

## Consumer segmentation in the meat market – The case study of Czech Republic

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**Abstract:** The paper responds to the ongoing trends in meat consumption in developed countries and fills the gap in empirical studies on consumer segmentation by preferences in the purchase of meat and meat products in the Czech Republic. The paper aims to assess the differences between the consumer segments according to their preferences in purchasing meat and meat products. The data source was a quantitative questionnaire survey conducted among a representative sample of 992 respondents. An exploratory latent class analysis segmented consumers according to the decision-making criteria when buying meat and meat products. The results complete the picture of the meat and meat products market in terms of consumer behaviour and contribute to a better understanding of meat consumption. The segmentation of consumers according to their preferences resulted in three different categories of consumers, which differ in their purchase decision criteria and socio-demographic characteristics. The segments do not differ significantly in terms of occupation status, region, community size or income level of the respondents. The differences between the generations are much more critical, which were evident in the respondents' average age and household composition. Producers and retailers should better target their marketing activities and communication to different segments.

**Keywords:** behaviour; consumer groups; latent class analysis; meat consumption; meat products; preferences; questionnaire survey

The development of meat consumption is regionally differentiated. While meat consumption in emerging countries is steadily increasing due to population growth and income levels, meat consumption in developed countries declines (Santeramo et al. 2018). The reason for the decline in meat consumption in developed countries is the large heterogeneity in perceptions of product attributes that influence consumers' utility and willingness to pay for certain attributes of meat and meat products (Gracia and De-Magistris 2013), as well as increasing concerns about the health,

environmental and ethical impacts of meat consumption (Vanhonacker et al. 2013; Mathijs 2015).

The main factors influencing meat consumption are *per capita* income and urbanisation rate (Milford et al. 2019). There is no single consumer profile, which depends on the type of meat (Escriba-Perez et al. 2017). People with high incomes prefer diets with more fat, sugar and processed ingredients. It has implications for diseases such as obesity. However, there is a shift in consumption towards higher quality fats, whole grains, fruits or vegetables (Mathijs 2015). The growth

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of the meat alternatives market raises the issue of the sustainability of livestock production; however, meat alternatives are not always consumed as a substitute for meat but can also be a complementary component in humans' diet (Götze and Brunner 2021). In developed countries characterised by saturated consumption, the importance of price is decreasing in favour of perceived product quality (Henchion et al. 2014).

Among visual and experiential attributes, colour, especially for red meat (Gracia and De-Magistris 2013), and fat content and taste, which are closely related, are important for consumers when choosing meat (Resano et al. 2011). The country of origin can also influence consumers' purchasing decisions, especially if the country of origin is associated with higher food safety or quality (Loureiro and Umberger 2007).

Consumers in developed countries attach great importance to food safety, the environment and health (O'Donovan and McCarthy 2002). In this context, manufacturers are developing foods with positive health benefits, so product packaging plays an important role. Consumers are paying more attention to the origin of products, and organic and functional foods are becoming more popular. Trends include safe, low-fat, additive-free foods high in vitamins, minerals and probiotics (Vukasović 2014). A person's values, personal beliefs about meat and trust in information sources are increasingly important predictors of meat consumption (Lea and Worsley 2001). In Hungary, the experimental research on the impact of food labelling and other factors on consumer preferences revealed three consumer segments: price-sensitive, loyal to label, and label neutral (Czine et al. 2020).

Consumers' purchasing decisions are closely related to the information asymmetry between the producer/retailer and the consumer. Consumers are guided by the product attributes. Visual attributes are judged by consumers with their senses and are easy to recognise. After purchase and consumption, experience attributes are incorporated into the evaluation. Credence attributes cannot be assessed in normal use but require additional costly information, e.g. nutritional benefits, health of the raw material, geographical origin of the raw material (Verbeke and Roosen 2009), compliance with animal welfare standards (Vanhonacker and Verbeke 2014) and organic farming (Fernqvist and Ekelund 2014), which producers or traders can declare to the consumer through various certificates. Credence attributes are subject to information asymmetry.

The paper aims to assess the differences between the consumer segments according to their preferences

in purchasing meat and meat products. The Czech Republic has an advanced market economy, but the *per capita* consumption of meat and meat products is still expected to increase (Štrédl et al. 2021). The study results complete the picture of the meat and meat products market in terms of consumer behaviour and thus contribute to a better understanding of the determinants of meat consumption.

## MATERIAL AND METHODS

The segmentation of consumers was based on a 19-item questionnaire with dichotomous self-reporting questions. The questions were selected in consultation with food consumption experts from the Czech Republic. Consumers indicated the criteria by which they judge good meat and meat products and make their choices. The criteria are categorised according to their affiliation to visual attributes, experience attributes and credence attributes (Table 1).

The questionnaire also included socio-demographic characteristics, which had to be recoded into fewer groups to ensure a sufficiently large number of frequencies in the cross-tabulations.

- Age (cardinal variable).
- Number of children (no children, one child, two or more children).
- Household size (one member, two members, three members, four members, five or more members).
- Presence of children under 18 ('yes', 'no').
- Sex (male or female).
- Education (primary education, school leaving certificate or secondary school without matriculation examination, apprenticeship or secondary school with matriculation examination, post-secondary education or higher vocational school, higher education at bachelor's level, higher education at master's level and above).
- Occupation status (employees, entrepreneurs, maternity or parental leave, students, retired, other).
- Income (five levels of the respondent's average monthly income, ranging from the category below EUR 800 to the category above EUR 2 000).
- Municipality size (five levels ranging from a size of up to 1 999 inhabitants to a size of over 300 000 inhabitants).
- Region (14 categories).

The data source was a quantitative survey of consumers in the Czech Republic. The survey was conducted using the CAWI (computer assisted web interviewing) method (online panel) in 2020. A total of 992 people

Table 1. Self-reporting questions focusing on attributes for purchasing meat and meat products

Attribute	Criterion	Importance
Visual	appearance (colour, smell, etc.)	yes (1) / no (0)
	price	yes (1) / no (0)
	water content	yes (1) / no (0)
	salt content	yes (1) / no (0)
	additives (preservatives, dyes, stabilisers, etc.)	yes (1) / no (0)
	meat content (muscle fibre vs. fat and other ingredients)	yes (1) / no (0)
	fat content	yes (1) / no (0)
	gut contents	yes (1) / no (0)
	freshness	yes (1) / no (0)
Experiential	easy preparation for eating	yes (1) / no (0)
	quality	yes (1) / no (0)
	taste	yes (1) / no (0)
	credible origin of the product (country of rearing, production)	yes (1) / no (0)
Values	trusted brand/manufacture	yes (1) / no (0)
	credibility of the trader	yes (1) / no (0)
	environmentally-friendly production	yes (1) / no (0)
	animal welfare (breeding, slaughterhouses, etc.)	yes (1) / no (0)
	organic meat	yes (1) / no (0)
	consumer test results	yes (1) / no (0)

Source: Authors' own processing

were interviewed. Quotas were set for sex, age (generation) and region. The survey covered the attitudes of 18 to 65-year-olds towards the consumption of meat and meat products. The structure of the sample and the test for comparing the distributions of the sample and the population are shown in Table S1 in electronic supplementary material (ESM; for the ESM see the electronic version).

An exploratory latent class analysis (LCA) was used to segment consumers. LCA is a robust parallel to the factor analysis method, appropriate for dichotomous variables. It is a multivariate method for identifying categorical latent variables using a set of categorical manifest variables. Paul Lazarsfeld (Lazarsfeld and Henry 1968) described the basic idea of LCA. Latent class models are based on the principle of local independence, whereby the algorithm divides the population into subgroups so that the dependencies between the variables disappear (McCutcheon 1987). The particular structure of the self-reported answers is determined exclusively by the unobserved variable (McCutcheon 1987).

Our study is based on the poLCA algorithm in the R package (Linzer and Lewis 2011) linked to IBM SPSS (version 27). The algorithm processed the nineteen input variables (Table 1) iterative, manually changing the

number of latent classes. Seventy iterations ensured stable results. The calculation started with one latent class and continued up to five latent classes. The association of the manifest variables and thus the significance of LCA was tested by comparing the likelihood ratio chi-square (LR/Deviance) with the residual degrees of freedom (Residual df). All tested variants showed interdependence of the manifest variables. The criteria for determining the optimal number of classes were the Bayesian information criterion (BIC) and the Akaike information criterion (AIC), as well as the interpretation logic.

A subsequent analysis tested the association between segmentation and consumption of beef, pork and chicken (1 = I eat it frequently, 2 = I eat it but consciously reduce consumption, 3 = I used to eat, I no longer eat, 4 = I have never eaten it). A one-way analysis of variance (ANOVA) analysed the differentiation of the means of the observed cardinal variable between segments. A subsequent Tukey HSD (honestly significant difference) posthoc test revealed differences between respondents' specific categories (segments) (Peck et al. 2016). The advantages of the Tukey method are that it tests all pairwise differences, it is simple to compute, and reduces the probability of making

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a type I error. It is also robust to unequal group sample sizes. Its chief disadvantages are that it is less powerful than some other tests and is not designed to test complex comparisons. (McHugh 2011). ANOVA was only used for the variable 'age'.

The association between two nominal variables was tested using the Pearson chi-square test. Cramer's  $V$  and Goodman-Kruskal lambda quantify the strength of the association (Peck et al. 2016). Tests were adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction [IBM SPSS (version 27)].

## RESULTS AND DISCUSSION

A total of 1 021 respondents participated in the survey. However, the LCA was applied just for 992 meat consumers (Table 2). The remaining 29 respondents do not consume meat. The likelihood of agreeing and disagreeing with the criteria for evaluating meat and meat products is shown in Table 3.

Three latent classes seem to be optimal. The difference in BIC between the model with two and three latent classes is positive, suggesting that only two latent

classes are optimal. However, the AIC index decreased further, and the BIC difference between the models with two and three latent classes is small. Moreover, the model with three latent classes seems to be more logical. Table 3 shows the probability of agreeing or disagreeing with the criteria to buy meat and meat products.

The first class of respondents, 'quality-concerned' (39.3% of  $N = 992$ ), is not very interested in the trustworthy origin of the products, but rather in a favourable price, easy preparation, good quality, freshness, appearance, and taste. These respondents do not make their choices based on the environmental friendliness of the products or the animal welfare. The composition of the products is also not considered by the first group of respondents in their purchasing decisions. Consumers in the first group are also not very interested in the content of salts, water, fat, additives, muscle fibres or offal. These do not consider consumer tests. Credence attributes are, therefore, not the primary criterion by which these respondents define good meat and good meat products. The respondents decide based on subjective visual and experiential attributes in their preference for freshness.

Table 2. Comparison of multiple variants of the number of latent classes (poLCA optimisation)

Characteristics	1 latent class	2 latent classes	3 latent classes (optimum)	4 latent classes	5 latent classes
Number of cases	992	992	992	992	992
Number of complete cases	992	992	992	992	992
Number of parameters estimated	19	39	59	79	99
Residual $df$	973	953	933	913	893
Maximum log-likelihood	-8 799.179	-8 636.752	-8 580.094	-8 538.030	-8 507.500
AIC(1)	17 636.357	17 351.505	17 278.188	17 234.059	17 213.001
BIC(1)	17 729.452	17 542.594	17 567.272	17 621.137	17 698.073
LR/Deviance(1)	5 018.510	4 693.658	4 580.342	4 496.212	4 435.154
Chi-squared(1)	119 249.949	92 059.915	101 944.070	73 905.511	75 329.193
Number of repetitions	70	70	70	70	70
<b>Diagnostics</b>					
$2 \times$ Residual $df$	1 946	1 906	1 866	1 826	1 786
LR/Deviance(1)	5 018.5	4 693.7	4 580.3	4 496.2	4 435.2
BIC difference	–	–186.86	24.68	53.87	76.94
AIC difference	–	–284.85	–73.32	–44.13	–21.06

The association of the manifest variables and thus the significance of LCA was tested by comparing the likelihood ratio chi-square (LR/Deviance) with the residual degrees of freedom (Residual  $df$ ); all tested variants showed interdependence of the manifest variables; the criteria for determining the optimal number of classes were the Bayesian information criterion (BIC) and the Akaike information criterion (AIC), as well as the interpretation logic

Source: Authors' own processing in IBM SPSS Statistics software (version 27), poLCA extension

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Table 3. Probability of agreement and disagreement with the criteria for evaluating meat and meat products ( $N = 992$ )

Variable	Class	Probabilities		Variable	Class	Probabilities	
		no	yes			no	yes
Credible origin of the product (country of rearing, production)	1	0.810	0.190	Salt content	1	0.969	0.031
	2	0.506	0.494		2	0.800	0.200
	3	0.849	0.151		3	0.613	0.387
Price	1	0.563	0.437	Freshness	1	0.213	0.787
	2	0.893	0.107		2	0.347	0.653
	3	0.799	0.201		3	0.273	0.727
Easy preparation for eating	1	0.872	0.128	Additives (preservatives, dyes, stabilizers, etc.)	1	0.810	0.190
	2	0.977	0.023		2	0.343	0.657
	3	1.000	0.000		3	0.389	0.611
Quality	1	0.412	0.588	Appearance (colour, smell, etc.)	1	0.426	0.574
	2	0.624	0.376		2	0.712	0.288
	3	0.512	0.488		3	0.689	0.311
Taste	1	0.287	0.713	Meat content (muscle fibre vs. fat and other ingredients)	1	0.869	0.131
	2	0.744	0.256		2	0.783	0.217
	3	0.597	0.403		3	0.569	0.431
Environmentally friendly production	1	0.985	0.015	Consumer test results	1	0.978	0.022
	2	0.848	0.152		2	0.940	0.060
	3	1.000	0.000		3	0.961	0.039
Animal welfare (breeding, slaughterhouses, etc.)	1	0.927	0.073	Organic meat	1	1.000	0.000
	2	0.610	0.390		2	0.872	0.128
	3	0.949	0.051		3	0.996	0.004
Trusted brand/manufacturer	1	0.770	0.230	Fat content	1	0.924	0.076
	2	0.782	0.218		2	0.927	0.073
	3	0.963	0.037		3	0.781	0.219
Credibility of the trader	1	0.825	0.175	Gut contents	1	0.928	0.072
	2	0.789	0.211		2	0.973	0.027
	3	0.914	0.086		3	0.885	0.115
Water content	1	0.852	0.148				
	2	0.791	0.209				
	3	0.541	0.459				

Class 1 – quality-concerned consumers; Class 2 – self-conscious consumers; Class 3 – health-conscious consumers  
 Source: Authors' own processing in IBM SPSS Statistics software (version 27), poLCA extension

The second class of respondents, 'self-conscious' (34.7% of  $N = 992$ ), value credence attributes when choosing meat and meat products. Compared to the other groups, they attach more importance to the trustworthy origin of the product and the trader, the environmental friendliness of the production and the animal welfare, the content of additives and organic quality. In contrast, these respondents do not decide primarily based on price, ease of preparation, taste, water, salt

and fat content, offal content and appearance. Rather, they focus on the history of the product and the producer. Like the other groups, the second group considers freshness an important criterion when buying meat and meat products. However, like the other groups, they do not base their choice on consumer tests.

The third class of respondents, 'health-conscious' (26.0% of  $N = 992$ ), care little about the trustworthiness of the origin of products, producers or traders or the



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ease of preparation. This group of respondents is not interested in the environmental friendliness of production, animal welfare. On the contrary, they prefer fresh products without additives, little water, salt and fat and a high proportion of lean meat. Thus, objectively perceived quality factors are important for the third group of respondents when choosing meat and meat products. Despite their preferences regarding product composition, these respondents do not consider organic products as the main criterion for good meat or meat products. The 'organic' label is something extra over other quality attributes. Meat and meat products with the label 'organic' are more expensive than other products, and the common consumer only needs the declared lower content of chemical additives in meat products to consider them good.

Analysis of variance shows a difference in age between at least two groups. The Tukey HSD test showed a significant difference between segment 3 (health-conscious consumers) and the first two segments (Table 4,  $P$ -value = 0.012, special subset for segment 3 while segments 1 and 2 are homogeneous). The respondents in segment 3 are significantly older than the first two groups. The third segment values objective quality, preferring low water, salt and fat content without chemical additives with high meat content. This is probably related to the health complications of the older population, who pay more attention to the composition of the food they consume (Vukasovič 2014).

Although there are some significant associations between segments and socio-demographic characteristics of respondents, Cramer's  $V$  and Lambda indicate their strength is rather weak (Table 5). The sex of the

respondents is related to their segmentation. In segment 1 (quality-concerned consumers), the proportion of men (55.9%) is significantly higher than that of women (44.1%), while in segment 2 (self-conscious consumers), the proportion of women (53.8%) is significantly higher than that of men (46.2%). In segment 3 (health-conscious consumers), there are no significant differences in the sex structure.

The number of children of the respondents is related to their segmentation. In segment 1 (quality-concerned consumers), there is a significant proportion of childless respondents (63.3%). In contrast, segment 2 (self-conscious consumers) has a significant proportion of respondents with two or more children (30.6%) compared to the other segments. In segment 3 (health-conscious consumers), 59.8% of respondents are childless, 20.8% of respondents have one child, and 19.3% have two or more children, which is similar to the average for the population. The number of children is also related to children under 18 in the respondent's household. The relationship between children under 18 and the respondent's segment assignment is statistically significant at the 0.1 significance level. Household size is also related to consumer segmentation. Segment 1 (quality-concerned consumers) is characterised by a higher proportion of households with two members (27.6%) than the other segments. Segment 2 (self-conscious consumers) has a higher proportion of multi-member households with five or more members (18.3%) than the other segments.

No significant relationship was found between occupation category and consumer segmentation. Moreover, the contingency analysis revealed no sig-

Table 4. Age differences between consumer segments – Analysis of variance

Variance	Sum of squares	df	Mean square	<i>F</i>	<i>P</i> -value
Between groups	1 513.183	2	756.591	4.415	0.012
Within groups	169 467.026	989	171.352	–	–
Total	170 980.209	991	–	–	–
Test of homogeneity of variance: Levene statistic = 1.202, significance = 0.301					
Post-hoc test	Latent class/segment	<i>N</i>	subset for alpha = 0.05		
			1	2	
Tukey honestly significant difference (HSD) test	segment 1 (quality-concerned)	406	41.73	–	
	segment 2 (self-conscious)	327	41.11	–	
	segment 3 (health-conscious)	259	–	44.20	
	<i>P</i> -value	–	0.824	1.000	

Means for groups in homogeneous subsets are displayed; the group sizes are unequal; the harmonic mean of the group sizes is used; type I error levels are not guaranteed

Source: Authors' own processing

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Table 5. Associations between segments and socio-demographic characteristics of respondents

Categorical variable	Pearson Chi-square	P-value	Cramer's V/Lambda	
Sex	7.221	0.027**	0.085	0.026
Number of children	18.894	0.001***	0.098	0.025
Household size	19.926	0.011**	0.100	0.029
Presence of children under 18	5.002	0.082*	0.077	0.010
Occupation status	7.252	0.701	–	–
Region	34.113	0.132	–	–
Municipality size	9.455	0.305	–	–
Income	13.045	0.110	–	–

\*, \*\*, \*\*\*Significance levels at  $\alpha = 0.1$ ,  $\alpha = 0.05$  and  $\alpha = 0.01$ , respectively; Cramer's V and Lambda were calculated only for statistically significant categorical variables

Source: Authors' own processing

nificant relationship between the region and consumer segmentation or municipality size and consumer segmentation. There was also no correlation between respondents' income and their consumer segmentation (Table 5).

In terms of individual meat types, there is a significant association between declared beef consumption and consumer segmentation (Table 6). Compared to the other segments, segment 2 (self-conscious consumers) has a significantly higher proportion of consumers who eat beef but limit their beef consumption (16.5%). Declared pork consumption is also related to consumer segmentation. Compared to the other segments, segment 1 (quality-concerned consumers) is characterised by a higher proportion of consumers who habitually consume pork (89.4 %), while segment 2 (self-conscious consumers) is characterised by a reduction in consumption. Segment 2 has a higher proportion of respondents who eat pork but limit their consumption (14.7%) and consumers who have stopped eating pork (5.5%).

Chicken is a generally popular meat type across consumer segments, and no association was found between declared chicken consumption and consumer segmentation.

Consumers in segment 1 want to enjoy meat and meat products at a reasonable price, typical for men, singles and two-person households without children (Table 7). Discounter buyers buy almost exclusively self-service counter meat and pay less attention to quality as their focus is most probably on price (Pirsich et al. 2020). Given the demand for a good price, consumers in segment 1 are more likely than other segments to opt for pork. Like the other segments, consumers in segment 1 also prefer chicken. Beef is consumed less often due to its higher price. Price alone is not a decisive factor for segment 1 when buying meat and meat products. Consumers compare price with subjective quality criteria (ease of preparation, freshness, appearance and taste), in line with previously published results. The preference for quality over price is typical of developed countries with saturated demand (Henchion et al. 2014).

Segment 2 is characterised by a preference for credence attributes (trustworthy origin of the product and the trader, environmental friendliness of production and good treatment of animals, additive content and organic quality) and a reduction in red meat consumption. This consumption behaviour is typical for women, respondents with two or more children and households

Table 6. Association between segments and declared consumption of beef, pork and chicken

Categorical variable	Pearson Chi-square	P-value	Cramer's V/Lambda	
Beef	14.141	0.028**	0.084	0.025
Pork	18.663	0.005***	0.097	0.005
Chicken meat	10.463	0.106	–	–

\*\*, \*\*\*Significance levels at  $\alpha = 0.05$  and  $\alpha = 0.01$ , respectively; Cramer's V and Lambda were calculated only for statistically significant categorical variables

Source: Authors' own processing

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Table 7. Specific features of consumer segments compared with each other

Characteristics	Segment 1 (quality-concerned consumers)	Segment 2 (self-conscious consumers)	Segment 3 (health-conscious consumers)
Product attributes	– favourable price and subjectively perceived quality – easy preparation, freshness, appearance and taste	– trustworthy product and trader origin, eco-friendly production and good treatment of animals, additive content and organic quality	– objectively perceived quality – fresh, additive-free products with low water, salt and fat content and high meat content
Socio-demographic characteristics	– higher proportion of men – higher proportion of respondents without children – higher proportion of households with two members	– higher proportion of women – higher proportion of respondents with two or more children – higher proportion of multi-person households with five or more members	– older consumers
Preference for meat and meat products	– higher proportion of consumers who routinely consume pork	– higher proportion of consumers who eat beef but limit their beef consumption – higher proportion of consumers who eat pork but reduce their consumption and consumers who have stopped eating pork	– no preference as to the type of meat and meat products

Source: Authors' own processing

with five or more members. Compared to segment 1, family decision-making plays an important role in considering children's nutrition.

Meat consumption is often associated with negative environmental and human health impacts (Tilman and Clark 2014). There is societal pressure to consume less red meat and prefer plant-based foods, as increasing consumption of red meat threatens the environment and human health (de Boer et al. 2017; Milford et al. 2019). Consumers perceive animal welfare as a sensitive issue (Grunert 2006). Consumers are interested in animal production, but there is only a weak relationship between the negative image of meat production and their shopping behaviour (Ngapo et al. 2007).

The results of the Czech case study are in line with European trends. Although meat consumption in Europe is still expected to grow slightly in the next decade, the type of meat its consumers are going for is shifting; beef is out of favour, whereas poultry is rising. Influenced by concerns about health, animal welfare, and the environment, more and more consumers are either reducing their meat consumption or eliminating meat from their diet altogether. The previous

study from Switzerland (Götze and Brunner 2021) revealed six distinct clusters: the environmentally and health-oriented meat-eaters (16.8% of the survey participants), the uncompromising meat-eaters (18.1%), the moderate meat-eaters who are willing to replace meat (15.9%), the indifferent but moderate meat-eaters (21.2%), the environmentally-conscious regular meat-eaters (13.7%) and the environmentally and health-conscious meat avoiders (14.4%). The study confirms European trend towards the growing segment of flexitarians.

Nearly 30% of Europeans intend to eat less meat in the next five years, whereas those who expect to eat more are just a small minority. Although the current meat consumption is in no way sustainable in the long run, most Europeans are not willing to cut back on meat consumption at all. Despite the climate debate getting more intense, environmental concerns are not at the top of the list of reasons why European consumers reduce their meat consumption. The most important motivation to cut down the meat intake is negative health effects, followed by animal welfare and the price of meat (van de Pas 2020).



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## CONCLUSION

The segmentation of consumers according to their preferences revealed three different categories of meat consumers. While supermarket chains mainly target price and price competition is particularly prevalent in large cities, it is important to recognise a relatively significant consumer segment that accounts for about one-third of meat consumers. This segment values credence attributes in its decision-making and is interested in the product's origin, the environmental friendliness of the production and the animal welfare, the additive content and the organic quality. Credence attributes cannot be recognised visually or through experience, and producers or traders need to communicate credence attributes, e.g. through declarations on the packaging (e.g. similar to the Beter Leven logo in the Netherlands, the Étiquette Bien-Être Animal in France or the RSPCA Assured Label in the UK) or through certificates.

An interesting finding is that the segments do not differ by occupation status, region, community size or income level of the respondents. Much more important are the differences between generations, which were evident in respondents' average age and household composition. The criteria by which consumers decide to buy meat and meat products tend to depend on the typical values of the consumer generations. Older consumers focus on visual attributes, with perceived health values being more important than the younger generation, which are more interested in the history of the product and the environmental friendliness of production and good treatment of animals. A person's values also change with the family life cycle stage. While childless and coupled consumers focus more on value for money and experience attributes (ease of preparation, freshness, appearance and taste), consumer values and preferences change towards value attributes when children join the family. Therefore, producers and retailers should better target their marketing activities and communication to each segment.

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