4.1
Producer or brand	3.9
Quality mark	4.2
Origin (regions of the Republic of Croatia)	4.1
Color of the meat	4.2
Taste of the meat	4.5
Odor of the meat	4.5
Visible fat content	4.0
Percentage of salt	4.0

Note: M—arithmetic

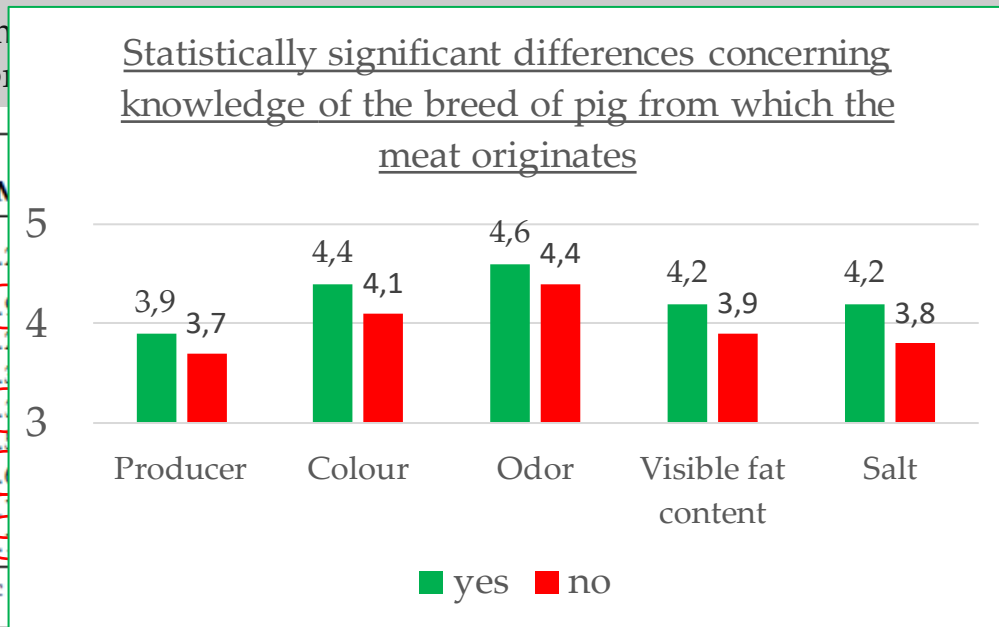


Table Testing the differences in the mean values of the variables in relation to socio-demographic and consumption habits.

	18–24		25–34		35–44		45–54		>55		<i>p</i>
	M	SD	M	SD	M	SD	M	SD	M	SD	
Percentage of salt	3.67	0.862	3.85	0.703	3.89	0.905	3.90	0.912	4.18	0.756	0.002 **
	Student		Unemployed		Employed part-time		Employed		Retired		<i>p</i>
	M	SD	M	SD	M	SD	M	SD	M	SD	
Percentage of salt	3.71	0.869	3.91	0.947	3.82	0.728	3.91	0.831	4.23	0.739	0.022 *
	1		2–4		5–8						<i>p</i>
	M	SD	M	SD	M	SD	M	SD	M	SD	
Percentage of salt			4.42	0.578	3.91	0.849	3.80	0.786			0.006 **
	0		1		≥2						<i>p</i>
	M	SD	M	SD	M	SD	M	SD	M	SD	
Producer or brand			3.76	0.814	3.91	0.608	3.53	1.063			0.035 *
Quality mark			4.14	0.700	4.23	0.685	3.90	0.949			0.031 *
Percentage of salt			4.02	0.798	3.71	0.783	3.78	1.009			0.007 **
	Direct from producer		Butcher shop		Hypert/supermarket						<i>p</i>
	M	SD	M	SD	M	SD	M	SD	M	SD	
Production method			4.20	0.925	4.13	0.706	3.96	0.674			0.042 *
Producer or brand			3.77	0.858	3.87	0.808	3.62	0.829			0.011 *
Quality mark			4.27	0.868	4.23	0.680	3.98	0.763			0.002 **
Origin			4.27	0.907	4.19	0.758	3.91	0.772			0.001 **
	Never		Yes, occasionally		Yes, frequently						<i>p</i>
	M	SD	M	SD	M	SD	M	SD	M	SD	
Origin			3.96	0.781	4.13	0.792	4.44	0.616			0.013 *
Visible fat content			3.92	0.742	4.02	0.751	4.50	0.618			0.006 **

Note: M—arithmetic mean; SD—standard deviation; \*\*  $p < 0.01$ ; \*  $p < 0.05$ ; Other variables did not prove to be statistically significant with chosen sociodemographic and consumption and purchasing habits, but results are presented in the Supplementary Materials in Tables S1–S6.

Table Consumer attitudes towards the importance of certain attributes when buying cured products from the Black Slavonian Pig.

	F1	F2
Odor of the meat	0.857	0.143
Taste of the meat	0.836	0.153
Color of the meat	0.662	0.371
Visible fat content	0.652	0.339
Percentage of salt	0.546	0.380
Producer or brand	0.077	0.806
Quality mark	0.330	0.747
Origin (regions of the Republic of Croatia)	0.316	0.733
Production method (domestic or industrial production)	0.325	0.731
<i>% Variance Explained</i>	50.270	12.351
<i>Eigenvalues</i>	4.524	1.112
<i>Cronbach's Alpha</i>	0.822	0.818

KMO = 0.853, Bartlett's  $\chi^2 = 1646.759$ ,  $p = 0.000$ . Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Note: intrinsic quality (F1); extrinsic quality (F2).

- Factor analysis was conducted to determine factors representing the interrelationship between variables regarding the most important attributes in the purchase of commodities from the Black Slavonian Pig
- 2 factors – intrinsic (explain 50,2 % of the variance ) and extrinsic (12,4%)

Consumer segments according to their socio-demographic characteristics purchasing, consumption habits and knowledge of respondents ( $\chi^2$ -test)

		Cluster (Consumers %)			$\chi^2$	<i>p</i>
		C1	C2	C3		
Gender	Male	44.4	44.6	61.7	9.284	0.010**
	Female	55.6	55.4	38.3		
Age	18-24	11.1	14.7	14.0	8.961	0.346
	25-34	19.0	22.6	18.7		
	35-44	19.0	19.2	24.3		
	45-54	21.4	14.1	23.4		
	>55	29.4	29.4	19.6		
Region	Central Croatia	30.2	21.5	24.3		
	North-western Croatia	31.0	20.2	24.3		
	Eastern Croatia	14.3	20.2	24.3		
	Northern Adriatic and Lika	14.3	20.2	24.3		
	Middle and Southern Croatia	14.3	20.2	24.3		
Labour status						
Knowledge about the breed of pig	Yes	16.7	22.6	11.2	6.066	0.048*
	No	83.3	77.4	88.8		
	Consumption frequency of fresh meat or cured products from Black Slavonian Pig	Never	41.3	38.4		
Yes, occasionally	54.0	55.4	56.1			
Yes, frequently	4.8	6.2	0.9			

Note: \*\*  $p < 0.01$ , \*  $p < 0.05$ ; intrinsic cue concerned meat consumers (C1); extrinsic cue concerned meat consumers (C2); uninterested meat consumers (C3).

Cluster analysis was performed on the basis of the factors resulting from PCA

- three consumer segments: intrinsically oriented, extrinsically oriented and uninterested
- the data show that there is a significant dependence between the variables gender and consumer knowledge about the pig breed among clusters
- Specific marketing strategies can be developed for each consumer segment



## CONCLUSION

Statistically significant differences were found between the studied intrinsic (colour, odour, fat content and salt content) and extrinsic variables (production method, brand, quality mark and origin) in relation to the socio-demographic characteristics of the respondents (gender, age, employment status, number of household members and number of children under 15 in the household) and place of purchase, knowledge about the breed and frequency of consumption of Black Slavonian Pig meat and products.

Principal component analysis (PCA) and cluster analysis (CA) were used to determine the consumer segments. Based on the responses received, three homogeneous consumer segments were identified: intrinsically oriented meat consumers, extrinsically oriented meat consumers and uninterested meat consumers.

The information obtained in the study is important for producers and retailers as they can use our findings to develop successful marketing tools and develop different marketing strategies to promote cured Black Slavonian Pig products.

## Stavovi ispitanika prema tradicionalnoj obradi mesa u Slavoniji i Baranji

Sanja Jelić Milković<sup>1</sup>, Ružica Lončarić<sup>1</sup>, Igor Kralik<sup>1</sup>, Ana Crnčan<sup>1</sup>, Jelena Kristić<sup>1</sup>, Tea Januš<sup>2</sup>

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### Sažetak

U Slavoniji i Baranji tradicionalna obrada mesa (kolinje) ne predstavlja samo potrebu za preživljavanjem kroz konzumaciju mesne hrane bogate mastima i proteinima u zimskim mjesecima. Ono tradicionalno, a i danas, predstavlja povezivanje ljudi, očuvanje običaja, starih zanata prerade mesa kroz neke nove prakse, povratak selu kao sinonimu djetinjstva i zdrave hrane. U cilju utvrđivanja u kojoj se mjeri i dalje održava tradicija kolinja u Slavoniji i Baranji te identificiranja stavova o tradicionalnim načinima obrade svinjskog mesa (kolinje), provedeno je *online* anketno istraživanje na uzorku od 889 ispitanika s područja Osječko-baranjske županije. Istraživanjem su utvrđene statistički značajne razlike u stavovima ispitanika vezanim za tvrdnje kolinje doprinosi očuvanju tradicije, kulture i običaja Slavonije i Baranje ( $p < 0,01$ ) i kolinje doprinosi povezivanju ruralnog stanovništva ( $p < 0,01$ ) u odnosu na spol ispitanika i tvrdnji kolinje doprinosi deruralizaciji ( $p < 0,05$ ) i danas je uzgoj svinja skuplji, te samim time i obrada mesa ( $p < 0,01$ ) u odnosu na ekonomski status obitelji ispitanika.

**Cljučne riječi:** tradicija, kolinje, svinjsko meso, Osječko-baranjska županija

### Uvod

Osječko-baranjska županija, općenito je poznata kao nizinski kraj u kojem prevladavaju poljoprivreda i prehrambena industrija. Istočna Hrvatska obiluje raznim tradicionalnim proizvodima od kojih se posebno ističu svinjski suhomesnati proizvodi. Tradicionalni proizvodi čine kulturu, identitet i nasljeđe jedne zemlje (Karabasil i sur., 2018.; Lukač, 2021.). Tradicija u proizvodnji mesa i suhomesnatih proizvoda duboko je ukorijenjena na Balkanu, a odvija se unutar manjih obiteljskih gospodarstva koja imaju važnu ulogu unutar lokalne i regionalne zajednice (Karabasil i sur., 2018.; Kumalić, 2018.). Tradicionalna obrada mesa ili kolinje važna je kulturna komponenta društvenog života, jer stvara i jača solidarnost u zajednici te doprinosi procesu socijalizacije koji se prenosi društvenim normama i ritualima te pomaže u jačanju neformalnih društvenih mreža i pridonosi promicanju društvene kohezije (Žmegeč, 1998.; Kumalić, 2018.). Tradicionalno kolinje široko je rasprostranjena društvena praksa na zapadnom Balkanu koja okuplja obitelji, susjede i prijatelje te pridonosi porastu društvenog kapitala i ima važan kulturni, društveni i ekonomski utjecaj na obitelji i zajednice (Kumalić, 2018.). Autor nadalje navodi da se u Bosni i Hercegovini tradicionalno klanje životinja kod kuće uglavnom prakticira kao sezonsko klanje u kršćanskim zajednicama i kao vjersko klanje u muslimanskim zajednicama. U istraživanju koje je proveo Kumalić (2018.) ispitanici su istaknuli važnost tradicionalnog kolinja za jačanje društvenog kapitala jer je to prigoda za obiteljsko i šire društveno okupljanje kao i podjelu mesa nakon kolinja kojom se naglašava socijalna osjetljivost (prilikom kolinja od strane kršćanskih i muslimanskih zajednica) doprinoseći jačanju susjedskih, prijateljskih i obiteljskih odnosa.

Cilj ovoga rada bio je ispitati stavove ispitanika o tradicionalnim načinima obrade svinjskog mesa (kolinja) i istražiti u kojoj mjeri se i dalje održava tradicija kolinja u Slavoniji i Baranji.

### Materijal i metode

Primarni podatci prikupljeni su putem metode ankete, a kao instrument istraživanja korišten je *online* anketni upitnik. Istraživanje o preferencijama sudionici istraživanja provedeno je u razdoblju od prosinca 2021. do siječnja

Jelić Milković, S., Lončarić, R., Kralik, I., Crnčan, A., Kristić, J., Januš, T. Respondents' attitudes towards traditional meat processing in Slavonia and Baranja. Conference: 58th Croatian & 18th International Symposium on Agriculture, Dubrovnik, Croatia, February 2023.

## Introduction

- Eastern Croatia is rich in various traditional products, among which pork products stand out.
- Traditional products make up the culture, identity and heritage of a country.
- **The tradition of producing meat and cured meat products** is deeply rooted in the Balkans and takes place in smaller family farms that play an important role within the local and regional community.
- Traditionally, "**kolinje**" is a **widespread social practise in the Western Balkans**, bringing families, neighbours and friends together, contributing to the growth of social capital and having an important cultural, social and economic impact on families and communities.
- The aim of this article was to explore respondents' views on the traditional processing of pork ("**kolinje**") and to find out to what extent the tradition of "**kolinje**" is still maintained in Slavonia and Baranja.



## Material and methods

- The primary data was collected through the survey method
- The survey was conducted between December 2021 and January 2022 using Qualtrics LLC online survey software
- A total of 889 respondents from Osijek-Baranja County correctly completed the questionnaire
- The whole questionnaire contained a total of 38 open and closed questions
- In this paper, only the parts related to the respondents' views on traditional meat processing in Slavonia and Baranja are presented
- The data were analysed using the methods of descriptive statistics, the chi-square test ( $\chi^2$ ), Student's t-test (independent t-test) and one-way analysis of variance (one-way ANOVA)

## Results and discussion

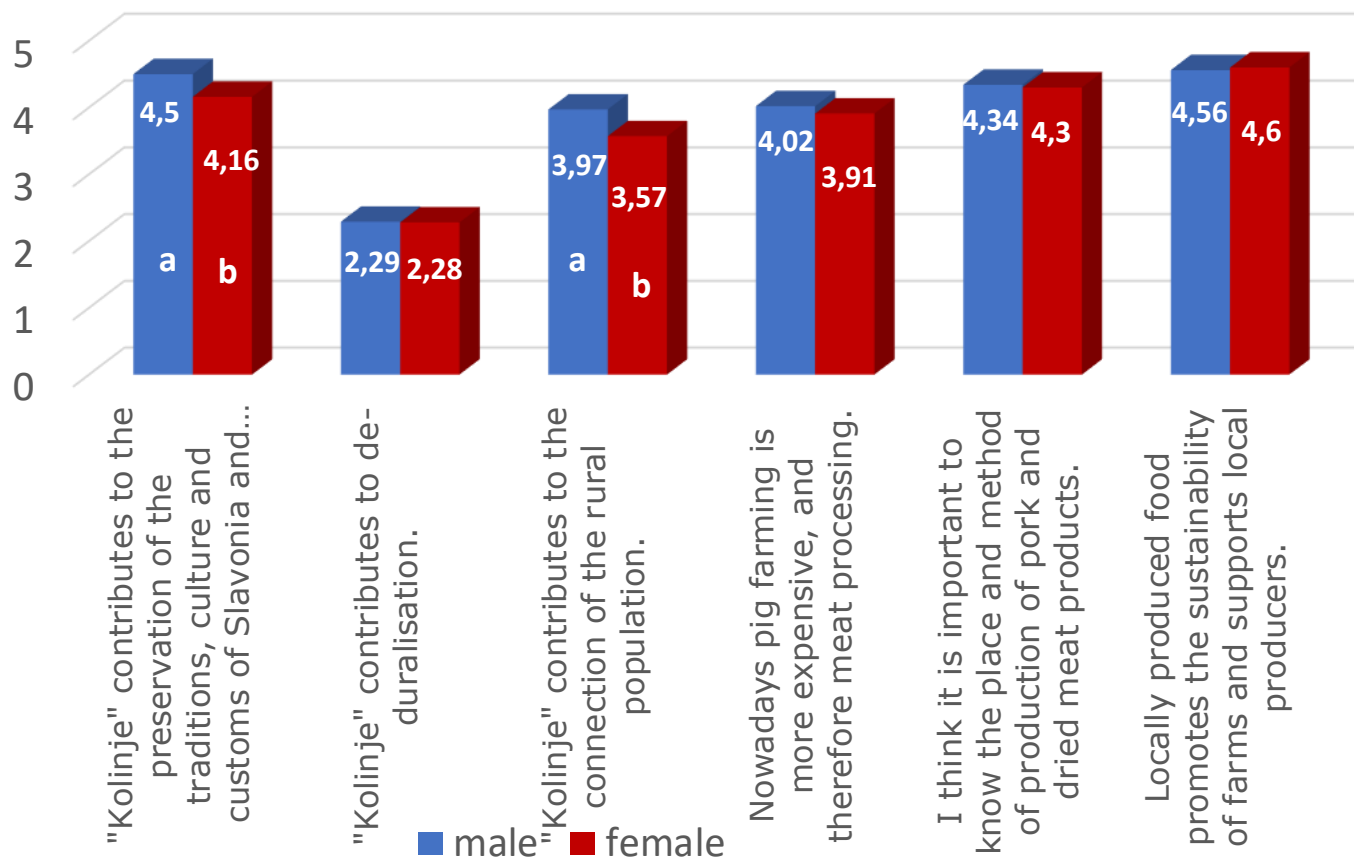
- 66.6% of the respondents were female and 33.4% were male
- From rural (43.9%) and urban areas (43.6%)
- The survey was dominated by students (55.9%) and working respondents (34.4%) aged between 18 and 34 years (84.6%).
- Most respondents reported having completed high school (36.9%) and having a university or professional degree (33.4%)
- The economic status of the family was about average (60.0%)
- 71.9% of the respondents said that they do traditional meat processing ("kolinje") in their household or go to relatives or friends

Table 1 Distribution of responses to the question on the implementation of traditional processing of pork depending on the socio-demographic characteristics of the respondents (%)

Socio-demographic characteristics		N	Traditional meat processing ("kolinje") in one's own household or in the household of relatives or friends		$\chi^2$	p
			Yes	No		
Age	18-24	501	61.2	44.0	40.712	<b>0.000**</b>
	25-34	251	27.1	31.2		
	35-44	75	7.5	10.8		
	45-54	34	2.8	6.4		
	55+	28	1.4	7.6		
Place of residence	Urban	388	34.1	68.0	114.899	<b>0.000**</b>
	Suburban	111	11.00	16.4		
	Rural	390	54.9	15.6		
Education	Elementary school	7	0.5	1.6	9.505	<b>0.023*</b>
	High school	328	38.7	32.4		
	Higher education (university or professional studies)	297	34.3	31.2		
	University degree (master's and/or PhD)	257	26.6	34.8		
Labour situation	Student	497	61.7	41.2	33.559	<b>0.000**</b>
	Employed	306	30.0	45.6		
	Unemployed	69	7.4	8.8		
	Retired	17	0.9	4.4		
Household income group	Significantly below average	16	1.7	2.0	3.160	0.531
	Below average	71	8.6	6.4		
	Average	533	60.6	58.4		
	Above average	246	26.9	29.6		
	Significantly below average	23	2.2	3.6		

\*\* p<0.01; \* p<0.05

Testing the differences in the arithmetic mean values of the statements in relation to the gender of the respondents



Concerning economic status of family (SBA, BA, A, AA, SBA), respondents with SBA economic status better evaluated all statements, while statistically significant difference is approved in 2nd and 4th statement

# Conclusion

- Respondents are aware of the importance of traditional processing of pork ("kolinje") to the rural community and also recognise the importance of locally produced food.
- The research found a statistically significant relationship between the age, place of residence, level of education and occupation of the study participants who respect the folk custom ("kolinje").
- It can be concluded that kolinje in Slavonia and Baranja does not only serve to prepare meat supplies for the winter, but has a deeper meaning when it comes to connecting people, preserving customs and adding value.
- In a time of increasing ageing and extinction of rural areas, especially peripheral areas, not only in the Republic of Croatia but also in the whole EU, it is essential to keep the population, especially the younger ones, in rural areas and to preserve traditions and customs.



## Conclusion of this lecture

- Croatian consumers are mildly ethnocentric when it comes to Croatian vegetables using CETSCALE method
- Croatia is touristic country
- Consumers are changing, according to local pig breed except the usual consumer concerns – price, quality, they are also aware of the social impact of local breeds (impact on rural development, tradition preservation, to be special in global terms)
- Importance of autochthonous food and drinks – economy of experience for consumers
- Croatia has many traditional food to offer
- Concerning traditional pig processing although it is not so spread as few decades ago, respondents are conscious of importance on that tradition and a social aspect of that tradition

# Thank you!

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