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Attitudes and beliefs of Eastern European meat consumers – a review

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Abstract. Eastern European consumers are traditional meat eaters who are still not looking forward in order to substitute their traditional meat-based dishes with meat analogues or their substitutes. In general, vegetarianism is in its infancy if we do not take into account Lenten fasting, the period of the year when in Orthodox countries of Eastern Europe one can find food not containing meat, dairy and eggs, widely available. Chicken meat is the most frequently consumed type of meat, and it is preferred because it is easy to prepare. Eastern European meat consumers believe that meat from castrated pigs is of better quality, and one third of them is indifferent towards animal welfare issues. The highest proportion of Eastern European consumers (42.9%) believes that game meat has many health benefits, is rich in proteins and is more organic than other types of meat. However, two thirds of Eastern European consumers eat game meat less than once a year. Differences in attitudes and beliefs of Eastern European meat consumers compared to their Western European equivalents are evident.

1. Introduction

Nothing is the same as it was back in the 1990s when it comes to European meat consumption and production inclinations. We were able to observe the increase in production of pig and poultry meat [1] while acknowledging the decrease in lamb and beef production [2]. Most likely, the major reason that has chased away European consumers from beef meat is their apprehension towards environmental sustainability of its production, as is the case in Japan [3] and Brazil [4]. Health concerns are also an important issue for meat consumers [5], followed by the rising interest in societal benefits and in more “ethical” meat production methods [6-8]. Attitudes and beliefs of European meat consumers are important to all stakeholders in the food (meat) chain, and not surprisingly, they have already been investigated on numerous occasions and explored from different aspects in the past. What is surprising is the fact that, although European by name [9-11], these investigations have excluded (almost by default) meat consumers from Eastern European countries. Because of this, until recently, attitudes and beliefs of Eastern European meat consumers remained unknown to scientific readers, the research community and public in general. Therefore, the purpose of this review was to collect, categorize and



summarize all the recently published (relevant) data that will help to make a portrait of an average Eastern European meat consumer.

2. Chicken Meat Consumers

On average, only 2.6% of Eastern European consumers avoid consumption of chicken meat, while the majority (51.7%) and more than a half of them eat it on a fortnightly basis. One fifth (19.8%) eats chicken only once a week, while almost equal percentages of consumers do so once a month (13%) or on a daily basis (12.9%) (Table 1). Not surprisingly, and because Islam is today the largest religion in Bosnia and Herzegovina and is adhered to by half of the nation's population, Bosniaks are the most avid chicken meat consumers in the whole of Eastern Europe. More than a third of Bosniaks (34.4%) eat chicken on a daily basis. The second largest proportion of any country population (21.7%) that are daily chicken eaters was observed in Serbia, not because of religious but because of economic motives, since chicken meat is the most affordable type of meat available on Serbian meat markets. Overall, Hungarian consumers seem to be most reluctant chicken meat consumers, since 89.8% of them eat it only on a fortnightly or even monthly basis (Table 1). On the other hand, although Bulgarian consumers are not among the most frequent chicken meat consumers in Eastern Europe, they seem to have the highest average consumption of chicken meat in households per month, in the range of 6-9 kg, and chicken meat products in the range 3-6 kg [12].

The age group of 50 to 64-year-old Eastern European consumers eats the most chicken meat and chicken meat products, in the range of 3-6 kg per month. Monthly, female consumers seem to eat less than males, since the highest percentage of females consume chicken meat and chicken meat products in the range from 500 g to 3 kg, while the highest number of male respondents consume chicken meat in the range 3-6 kg and chicken meat products in the range 500 g to 3 kg [12].

The most important quality attribute of chicken meat for the Eastern European consumers is its visual appearance, namely freshness and colour as the leading quality attributes [13]. This is why researchers and industry are exploring novel analytical methods for the evaluation of chicken meat colour [14]. When it comes to retailing chicken meat, Eastern European consumers believe the three most important characteristics are temperature at point of sale (28.35%), shelf illumination (22.6%) and product placement (14.7%) [13].

Most of the Eastern European consumers (39.1%) prefer chicken meat because it is easy to prepare and since it can easily be accompanied by many side dishes. These consumers are mostly female (64.3%), and chicken meat consumption is perceived as a good way to show their cooking skills and as ideal for children's diets, so chicken meat forms an important element of their family diet [12]. It was also revealed that the second largest proportion of Eastern European chicken meat consumers (34.5%) are very selective eaters who prefer particular chicken cuts and have particular healthy-diet attitudes [12]. This was best explained by the fact that they are predominantly the working population, which contains more selective and experienced consumers than the younger population, in general [15].

3. Pork Meat Consumers

As an exploratory approximation, we can assume that the largest proportion of the Eastern European consumers eat pork on fortnightly basis (43.3% on average and varying from 19.0% in Moldova to 58.5% in Croatia) with almost equal percentages of them eating pork on a weekly (21.1% on average and varying from 11.3% in Hungary to 29.4% in Poland) or daily (20.3% on average and varying from 8.0% in Hungary to 54.3% in Moldova) basis [16].

Table 1. Demographic profile of the sample and frequencies of meat consumption in Eastern Europe (adopted from [16])

Characteristic	Overall n (%)	B & H (324)	Bulgaria (n=352)	Czech R. (n=284)	Croatia (n=301)	Macedonia (n=285)	Hungary (n=400)	Moldova (n=300)	Poland (n=504)	Romania (n=557)	Serbia (n=678)	Slovakia (n=301)	Slovenia (n=246)	Ukraine (n=750)
Sex														
Male	2457 (44.7)	166 (51.6)	144 (40.9)	197 (38.6)	119 (39.5)	137 (48.1)	224 (56.0)	94 (31.3)	245 (48.6)	277 (49.7)	323 (47.8)	120 (39.9)	109 (45.0)	302 (40.3)
Female	3043 (55.3)	156 (48.4)	208 (59.1)	313 (61.4)	182 (60.5)	148 (51.9)	176 (44.0)	206 (68.7)	259 (51.4)	280 (50.3)	353 (52.2)	181 (60.1)	133 (55.0)	448 (59.7)
Age														
Less than 26	1128 (20.5)	43 (13.3)	27 (7.7)	116 (22.7)	43 (14.3)	67 (23.5)	126 (31.5)	116 (38.7)	115 (22.8)	138 (24.8)	121 (17.9)	47 (15.6)	70 (30.0)	99 (13.2)
26 – 40	1377 (25.1)	68 (21.0)	77 (21.9)	149 (29.2)	84 (27.9)	47 (16.5)	103 (25.8)	99 (33.0)	152 (30.2)	148 (26.6)	167 (24.7)	78 (25.9)	56 (24.0)	149 (19.9)
41 – 60	2117 (38.5)	175 (54.0)	207 (58.8)	130 (25.5)	128 (42.5)	98 (34.4)	135 (33.8)	52 (17.3)	152 (30.2)	172 (30.9)	298 (44.0)	128 (42.5)	84 (36.1)	358 (47.7)
Over 60	872 (15.9)	38 (11.7)	41 (11.6)	115 (22.5)	46 (15.3)	73 (25.6)	36 (9.0)	33 (11.0)	85 (16.9)	99 (17.8)	91 (13.4)	48 (15.9)	23 (9.9)	144 (19.2)
Education														
Elementary	296 (5.4)	29 (9.2)	15 (4.3)	12 (2.4)	34 (11.3)	21 (7.4)	4 (1.0)	11 (3.7)	5 (1.0)	58 (10.4)	69 (10.3)	16 (5.3)	14 (5.8)	8 (1.1)
Higher	2308 (42.1)	215 (68.5)	190 (54.0)	280 (54.9)	102 (33.9)	151 (53.2)	160 (40.0)	136 (45.5)	132 (26.2)	247 (44.3)	416 (62.4)	139 (46.3)	87 (36.3)	53 (7.1)
University	2874 (52.5)	70 (22.3)	147 (41.8)	218 (42.7)	165 (54.8)	112 (39.4)	236 (59.0)	152 (50.8)	367 (72.8)	252 (45.2)	182 (27.3)	145 (48.3)	139 (57.9)	689 (91.9)
Household members														
One	319 (5.9)	19 (6.1)	17 (4.9)	59 (11.6)	18 (6.0)	12 (4.2)	5 (1.3)	16 (5.4)	40 (7.9)	43 (7.7)	33 (5.1)	23 (7.7)	11 (4.6)	23 (3.2)
Two – three	2611 (48.1)	157 (50.0)	240 (68.6)	283 (55.5)	132 (43.9)	69 (24.3)	124 (31.1)	119 (40.1)	179 (35.5)	337 (60.5)	298 (46.3)	145 (48.3)	96 (40.0)	432 (59.7)
Four – five	2212 (40.8)	138 (43.9)	93 (26.6)	147 (28.8)	128 (42.5)	177 (62.3)	236 (59.1)	135 (45.5)	241 (47.8)	167 (30.0)	279 (43.4)	107 (35.7)	104 (43.3)	260 (35.9)
Over five	281 (5.2)	0 (0.0)	0 (0.0)	21 (4.1)	23 (7.6)	26 (9.2)	34 (8.5)	27 (9.1)	44 (8.7)	10 (1.8)	33 (5.1)	25 (8.3)	29 (12.1)	9 (1.2)
Growing place														
Rural	3279 (59.6)	313 (96.6)	120 (34.1)	295 (57.8)	186 (61.8)	122 (42.8)	241 (60.3)	171 (57.0)	306 (60.7)	290 (52.1)	545 (80.4)	171 (57.0)	196 (81.7)	323 (43.1)
Urban	2221 (40.4)	11 (3.4)	232 (65.9)	215 (42.2)	115 (38.2)	163 (57.2)	159 (39.8)	129 (43.0)	198 (39.3)	267 (47.9)	133 (19.6)	129 (43.0)	44 (18.3)	426 (56.9)
Frequency of pork consum.														
Never	280 (5.1)	23 (7.3)	26 (7.4)	24 (4.7)	7 (2.3)	12 (4.2)	7 (1.8)	13 (4.3)	43 (8.5)	41 (7.4)	54 (8.1)	10 (3.3)	9 (3.7)	11 (1.5)
Daily	1110 (20.3)	115 (36.3)	42 (12.0)	74 (14.5)	36 (12.0)	43 (15.1)	32 (8.0)	163 (54.3)	128 (25.4)	100 (18.0)	199 (29.7)	43 (14.3)	32 (13.1)	103 (14.1)
Weekly	1153 (21.1)	74 (23.3)	65 (18.6)	109 (21.4)	40 (13.3)	63 (22.1)	45 (11.3)	55 (18.3)	148 (29.4)	146 (26.2)	121 (18.1)	72 (24.0)	33 (13.5)	182 (24.9)
Fortnightly	2368 (43.3)	83 (26.2)	200 (57.1)	286 (56.1)	176 (58.5)	131 (46.0)	220 (55.0)	57 (19.0)	165 (32.7)	235 (42.2)	179 (26.7)	150 (50.0)	139 (57.0)	347 (47.4)
Monthly	559 (10.2)	22 (6.9)	17 (4.9)	17 (3.3)	42 (14.0)	36 (12.6)	96 (24.0)	12 (4.0)	20 (4.0)	35 (6.3)	117 (17.5)	25 (8.3)	31 (12.7)	89 (12.2)
Frequency of chicken consum.														
Never	140 (2.6)	19 (6.1)	6 (1.7)	13 (2.6)	6 (2.0)	7 (2.5)	5 (1.3)	5 (1.7)	17 (3.4)	20 (3.6)	35 (5.3)	5 (1.7)	1 (0.4)	1 (0.1)
Daily	704 (12.9)	107 (34.4)	40 (11.4)	54 (10.6)	14 (4.7)	30 (10.5)	15 (3.8)	52 (17.3)	70 (13.9)	56 (10.1)	144 (21.7)	20 (6.7)	24 (9.9)	78 (10.6)
Weekly	1084 (19.8)	74 (23.8)	93 (26.4)	90 (17.7)	13 (4.3)	73 (25.6)	21 (5.3)	90 (30.0)	123 (24.4)	69 (12.4)	183 (27.5)	49 (16.3)	15 (6.2)	191 (25.8)
Fortnightly	2828 (51.7)	82 (26.4)	152 (43.2)	334 (65.6)	223 (74.1)	147 (51.6)	270 (67.5)	110 (36.7)	189 (37.5)	304 (54.6)	228 (34.3)	204 (68.0)	190 (78.5)	395 (53.5)
Monthly	709 (13)	29 (9.3)	61 (17.3)	18 (3.5)	45 (15.0)	28 (9.8)	89 (22.3)	43 (14.3)	105 (20.8)	108 (19.4)	75 (11.3)	22 (7.3)	12 (5.0)	74 (10.0)
Frequency of lamb consum.														
Never	2490 (46.3)	61 (20.1)	109 (31.0)	329 (64.5)	95 (31.6)	118 (41.4)	192 (48.0)	133 (44.3)	252 (50.0)	239 (42.9)	228 (34.7)	187 (62.3)	148 (62.2)	399 (59)
Daily	2134 (39.6)	101 (33.3)	205 (58.2)	168 (32.9)	163 (54.2)	113 (39.6)	186 (46.5)	148 (49.3)	168 (33.3)	243 (43.6)	231 (35.2)	94 (31.3)	84 (35.3)	230 (34)
Weekly	420 (7.8)	59 (19.5)	37 (10.5)	8 (1.6)	22 (7.3)	34 (11.9)	15 (3.8)	13 (4.3)	57 (11.3)	41 (7.4)	94 (14.3)	16 (5.3)	5 (2.1)	19 (2.8)
Fortnightly	235 (4.4)	39 (12.9)	1 (0.3)	5 (1.0)	21 (7.0)	14 (4.9)	7 (1.8)	3 (1.0)	24 (4.8)	30 (5.4)	61 (9.3)	2 (0.7)	1 (0.4)	27 (4.0)
Monthly	104 (1.9)	43 (14.2)	0 (0.0)	0 (0.0)	0 (0.0)	6 (2.1)	0 (0.0)	3 (1.0)	3 (0.6)	4 (0.7)	43 (6.5)	1 (0.3)	0 (0.0)	1 (0.1)
Frequency of beef consum.														
Never	943 (17.4)	56 (18.4)	79 (22.4)	42 (8.3)	35 (11.6)	57 (20.0)	47 (11.8)	73 (24.3)	102 (20.2)	130 (23.3)	138 (21.4)	31 (10.4)	7 (2.9)	146 (20.6)
Daily	2460 (45.5)	134 (43.9)	208 (59.1)	211 (41.5)	125 (41.5)	75 (26.3)	266 (66.5)	172 (57.3)	205 (40.3)	217 (39.0)	289 (44.7)	160 (53.5)	45 (18.6)	355 (50.1)
Weekly	1072 (19.8)	55 (18.0)	56 (15.9)	148 (29.1)	55 (18.3)	57 (20.0)	51 (12.8)	21 (7.0)	114 (22.6)	117 (21.0)	124 (19.2)	65 (21.7)	60 (24.8)	149 (21)
Fortnightly	805 (14.9)	31 (10.2)	9 (2.6)	106 (20.8)	79 (26.2)	81 (28.4)	34 (8.5)	27 (9.0)	77 (15.3)	91 (16.3)	60 (9.3)	41 (13.7)	125 (51.7)	44 (6.2)
Monthly	128 (2.4)	29 (9.5)	0 (0.0)	2 (0.4)	7 (2.3)	15 (5.3)	2 (0.5)	7 (2.3)	8 (1.6)	2 (0.4)	35 (5.4)	2 (0.7)	5 (2.1)	14 (2.0)

Eastern European pig meat consumers have positive to neutral preferences for meat from castrated pigs, and piglet castration is not considered an issue that needs to be dealt with in this part of Europe [16]. Reasons can be found in the belief that meat from castrated pigs is of better quality. At the same time, they are ambivalent about the statement that meat from castrated pigs is leaner, apart from the pig meat consumers from Bulgaria who think otherwise. On average, Eastern European consumers are indefinite about whether the meat from castrated pigs is more expensive than that from non-castrates, while they are more willing to pay for meat from physically castrated pigs [16] than an average Western European consumer [17].

Regardless of the geographical or demographical determinants, the colour of pork meat remains the most important quality attribute when it comes to the consumers and their preferences [18], and this consequently provoked research into finding novel techniques in pork and pork meat products' colour assessment [19].

4. Game Meat Consumers

Only one third of Eastern European consumers eat game meat at least once a year. The only exception is Bulgaria, where game meat is consumed at least once a month by 79.6% of the consumers [20]. One thing is also very certain, and it is that in this part of Europe women eat less game meat than do men. Similar trends are observed in other parts of the world like in the USA [21] or Norway [22]. The highest proportion of Eastern European consumers (42.9%) believes that game meat has many health benefits, is rich in proteins and is more organic than other types of meat [20]. This is in sharp contrast with the situation in Africa or Australia for example, where despite the great potential of wild game meat, consumers are ill-informed regarding the positive attributes of game meat [23, 24]. The second largest proportion of Eastern European consumers (32.8%) believe that game meat is low in fat and cholesterol, but that it is not easily available for purchase; it is, therefore, considered only as a seasonal commodity. Almost a quarter of Eastern European consumers (24.3%), who are mostly youngsters below 24 years of age, believe that game meat is more expensive compared to other types of meat and that sensory attributes of game meat (taste, odour and colour) are associated with wild species [20].

Almost a half (49.2%) of Eastern European consumers eat game meat mainly on social occasions, and because it is easily accompanied by many side dishes. Nearly 40% of them, who are mainly females and youngsters below 24 years of age, eat game meat mainly because of the eating enjoyment and because it tastes great. Only a fraction above one tenth of the consumers (11.8%) consider game meat a part of their country's culinary tradition [20].

5. Animal Welfare Attitudes and Beliefs

In terms of animal welfare attitudes and beliefs, three distinctive, but almost identical in size, groups of Eastern European consumers can be identified. The first group (37%) consists of the consumers who are concerned about animal welfare, and they believe it is possible to achieve. However, the second group (32%) is the consumers who are indifferent towards animal welfare. The third group (31%) of Eastern European consumers is concerned about animal welfare, but they believe it is difficult to achieve.

6. Conclusions

Differences in attitudes and beliefs of Eastern European meat consumers compared to their Western European counterparts are evident. Meat analogues and substitutes are not even being considered yet, since the consumers are pretty satisfied eating their traditional meat-based dishes. Animal welfare, environmental and sustainability issues are less of a concern because of the lower incomes in the Eastern compared to the Western part of Europe. The health and wellness food market in Eastern Europe is under development and growing, but still passing through a period of tests and looking for some stabilization.

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