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Towards Sustainable Eating Habits of Generation Z: Perception of and Willingness to Pay for Plant-Based Meat Alternatives

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Abstract: Within the food sector, there is a growing embrace of meat substitutes as a more sustainable alternative to meat, driven by ethical, environmental, and health considerations. This study aims to explore consumer behavior and willingness to pay (WTP) for plant-based meat alternatives (PBMAs), illustrated by the example of vegan burger patties. The sample of the study (n = 433) consists of young consumers roughly below 30 years of age, known as Generation Z (Gen Z). The study aims to (1) assess of the importance of PBMA attributes to Gen Z, and (2) approximate Gen Z's willingness to pay for specific PBMA attribute levels. A choice-based conjoint analysis was used to assess Gen Z's preferences for meat substitutes. The findings indicate that the most crucial PBMA attribute is origin, followed by price and the primary vegan ingredient. Notably, Gen Z values domestic and EU-sourced products positively, contrasting with the negative perception of third-country imports. Organic production is associated with a positive part-worth utility, whereas the attribute fat content has almost no impact. Consequently, WTP is approximated to be the highest for products of domestic origin compared to the significant discount required for non-EU origin. All other attribute levels have a much lower impact. Despite sociodemographic variables, the respondents' eating habits (vegan, vegetarian, etc.) most significantly influence the approximation of the importance of some of the PBMA attributes, in particular price and primary ingredient.

Keywords: plant-based food; consumer behavior; choice-based conjoint analysis; discrete choice modeling; novel food; willingness to pay

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1. Introduction

The way we consume food influences our health, but also has a huge impact on the future of our society and the whole planet [1]. However, more and more consumers are questioning our actual eating habits, in particular the way we consume meat [2]. The proportion of vegans and vegetarians has been steadily growing. In 2018, around 8% of the Austrian population was considered to be vegan or vegetarian [3]. In 2023, this proportion is assumed to be above 10% [4].

A significant reduction in global livestock is an imperative action to move towards a more sustainable food supply chain and to reach the climate targets of The Paris Agreement [5]. Food production is assumed to be responsible for 20 to 30% of overall global gas emissions (GGE) [6]. Meat and meat related products (such as milk) are the largest GGE driving forces [7], with a 57% share of GGE–besides using 83% of agrarian surface. Simultaneously, the meat sector only delivers 37% of protein and 18% of calories [8]. These well-known facts demonstrate that our eating habits have to change. One alternative that could reduce the environmental impact of meat production would be, for instance, integrated crop-livestock systems that increase biodiversity [9,10]. Another option would be an increase in plant-based eating behavior, as the planetary healthy diet developed by the Lancet Commission recommends [1]. However, it is noteworthy that plant-based

meat alternatives are quite often ultra-processed foods, which are related to an increase in non-communicable diseases worldwide [11,12].

Meat production is considered to be one of the core drivers of the global climate crisis [13]. As demand for meat is still rising on a global level, factory farming and all the negative consequences related to it have been increasing, too [13]. Thereby, the production of beef is considered to be the food sector with the worst GGE balance, in particular because of methane, land consumption, and water needs [14]. For instance, a US study assumed that 46 to 72% of GGE in 2020 could have been saved if all calories and proteins from beef had been replaced with plant-based ingredients [15]. A switch to grass-fed beef production, which is considered to be more environmentally friendly compared to grain-finishing feedlot systems, is not really a viable option if current consumption levels are to be maintained. Hayek and Garret [16] found that the existing pastureland grass resource in the US could only support 27% of the current US beef supply. They also state that "... a nationwide shift to exclusively grass-fed beef would require increasing the national cattle herd from 77 to 100 million cattle, an increase of 30%", thus leading to higher methane emissions. Saget et al. [17] estimate, with life cycle assessment, that plant-based patties are associated with 85% lower climate change and approx. 90% lower marine eutrophication than grass-fed beef patties from Brazil or Ireland.

If the actual global nutrition trends continue as they have in the past, methane and nitrous oxide emissions (two highly effective greenhouse gases) might double [18]. Meanwhile, the meat market has doubled in the last two decades due to a growing global population and economic growth. It is estimated that global meat consumption amounted to about 360 million tons in 2018 [19]. While meat consumption rises significantly in countries such as China (which has a huge impact on the global meat production sector) [20], meat consumption per capita stagnates or even goes down in high-income countries (but is, in fact, still at a very high level); for instance, in Austria, meat consumption and production has decreased significantly, a trend which has been observable for years, and amounts to about 90 kg meat consumption per capita (all meat parts included) with a 58 kg eatable share [21]. The global situation can be expected to become even more serious as the global population still grows to reach a level of almost 10 billion people by 2050 [22].

Consumers are more and more concerned about the effects of their nutrition on their own health, on the environment, and the well-being of living beings. Amongst other factors, social media and the growing importance of influencers and famous people has helped to promote the vegan and vegetarian trend [23]. This had also led to growing market shares (an estimated growth rate of around +6% per year from 2019 to 2023 in Germany), increasing demands on retails shelves, and, consequently, an expanded vegan/vegetarian assortment [24]. The challenge for the industry will, therefore, be to develop nutritious, healthy, economic PBMAs that meet the expectations of consumers in view of texture and taste [25]. The increase in consumers' demand for PBMAs is not only caused by people getting more and more worried about global climate change, but is also due to rising prices in the meat production sector and a clear trend towards veganism, vegetarianism, and flexitarianism (where consumers reduce their meat consumption and eat meat much less often) [25]. Although the total market share for meat substitutes is still low at around 1% of the total meat market (USD 14 bn), experts assume that market growth potential is extremely promising with an annual increase of around 10%, which would result in a total market of around USD 140 bn by 2029 [26]. In Europe, the total volume of meat substitutes amounts to about EUR 1.5 bn, and by 2025 the market could grow to reach up to EUR 2.4 bn [27]. Other sources assume a huge market growth for PBMAs in the future, reaching USD 31 bn by 2026 [28]. In Europe, the growth rate in sales of plant-based meat alternatives (PBMAs) amounted to approximately 22% between 2020 and 2022. Meanwhile, conventional meat sales decreased by 8% [29]. All these economic outlooks assume a constant growth of the PBMA market in Austria, where it doubled between 2018 and 2020 from EUR 5.5 million to EUR 9.6 million [4].

On a global scale, patterns of meat consumption vary significantly due to a combination of cultural, geographical, economic, and social factors. From a geographical perspective, historically lower levels of meat consumption in Asia are now reaching levels comparable to those in Europe, even though Hinduism and Buddhism promote vegetarianism. In predominantly Muslim countries, halal meat consumption is common, and in Hindu majority countries beef consumption may be lower, mainly due to religious beliefs. In China, meat should not only express nutritional value but also artistic and sensual attributes, and in Japan, meat consumption is way lower due to Buddhism and a long tradition of eating seafood [30]. Research indicates that meat consumption is declining in some countries, particularly those with higher incomes [31]. However, the decline is not uniform, with some countries still experiencing an increase in meat consumption [32]. In several European countries, a steady decrease in beef and pork consumption, a rise in chicken consumption, and a flat curve for sheep consumption is noticeable [33]. Weinrich [34] noted that taste, eating habits, and convenience are barriers to meat substitute consumption in Germany, the Netherlands, and France. Bryant [35] found that concern for animal welfare is a key driver of meat reduction in Germany. Consumers in France, Germany, and the United Kingdom evaluated pea and algae burgers as less tasty but more environmentally friendly and healthy compared to beef burgers [36]. A systematic review of consumer acceptance of alternative proteins found that plant-based meat alternatives have the highest acceptance levels among protein alternatives, followed by insects and cultured meat. This review identified the following drivers of acceptance: taste, health, familiarity, attitudes, food neophobia, disgust, and social norms [37]. A study in nine European countries investigated the influence of income and education on the consumption of processed meat. Higher education was associated with higher social and environmental awareness, higher health orientation, a preference for fresh and regional food, and lower levels of processed meat consumption. In general, consumers who are not interested in food tend to consume more processed meat [38].

Besides vegans and vegetarians, flexitarians are a remarkable target group for PBMAs. They form a large proportion of the population, their numbers seem to be growing constantly as more and more appropriate meat alternatives are available in food markets [39,40]. Therefore, this study focuses on the acceptance of PBMAs, whereby the study object, burger patties, is a prominent revenue driver in the respective food market, is frequently consumed, and where there are a lot of plant-based alternatives available in supermarkets. There exists also, a valuable body of knowledge with a number of comparable studies using burger patties to investigate consumer behavior in PBMA markets [41–44]. In order to investigate PBMAs, Michel et al. [45] recommended food products which imitate existing meat products (burger patties, chicken nuggets) and where available PBMAs come close to their meat originals. Manufacturing these products is much easier compared to alternatives based on meat products such as steaks. This study intends to deliver valuable information about the main characteristics of the PBMAs influencing the purchase decision of a very specific, young, and future-oriented target group, Generation Z. The eating habits of this generation, those born approximately after 1995, are influenced by concerns about the environment and are driven by health when making food choices [46]. Their attitude towards alternative proteins is influenced by their preference for organic, local, and sustainable foods, which are associated with higher dietary quality [47]. Bogueva and Marinova [48] explored the attitude of Generation Z in Australia towards meat consumption in relation to climate change and alternative proteins. A significant portion of the participants (38%) recognized the environmental impact of livestock production and showed an interest in alternative proteins as a way to mitigate climate change effects. But the rest of participants had a low awareness of food habits as a major contributor to climate change. Kymäläinen et al. [49] focused on Generation Z's food waste, diet, and consumption habits in Finland, emphasizing the importance of sustainability in their food-related behaviors. Ford et al. [50] found that meat reduction among young consumers is influenced by factors such as moving away from home and limited food budgets. Participants showed awareness of

the environmental impact of food but had a knowledge gap when quantifying the effect, especially for dairy and seafood. Drivers for plant-based meat included convenience, positive sensory experiences, and influence from others, while barriers included negative health connotations and over-processing. Su et al. [46] found Gen Z consumers with high environmental consciousness prioritize eco-friendly and healthy product attributes when purchasing sustainable food. Their study identified three segments within Gen Z: sustainable moderates, sustainable believers, and sustainable activists. Sustainable activist Gen Z consumers placed a higher importance on food choices associated with healthy eating habits compared to other environmentally conscious groups. Altogether, these scientific results underline the selection of the target group of this study as young consumers, who can be considered increasingly critical about harmful consumption behavior.

The following research questions will be answered: (1) Which attributes deliver the highest part-worth utility for the PBMA "plant-based burger patties" for the target group Generation Z? (2) How much are young consumers of Generation Z willing to pay for these attributes?

2. Materials and Methods

The research object of this study is plant-based burger patties, a well-known food product which has been available in the Austrian food market for years, and which has a similar taste and texture as conventional burger patties made of beef.

Conventional beef burger patties are a famous product category. For instance, in the USA an estimated amount of 50 bn burgers is consumed every year [51]. McDonalds alone sold about 100 bn beef burger in the early 2000s [52]. PBMA burger patties are, therefore, a product where consumer knowledge about the original taste and texture is considered to be high. In general, PBMAs are food products which have characteristics comparable to meat. Besides cultivated meat and insect-based meat alternatives, PBMAs are amongst the most important substitutes for conventional meat [43]. Other innovative food products substituting meat are manufactured from microalgae and yeast [53]. These products have a significant potential to replace meat as the main protein source for human nutrition.

In order to assess the importance of specific characteristics of plant-based burger patties, we used a convenient method of ideal product planning, the choice-based conjoint analysis (CBCA). The CBCA is frequently used in the food sector to assess the preferences of the consumer for quality seals such as organic [54], to evaluate new manufacturing technologies in the food industry [55], or to assess the importance of local feed in animal production [56]. Similar to previous studies, such as those which assess the country-of-origin effect and locality of food [56,57], for example, or about labelling in the food sector [54,58], an experimental design was used to approximate consumer preferences and perceptions. A number of studies applying a CBCA were performed in the meat sector [59–61], for instance, to approximate the importance of extrinsic and intrinsic attributes that are important for consumers when purchasing red meat [62], to assess preferences on poultry meat in combination with food safety concerns [63], or to evaluate important attributes for pork [64]. The authors applied CBCA to approximate the willingness to pay (WTP) for meat substitutes, in this case manufactured microalgae [65], or to compare meat-hybrids, burger patties from cultivated meat, with classic meat burger patties [66].

The application of the CBCA is close to real shopping behavior as consumers have to make simple choices between several alternatives instead of assessing the importance of product attributes. Consumer choices are coded as binary data (choice/no-choice), and the importance of product attributes and attribute levels are then approximated based on the random utility theory [67]. The choice decision of consumer j can be expressed as $U_{ijs} = V_{ijs} + \varepsilon_{ijs}$, with the deterministic element $V_{ijs} = \beta_j \cdot X_{ijs}$ and the stochastic element ε_{ijs}. X_{ijs} is the vector of attributes with the ith option of choice set s; β_j is the (unknown) vector describing the preferences of the jth individual. β_j is then approximated, confirming

Equation (1) to approximate individual part-worth utilities of attributes by means of Hierarchical Bayes (HB) estimation:

$$U_{ijs} = \beta_0 + \beta_1 \cdot \mathrm{CoO}_{ijs} + \beta_2 \cdot \mathrm{PP}_{ijs} + \beta_3 \cdot \mathrm{FSC}_{ijs} + \beta_4 \cdot \mathrm{T}_{ijs} + \beta_5 \cdot \mathrm{P}_{ijs} + \varepsilon_{ijs} \quad (1)$$

Hierarchical Bayes (HB) estimation was used as "[r]ecent advances in Bayesian estimation make the estimation of these models computationally feasible, offering advantages in model interpretation over models based on indirect utility, and descriptive models that tend to be highly parameterized" [68]. Consequently, it is possible to approximate WTP for specific product features (as the price attribute is part of the research design) which "is the marginal rate of substitution of particular attributes/levels for money (price levels)" [69], confirming formula (2) where β_1 is denoted as the utility per level and β_{price} as the linear price function [69].

$$WTP = {}^{-\beta_i}\Big/_{\beta_{price}} \quad (2)$$

WTP is interpreted "as the price at which the respondent would switch away from the status quo product" [70]. It is a compensation for the positive or negative deviation of the part-worth utility for a specific product feature by increasing/decreasing the price of the product.

To develop adequate stimuli for consumers within a CBCA study design, we have to identify the most important product attributes. The stimuli are then presented to respondents, asking them to make a choice between a limited number of product alternatives. They might also decide not to buy any of the presented stimuli of the choice set. This further increases the reliability of a CBCA; efficiency rises and choice behavior can be reproduced better [71]. To identify the most relevant product features ("attributes") and options per feature ("attribute levels"), previous publications served as references. For instance, Apostolidis and McLeay [72] name fat content, origin, type of production, and price as the most important attributes when consumers buy meat or meat substitutes. Michel et al. [45] investigated relevant attributes of meat and meat substitutes, in particular, taste, texture, price, ease of preparation, protein content, fat content, and environmental friendliness. As consumers are usually not able to assess sensory attributes of meat (substitutes) at the point of sale, these specific attributes (taste, texture) were skipped. Based on recent studies, the following product attributes were selected: (1) primary ingredient of the PBMA [44,66,72–74], which might consist of wheat protein, pea protein, soy, etc.; (2) production type [61,65,66,75], with the PBMA being produced either organically or conventionally; (3) origin [61,72,76] (domestic: Austria, imported from an EU country, imported from outside EU, third-country imports); (4) fat content [61,72,76] (10, 15, 20%); and the attribute (5) price which is a central product feature in any consumer study applying CBCA [44,45,61,65,66,73,75–77]. The attribute levels of price were determined by scanning usual market prices for PBMAs (burger patties) in Austrian supermarkets. In general, the price span lies between slightly below EUR 3 to EUR 6 for a pack of two burger patties. The price levels in this study amounted to EUR 2.99, EUR 3.99, EUR 4.99, and EUR 5.99. All attributes and attribute levels can be taken from Table 1.

Table 1. Attributes and attribute levels of the PBMA consumer survey.

Attribute	Attribute Level			
	1	**2**	**3**	**4**
Primary ingredient of PBMA	Wheat protein (seitan)	Pea protein	Soy	Mushroom based protein
Production type	Conventional	Organic		
Origin	Austria	EU	Outside EU	
Fat content (%)	10	15	20	
Price (EUR)	2.99	3.99	4.99	5.99

We used the conventional MS Excel add-in XLSTAT (Version 2018.1.1) to develop an appropriate study design with a limited number of choice sets. Altogether, 288 different combinations of product attributes (=profiles) would be possible; the reduced design consisted of 12 profiles (Table 2). Each choice set consisted of three profiles and the no choice option. Consumers decided between these three options (comparable to Figure 1) or not to buy one (the no choice option). The respondents had to make 12 choices (Table 3).

Table 2. Profiles of the CBCA study design.

Profiles	Primary Ingredient	Production Type	Origin	Fat Content (%)	Price (EUR)
Profile 1	Wheat protein	Conventional	EU	10	3.99
Profile 2	Wheat protein	Conventional	Austria	15	5.99
Profile 3	Soy	Organic	Austria	20	3.99
Profile 4	Mushrooms	Conventional	EU	20	2.99
Profile 5	Pea protein	Conventional	Austria	20	4.99
Profile 6	Wheat protein	Organic	Outside EU	20	4.99
Profile 7	Pea protein	Organic	Outside EU	15	3.99
Profile 8	Pea protein	Organic	EU	10	5.99
Profile 9	Mushrooms	Conventional	Outside EU	20	5.99
Profile 10	Soy	Conventional	Outside EU	10	2.99
Profile 11	Soy	Conventional	EU	15	4.99
Profile 12	Mushrooms	Organic	Austria	10	4.99

Figure 1. Example of a product choice with three PBMAs and no choice option (in German).

Table 3. Choice sets of the CBCA study.

Choice Set	Profile # Choice 1	Profiles # Choice 2	Profiles # Choice 3	Choice 4
1	12	1	11	No choice (0)
2	3	4	2	No choice (0)
3	6	7	5	No choice (0)
4	9	10	8	No choice (0)
5	1	2	12	No choice (0)
6	4	5	3	No choice (0)
7	7	8	6	No choice (0)
8	10	11	9	No choice (0)
9	2	3	1	No choice (0)
10	5	6	4	No choice (0)
11	8	9	7	No choice (0)
12	11	12	10	No choice (0)

3. Results

3.1. Structure of the Sample

In total, 433 respondents with an age of ≤29 years completed the online survey. The sample is a convenience sample, respondents were recruited by means of online media (social media, online forums, etc.). The structure of the sample can be taken from Table 4. More females than males took part in the study, most of them students with a high school or bachelor's degree and an income below EUR 2000 per month. Almost ¾ live in urban regions, the proportion of vegetarians/vegans is very high with 18.5% and 30.8%, respectively. As mentioned above, about 11% of the Austrian population can be assumed to be vegetarian or vegan. Even though the proportion of vegetarians or vegans might be significantly higher within the Gen Z, the motivation to answer the survey might have been much higher for respondents following a vegetarian or vegan nutrition.

Table 4. Structure of the sample, $n = 433$.

		n	Valid %
Gender	female	262	71.6%
	male	104	28.4%
	no answer	67	
Education	up to middle school	19	4.4%
	college	20	4.7%
	high school	127	29.6%
	bachelor	201	46.9%
	master, PhD	62	14.5%
	no answer	4	
Job	employee	150	35.2%
	worker	13	3.1%
	unemployed	4	0.9%
	self-employed	9	2.1%
	in education, student	250	58.7%
	no answer	7	
Income	up to 1000	192	48.7%
	1001 to 2000	148	37.6%
	2001 to 3000	46	11.7%
	more than 3000	8	2.0%
	no answer	39	
Place of living	urban	307	72.2%
	rural	118	27.8%
	no answer	8	
Eating habits	omnivore	82	19.0%
	flexitarian (three days/week no meat)	120	27.8%
	pescetarian	17	3.9%
	vegetarian	80	18.5%
	vegan	133	30.8%
	no answer	1	

3.2. CBCA Results

The results of the CBCA can be taken from Table 5. All mean values are significant with $p < 0.001$. The most important attribute is origin (37.6%), followed by price (27.3%) and primary ingredients (20.9%). Type of production and fat content are, by far, less important at around 7%.

We approximated individual part-worth utilities by means of Hierarchical Bayes. The distribution of the approximations shows that the individual preferences are heterogeneous. Figure 2 visualizes the distribution for the three most important attributes origin, price, and primary ingredients. For instance, the importance of price ranges from 3% to 79%, the 95% confidence interval amounts to 0.26 to 0.29.

Table 5. Results of CBCA: importance of attributes and part-worth utilities; minimum (min), maximum (max), standard deviation (SD), mean, confidence interval (CI; approximated by 5000 draws).

Importance of Attributes	Min	Max	SD	Mean	95% CI	
					Lower	Upper
Importance primary ingredients	3.0%	62.0%	0.104	20.9%	0.199	0.219
Importance type of production	0.0%	36.0%	0.051	7.0%	0.065	0.075
Importance fat content	0.0%	41.0%	0.052	7.3%	0.068	0.078
Importance origin	1.0%	70.0%	0.176	37.6%	0.359	0.392
Importance price	3.0%	79.0%	0.166	27.3%	0.257	0.288
Part-worth utilities of attribute levels						
Primary ingredient 1: pea protein	−2.480	4.240	1.013	0.439	0.343	0.535
Primary ingredient 2: mushrooms	−3.170	5.120	1.580	0.306	0.157	0.455
Primary ingredient 3: soy	−3.680	3.270	1.367	−0.405	−0.535	−0.276
Primary ingredient 4: wheat	−2.780	2.820	1.095	−0.340	−0.443	−0.237
Production method 1: organic	−1.450	2.040	0.578	0.402	0.347	0.456
Production method 2: conventional	−2.040	1.450	0.578	−0.402	−0.456	−0.347
Origin 1: third-country	−7.280	1.380	2.127	−3.520	0.087	0.176
Origin 2: EU	−1.060	2.750	0.723	1.198	0.152	0.224
Origin 3: Austria	−1.380	6.010	1.629	2.322	−0.376	−0.263
Fat content 1: 10%	−1.410	1.820	0.472	0.131	−3.721	−3.319
Fat content 2: 15%	−1.250	1.270	0.381	0.188	1.130	1.266
Fat content 3: 20%	−2.180	1.460	0.603	−0.319	2.168	2.476
EUR 2.99	−2.570	5.180	1.826	1.033	0.861	1.206
EUR 3.99	−1.170	3.260	0.925	1.078	0.990	1.165
EUR 4.99	−2.320	1.730	0.907	−0.169	−0.254	−0.083
EUR 5.99	−5.790	2.940	1.857	−1.943	−2.118	−1.767
β_{price}				–1.017		

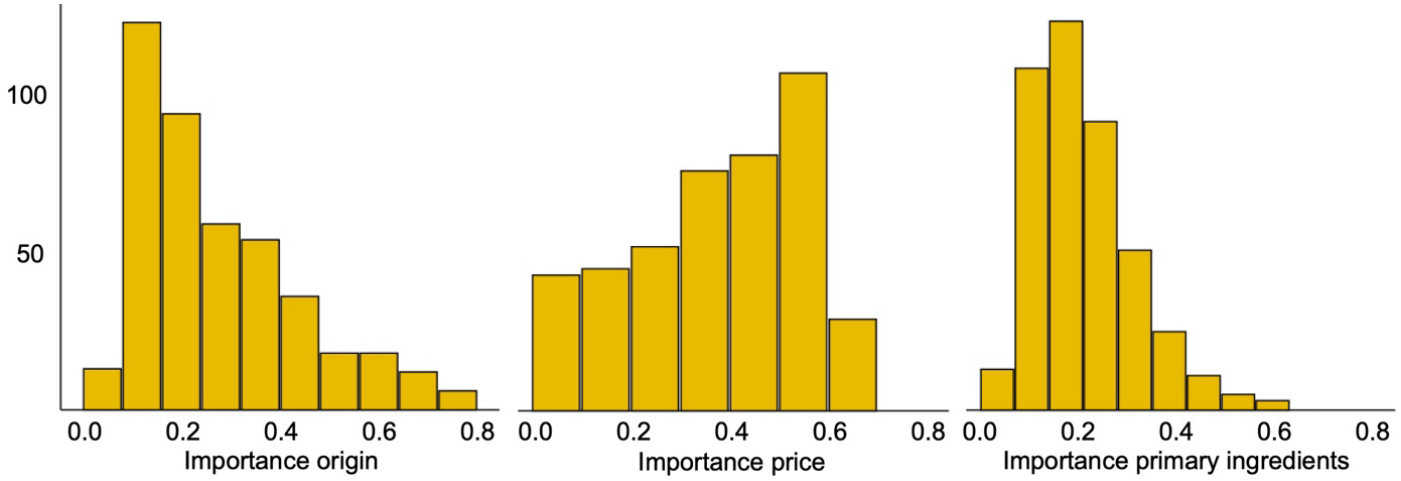

Figure 2. Distribution of part-worth utilities of the importance of origin, price, and primary ingredients (frequencies, n = 433).

The approximation of individual part-worth utilities is a benefit of HB estimations. The variety of consumer preferences can be illustrated to be much closer to real shopping behavior compared to more conventional methods of approximating part-worth utilities on an aggregate level. Concerning the preferences for specific product characteristics, the respondents have a clear tendency towards pea protein or mushroom with a mean of 0.3 to 0.4 (by contrast, soy and wheat have a negative part-worth utility with around −0.4); they prefer organic production (0.40) and, in particular, domestic origin or at least an EU origin

(2.32 and 1.20, respectively). Imported from third-countries results in the highest negative part-worth utility of all attribute levels with a mean of −3.52. Concerning fat content, a low to medium level results in modest positive part-worth utilities (0.13 and 0.19, respectively), and a high fat content is considered to be less preferable (−0.32).

In addition, individual HB approximation allows testing of the influence of independent variables. In our case, it is most interesting if the eating behavior of respondents (vegan, vegetarian, etc.) has a significant impact on the importance of attributes as well as on the part-worth utilities of attribute levels. As Table 6 shows, there are significant differences between nutritional behavior and the importance of attributes. In particular, the importance of primary ingredients and price seem to be influenced by nutritional behavior. Omnivores tend to have a higher focus on primary ingredients (24.2%). The price attribute is significantly less important (25.5%). Vegans are much more price sensitive (31.4%) and put less emphasis on primary ingredients (18.5%).

Table 6. Differences importance of attributes and nutrition.

	Importance of . . . Primary Ingredients	Type of Production	Origin	Fat Content	Price	n
Omnivore	24.2%	6.6%	36.2%	7.5%	25.5%	82
Flexitarian	20.8%	7.7%	40.2%	7.4%	24.0%	120
Pescetarian	19.9%	6.7%	38.8%	7.4%	27.2%	17
Vegetarian	21.8%	7.1%	36.5%	7.4%	27.2%	80
Vegan	18.5%	6.6%	36.4%	7.1%	31.4%	133
Total	20.9%	7.0%	37.5%	7.3%	27.3%	432
F	4.165	0.838	1.027	0.117	3.604	
Sig.	0.003	0.502	0.393	0.976	0.007	
η^2	0.038	0.008	0.001	0.01	0.033	

The differences in Table 6 are significant below a 0.001-level. Confirming Cohen [78], the effect size is medium to low with Eta^2 $\eta^2 < 0.04$. Concerning part-worth utilities, eating behavior seems to significantly influence the approximated part-worth utilities of the price levels only (F = 3.9 to 6.4; Sig. < 0.001; η^2 = 0.04 to 0.06). All other approximations are not influenced by the respondents' eating behavior. We also tested sociodemographic variables, but almost none seem to have a huge impact on the approximations, with one exception: the variable gender might influence (1) the importance of price (male respondents were more price sensitive than women; F = 9.8; Sig. = 0.002; η^2 = 0.03) and (2) the importance of origin (female respondents put more emphasis on domestic origin compared to male respondents; F = 15.8; Sig. < 0.001; η^2 = 0.04). As expected, there is a limited influence of the variable net income (Table 7). In particular, lower income respondents (EUR < 1000 per month) show a significantly higher preference for the price attribute (31.4%) compared to all other income classes (around 25%). Respondents with a higher income also have a higher, but still negative, preference for premium prices, while low prices correlate negatively with net income (however, effect size is rather low with η^2 around 0.03; see Table 7).

All other variables are not influencing the importance of attributes (nor the approximations of part-worth utilities).

Therefore, our conclusion is that, to some extent, eating behavior and gender influence the assessment of PBMA attributes, and the price attribute is also slightly dependent on Gen Z consumers' net income. It is important to see that young customers are mainly influenced by origin, where the domestic provenance is mandatory, and imported PBMAs are perceived to be much less preferable for young consumers. In addition, the price attribute is also very important (in particular for low-income participants), which is not really surprising as Gen Z consumers are assumed to have a lower budget available for their everyday food purchases. Concerning the primary ingredients, soy and wheat are rather rejected. The same can be said of a high fat content and conventional production. However,

all the differences are rather low which makes them much less important compared to origin and price.

Table 7. Mean (standard deviation), significance, η^2 of net income vs. importance price, part-worth utilities price levels.

.Net Income	Importance Price	Part-Worth Utility			
		Price 1: EUR 2.99	Price 2: EUR 3.99	Price 3: EUR 4.99	Price 4: EUR 5.99
up to 1000; *n* = 192	0.304 (0.170)	1.401 (1.900)	1.204 (0.945)	–0.323 (0.916)	–2.282 (1.920)
1001 to 2000; *n* = 148	0.247 (0.164)	0.743 (1.747)	0.911 (0.947)	–0.001 (0.929)	–1.653 (1.772)
2001 to 3000; *n* = 46	0.251 (0.162)	0.824 (1.769)	1.117 (0.864)	–0.158 (0.926)	–1.782 (1.792)
more than 3000; *n* = 8	0.266 (0.142)	0.482 (1.208)	1.362 (0.704)	–0.122 (0.487)	–1.723 (1.188)
Total (*n* = 394)	0.276 (0.168)	1.068 (1.841)	1.087 (0.940)	–0.179 (0.925)	–1.976 (1.857)
F	3.606	4.276	3.001	3.448	3.513
Sig.	0.014	0.005	0.030	0.017	0.015
η^2	0.027	0.032	0.023	0.026	0.026

Mean (standard deviation).

3.3. Willingness to Pay (WTP)

The CBCA results are also highly relevant when assessing the young respondents' WTP for specific product characteristics. Even though the WTP approximations based on formula (2) are quite rough, they deliver valuable information for manufacturers regarding the possibility of calculating a premium for specific product characteristics. As we can see from Table 8, domestic origin results in the highest premium, while being imported might have a huge negative effect on prices. This is by far the most significant result concerning WTP; all other approximations are much less relevant. The huge impact of origin on WTP is probably an overestimation and should be reflected carefully. But at least it is a clear hint that origin is an attribute of upmost importance, even in the PBMA market, with the target group being young consumers. Future marketing strategies should, therefore, consider this outcome whenever premium products should be launched in this specific food segment.

Table 8. WTP for attribute levels of PBMAs (burger patties).

Attribute Levels	WTP
Primary ingredient 1: pea protein	+0.43
Primary ingredient 2: mushrooms	+0.30
Primary ingredient 3: soy	−0.40
Primary ingredient 4: wheat	−0.33
Production method 1: organic	+0.39
Production method 2: conventional	−0.39
Origin 1: third-country	−3.46
Origin 2: EU	+1.18
Origin 3: Austria	+2.28
Fat content 1: 10%	+0.13
Fat content 2: 15%	+0.18
Fat content 3: 20%	−0.31

4. Discussion and Limitations

Overall, these results allow us to answer our research questions. Concerning the first ("Which attributes deliver the highest part-worth utility for the PBMA 'plant-based burger patties' for the target group Generation Z?"), it became clear that origin and price are the most important attributes for Gen Z consumers. Concerning the second ("How much are young consumers of Generation Z willing to pay for these attributes?"), domestic origin, in

particular, has an outstanding positive WTP factor, while young consumers expect a large discount if the primary ingredients of a PBMA are imported from outside the EU.

Of course, these results have limitations which are, first of all, due to the recruitment of respondents. As the sample is a convenient one, the transferability of results is limited. Therefore, the results are not one-to-one transferable to the general population, more so, as some of the socio-demographic variables seem to have a significant influence on results. The large proportion of vegetarians/vegans within the sample reveals clear evidence that, in average, respondents might have a higher interest in PBMAs compared to the overall population. Therefore, the value of this study does not lie in representativeness, but in gaining first important insights into consumer behavior of the consumer segment "Generation Z". The main focus refers to a very specific product category (PBMA) supporting the food value chain towards higher (mainly ecological) sustainability.

We obtained the data by means of an online survey. In view of the target group of this study, online recruitment and the application of mobile devices were not considered to be an issue, particularly as the target group of the study were "digital natives", having grown up with technology [79]. Confirming Nissen and Janneck [80], the application of mobile devices has increased significantly in the last decade (from 4% in 2011 to more than 33% in 2018). Given the low termination rate of 17%—up to 50% was possible [81]—the data acquisition approach worked out well. To increase the reliability of the CBCA, the no-choice option was included. Respondents were not forced to choose one of the three products in each choice set even though none of them might fulfill the basic expectations of the respondent. However, if a respondent decided not to choose any of the presented profiles, there is no information available about the attractiveness of the available product alternatives [71].

Even though a CBCA delivers reliable, valid approximations, it is not possible to completely avoid the so-called attitude–behavior gap (in surveys, there is a clear gap between consumers' perceptions and their real shopping behavior) and the social desirability bias [82]. In particular, WTP estimations are somewhat biased, as higher values are approximated as consumers are not really forced to spend money [83]. In general, studies, such as the one of Sichtmann et al. [84], which are comparable to this survey show average WTP over-estimations when applying a CBCA. However, numerous studies have applied a comparable WTP approach [61,75–77,85–89], which is clear evidence that, in general, this WTP approximation method works fine even though the metric values might be overestimated. Therefore, it is of upmost importance to interpret the WTP results carefully. They should be considered as guidelines rather than as reference values. A last point refers again to the above-mentioned attitude–behavior gap. Particularly in view of environmental issues, there is a clear gap between statements in consumer surveys and real behavior [90]. Usually, consumers tend to significantly overestimate their environmental friendliness, in particular, because true environmentally friendly behavior (e.g., purchase of organic food) is quite often associated with higher expenses [91]. Also, domestic food is quite often more expensive than imported. Therefore, the approximations might reflect social desirability and not so much real shopping behavior, which is still an issue in market research, as recent publications point out [82]. There are visionary approaches to reducing the social desirability bias by combining eye-tracking techniques with CBCA approaches [54], for example. Comparable approaches could further improve the validity of CBCA results.

5. Conclusions and Future Research

Our results show that origin and price are the most important PBMA attributes for our target group, Gen Z. Published PBMA studies come to comparable results. For instance, Elzerman et al. [92] identified the price attribute to be the most significant barrier for purchasing PBMAs (besides missing information on packaging, which was not part of our CBCA model). Therefore, the food industry has to consider that the target group Gen Z is, in general, rather not willing to pay a premium for PBMAs, whilst origin has an outstanding priority. By contrast, more health-related attributes (fat content) and the

production method (organic vs. conventional) have no priority; the latter because the production method of highly processed food might get less important when compared to fresh food. However, these outcomes might also be triggered by individual environmental and health consciousness, which was not part of the empirical design. In future research, the inclusion of these (and probably other) dimensions might further increase the reliability of results. This will become even more important as the above-mentioned recommendations of the planetary healthy diet [1] might lead to an increased intake of ultra-processed foods [11,12], for example, which could be avoided by more health-oriented consumers, even though these foods might be more environmentally friendly. This future research task is not limited to Gen Z studies. Also, the general image of PBMAs as more environmentally friendly is not undisputed, as quite often PBMAs are ultra-processed foods and also other meat production systems (e.g., the above-mentioned integrated crop-livestock systems [9,10] or grass-fed beef [16]) are available. It could be interesting to see if Gen Z agrees with the estimation of life cycle assessments revealing that plant-based burger patties are much less climate harming with significantly lower marine eutrophication [17].

In view of the refusal of the primary ingredient soy (negative part-worth utility), the application of this low-cost ingredient could be reflected by the industry. Although soy has some highly appreciated characteristics, such as nutritional value and beneficial functional qualities [25], food manufactures should consider that consumers might not so much appreciate this ingredient in a PBMA. There are alternatives available, for instance pea protein, with a positive perception in our study but also a growing market segment [93]. However, as the literature shows, meat consumption and probably also the perception of meat substitutes is related to cultural and social aspects [30–32,36,37]. The refusal of the ingredient "soy" might, therefore, be influenced by cultural particularities in eating behaviors. And conclusions are, therefore, only valid for the empirical field of the relevant study and are not one-to-one transferable to other geographical regions. In our case—including the above-mentioned limitation of convenient sampling—this means that the general outcome might be comparable to high-income cultures with Western diets, but not so much for other parts of the world, such as Asian or South American countries. Future research could address this issue by implementing cross-national studies. And finally, it seems wise to address the discussed social desirability bias in future research, e.g., by combing CBCA with other appropriate methods such as above-mentioned eye-tracking [54] or sensory methods [77].

Altogether, this study delivers valuable information about a very specific food market segment, Gen Z, defined as young consumers below 30 years old. Future research should, therefore, focus on evaluating the outcome of this study with representative samples because these consumers will have a huge impact on future food markets. Due to a potential lack of data, it might be demanding to conduct representative studies with the target group, Gen Z. Nevertheless, more representative, cross-national samples will further improve the validity and reliability of the outcomes and deduced conclusions. As there is obviously a clear tendency towards meat alternatives in particular, when analyzing young consumers' eating habits, as shown in our literature research [46–50], the outcome of these studies is of exceptional value for food companies, which are eager to develop future-oriented, sustainable food strategies. Future actions could involve promoting collaboration between science and the food industry, thereby generating relevant expertise and facilitating the transfer of research findings into practical applications and concrete strategies aimed at meeting consumer expectations for plant-based meat alternatives.

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References

1. Willett, W.; Rockström, J.; Loken, B.; Springmann, M.; Lang, T.; Vermeulen, S.; Garnett, T.; Tilman, D.; DeClerck, F.; Wood, A.; et al. Food in the Anthropocene: The EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems. *Lancet* **2019**, *393*, 447–492. [CrossRef] [PubMed]
2. Leitzmann, C. Vegetarian Nutrition: Past, Present, Future. *Am. J. Clin. Nutr.* **2014**, *100*, 496–502. [CrossRef] [PubMed]
3. Oswalder, G. Vegetarier und Veganer als Zielgruppe für Handel und Gastronomie in Österreich. Available online: https://www.marktmeinungmensch.at/studien/vegetarier-und-veganer-als-zielgruppe-fuer-handel-/#:~:text=In%20absoluten%20Zahlen%20sind%20das,nur%20auf%20vegetarisch%20oder%20vegan (accessed on 8 March 2024).
4. WKO. Pflanzen sind das "Fleisch" von Morgen. Available online: https://www.wko.at/stmk/news/pflanzen-sind-das-fleisch-von-morgen (accessed on 7 March 2024).
5. Falkner, R. The Paris Agreement and the New Logic of International Climate Politics. *Int. Aff.* **2016**, *92*, 1107–1125. [CrossRef]
6. Vermeulen, S.J.; Campbell, B.M.; Ingram, J.S.I. Climate Change and Food Systems. *Annu. Rev. Environ. Resour.* **2012**, *37*, 195–222. [CrossRef]
7. Notarnicola, B.; Tassielli, G.; Renzulli, P.A.; Castellani, V.; Sala, S. Environmental Impacts of Food Consumption in Europe. *J. Clean. Prod.* **2017**, *140*, 753–765. [CrossRef]
8. Poore, J.; Nemecek, T. Reducing Food's Environmental Impacts through Producers and Consumers. *Science (1979)* **2018**, *360*, 987–992. [CrossRef]
9. dos Reis, J.C.; Rodrigues, G.S.; de Barros, I.; Ribeiro Rodrigues, R.d.A.; Garrett, R.D.; Valentim, J.F.; Kamoi, M.Y.T.; Michetti, M.; Wruck, F.J.; Rodrigues-Filho, S.; et al. Integrated Crop-Livestock Systems: A Sustainable Land-Use Alternative for Food Production in the Brazilian Cerrado and Amazon. *J. Clean. Prod.* **2021**, *283*, 124580. [CrossRef]
10. Salton, J.C.; Mercante, F.M.; Tomazi, M.; Zanatta, J.A.; Concenço, G.; Silva, W.M.; Retore, M. Integrated Crop-Livestock System in Tropical Brazil: Toward a Sustainable Production System. *Agric. Ecosyst. Environ.* **2014**, *190*, 70–79. [CrossRef]
11. Chang, K.; Gunter, M.J.; Rauber, F.; Levy, R.B.; Huybrechts, I.; Kliemann, N.; Millett, C.; Vamos, E.P. Ultra-Processed Food Consumption, Cancer Risk and Cancer Mortality: A Large-Scale Prospective Analysis within the UK Biobank. *EClinicalMedicine* **2023**, *56*, 101840. [CrossRef]
12. Lane, M.M.; Gamage, E.; Du, S.; Ashtree, D.N.; McGuinness, A.J.; Gauci, S.; Baker, P.; Lawrence, M.; Rebholz, C.M.; Srour, B.; et al. Ultra-Processed Food Exposure and Adverse Health Outcomes: Umbrella Review of Epidemiological Meta-Analyses. *BMJ* **2024**, *384*, e077310. [CrossRef]
13. Sanchez-Sabate, R.; Sabaté, J. Consumer Attitudes towards Environmental Concerns of Meat Consumption: A Systematic Review. *Int. J. Environ. Res. Public Health* **2019**, *16*, 1220. [CrossRef] [PubMed]
14. Goldstein, B.; Moses, R.; Sammons, N.; Birkved, M. Potential to Curb the Environmental Burdens of American Beef Consumption Using a Novel Plant-Based Beef Substitute. *PLoS ONE* **2017**, *12*, e0189029. [CrossRef] [PubMed]
15. Harwatt, H.; Sabaté, J.; Eshel, G.; Soret, S.; Ripple, W. Substituting Beans for Beef as a Contribution toward US Climate Change Targets. *Clim. Chang.* **2017**, *143*, 261–270. [CrossRef]
16. Hayek, M.N.; Garrett, R.D. Nationwide Shift to Grass-Fed Beef Requires Larger Cattle Population. *Environ. Res. Lett.* **2018**, *13*, 084005. [CrossRef]
17. Saget, S.; Porto Costa, M.; Santos, C.S.; Vasconcelos, M.; Styles, D.; Williams, M. Comparative Life Cycle Assessment of Plant and Beef-Based Patties, Including Carbon Opportunity Costs. *Sustain. Prod. Consum.* **2021**, *28*, 936–952. [CrossRef]
18. Bailey, R.; Froggatt, A.; Wellesley, L. Livestock—Climate Change's Forgotten Sector Global Public Opinion on Meat and Dairy Consumption. Available online: https://policycommons.net/artifacts/1423418/livestock-climate-changes-forgotten-sector/2037687/ (accessed on 7 February 2024).
19. Whitnall, T.; Pitts, N. Global Trends in Meat Consumption. *Agric. Commod.* **2019**, *9*, 96.
20. Zhang, H.; Wang, J.; Martin, W. Factors Affecting Households' Meat Purchase and Future Meat Consumption Changes in China: A Demand System Approach. *J. Ethn. Foods* **2018**, *5*, 24–32. [CrossRef]
21. Statistik Austria. Pro-Kopf-Verbrauch Tierischer Erzeugnisse 2021 Weiter rüCkläufig. Available online: https://www.statistik.at/fileadmin/announcement/2022/08/20220831VersorgungsbilanzentierischeProdukte2021.pdf (accessed on 2 February 2024).
22. United Nations. *United Nations World Population Prospects 2019: Highlights*; Department of Economic and Social Affairs, Population Division: New York, NY, USA, 2019; pp. 2–3.
23. Angus, A.; Westbrook, G. *Top 10 Global Consumer Trends 2019*; Euromonitor International: London, UK, 2019.

24. Bielinska, K.; Rehder, L.; Trautmann, W. *Germany Is Leading a Vegaluation-Vegan Revolution in Europe 2020*; USDA: Berlin, Germany, 2020.
25. Joshi, V.K.; Kumar, S. Meat Analogues: Plant Based Alternatives to Meat Products—A Review. *Int. J. Food Ferment. Technol.* **2015**, *5*, 107–119. [CrossRef]
26. Bresinger, G. Vegan, Plant-Based 'Meat' Yields Mouth-Watering Profits. Available online: https://nypost.com/2019/11/16/vegan-plant-based-meat-yields-mouth-watering-profits/ (accessed on 8 March 2024).
27. Southey, F. "Plant-Based", "Vegan", or "Vegetarian"? *Consumers Reveal Attitudes to Diet Descriptions.* Available online: https://www.foodnavigator.com/Article/2019/10/25/Plant-based-vegan-or-vegetarian-Consumers-reveal-attitudes-to-diet-descriptions (accessed on 8 March 2024).
28. Verzegnassi, A. Beyond the Meat—Plant-Based Meat Alternatives and Their Market, a Focus on beyond Meat. Available online: https://run.unl.pt/bitstream/10362/105983/1/2019-20_S1-33809-36_Andrea_Verzegnassi.pdf (accessed on 7 February 2024).
29. Vegconomist. European Plant-Based Food Sales Grow by 22%, Reaching a Record $5.7Bn. Available online: https://vegconomist.com/studies-and-numbers/european-plant-based-food-sales-grow/ (accessed on 27 February 2024).
30. Nam, K.-C.; Jo, C.; Lee, M. Meat Products and Consumption Culture in the East. *Meat. Sci.* **2010**, *86*, 95–102. [CrossRef]
31. Vranken, L.; Avermaete, T.; Petalios, D.; Mathijs, E. Curbing Global Meat Consumption: Emerging Evidence of a Second Nutrition Transition. *Environ. Sci. Policy* **2014**, *39*, 95–106. [CrossRef]
32. Sans, P.; Combris, P. World Meat Consumption Patterns: An Overview of the Last Fifty Years (1961–2011). *Meat. Sci.* **2015**, *109*, 106–111. [CrossRef] [PubMed]
33. Kanerva, M. *Meat Consumption in Europe: Issues, Trends and Debates*; Artec-Papers Nr. 187; Universität Bremen, Forschungszentrum Nachhaltigkeit: Bremen, Germany, 2013.
34. Weinrich, R. Cross-Cultural Comparison between German, French and Dutch Consumer Preferences for Meat Substitutes. *Sustainability* **2018**, *10*, 1819. [CrossRef]
35. Bryant, C.; van Nek, L.; Rolland, N.C.M. European Markets for Cultured Meat: A Comparison of Germany and France. *Foods* **2020**, *9*, 1152. [CrossRef] [PubMed]
36. Michel, F.; Knaapila, A.; Hartmann, C.; Siegrist, M. A Multi-National Comparison of Meat Eaters' Attitudes and Expectations for Burgers Containing Beef, Pea or Algae Protein. *Food Qual. Prefer.* **2021**, *91*, 104195. [CrossRef]
37. Onwezen, M.C.; Bouwman, E.P.; Reinders, M.J.; Dagevos, H. A Systematic Review on Consumer Acceptance of Alternative Proteins: Pulses, Algae, Insects, Plant-Based Meat Alternatives, and Cultured Meat. *Appetite* **2021**, *159*, 105058. [CrossRef] [PubMed]
38. Mata, J.; Kadel, P.; Frank, R.; Schüz, B. Education- and Income-Related Differences in Processed Meat Consumption across Europe: The Role of Food-Related Attitudes. *Appetite* **2023**, *182*, 106417. [CrossRef] [PubMed]
39. Zhang, T.; Dou, W.; Zhang, X.; Zhao, Y.; Zhang, Y.; Jiang, L.; Sui, X. The Development History and Recent Updates on Soy Protein-Based Meat Alternatives. *Trends Food Sci. Technol.* **2021**, *109*, 702–710. [CrossRef]
40. He, J.; Evans, N.M.; Liu, H.; Shao, S. A Review of Research on Plant-based Meat Alternatives: Driving Forces, History, Manufacturing, and Consumer Attitudes. *Compr. Rev. Food Sci. Food Saf.* **2020**, *19*, 2639–2656. [CrossRef]
41. Hamid, M.A.; Tsia, F.L.C.; Okit, A.A.B.; Xin, C.W.; Cien, H.H.; Harn, L.S.; Patrick, P.N.; Samirin, S.; Azizi, W.A.A.W.; Irfanian, A.; et al. The Application of Jackfruit By-Product on the Development of Healthy Meat Analogue. *IOP Conf. Ser. Earth Environ. Sci.* **2020**, *575*, 6–13. [CrossRef]
42. Hoek, A.C.; van Boekel, M.A.J.S.; Voordouw, J.; Luning, P.A. Identification of New Food Alternatives: How Do Consumers Categorize Meat and Meat Substitutes? *Food Qual. Prefer.* **2011**, *22*, 371–383. [CrossRef]
43. Lee, H.J.; Yong, H.I.; Kim, M.; Choi, Y.S.; Jo, C. Status of Meat Alternatives and Their Potential Role in the Future Meat Market—A Review. *Asian-Australas. J. Anim. Sci.* **2020**, *33*, 1533–1543. [CrossRef] [PubMed]
44. Slade, P. If You Build It, Will They Eat It? Consumer Preferences for Plant-Based and Cultured Meat Burgers. *Appetite* **2018**, *125*, 428–437. [CrossRef] [PubMed]
45. Michel, F.; Hartmann, C.; Siegrist, M. Consumers' Associations, Perceptions and Acceptance of Meat and Plant-Based Meat Alternatives. *Food Qual. Prefer.* **2021**, *87*, 104063. [CrossRef]
46. Su, C.H.; Tsai, C.H.; Chen, M.H.; Lv, W.Q. US Sustainable Food Market Generation Z Consumer Segments. *Sustainability* **2019**, *11*, 3607. [CrossRef]
47. Pelletier, J.E.; Laska, M.N.; Neumark-Sztainer, D.; Story, M. Positive Attitudes toward Organic, Local, and Sustainable Foods Are Associated with Higher Dietary Quality among Young Adults. *J. Acad. Nutr. Diet.* **2013**, *113*, 127–132. [CrossRef] [PubMed]
48. Bogueva, D.; Marinova, D. Australian Generation Z and the Nexus between Climate Change and Alternative Proteins. *Animals* **2022**, *12*, 2512. [CrossRef]
49. Kymäläinen, T.; Seisto, A.; Malila, R. Generation z Food Waste, Diet and Consumption Habits: A Finnish Social Design Study with Future Consumers. *Sustainability* **2021**, *13*, 2124. [CrossRef]
50. Ford, H.; Gould, J.; Danner, L.; Bastian, S.E.P.; Yang, Q. "I Guess It's Quite Trendy": A Qualitative Insight into Young Meat-Eaters' Sustainable Food Consumption Habits and Perceptions towards Current and Future Protein Alternatives. *Appetite* **2023**, *190*, 107025. [CrossRef]

51. PBS. The Hidden Costs of Hamburgers. Available online: https://www.pbs.org/newshour/science/the-hidden-costs-of-hamburgers#:~:text=It%20takes%201,800%20gallons%20of,warming%20effect%20of%20carbon%20dioxide (accessed on 7 February 2024).
52. Spencer, E.H.; Frank, E.; McIntosh, N.F. Potential Effects of the next 100 Billion Hamburgers Sold by McDonald's. *Am. J. Prev. Med.* **2005**, *28*, 379–381. [CrossRef]
53. van der Weele, C.; Feindt, P.; van der Goot, A.J.; van Mierlo, B.; van Boekel, M. Meat Alternatives: An Integrative Comparison. *Trends Food Sci. Technol.* **2019**, *88*, 505–512. [CrossRef]
54. Meyerding, S.G.H.; Merz, N. Consumer Preferences for Organic Labels in Germany Using the Example of Apples—Combining Choice-Based Conjoint Analysis and Eye-Tracking Measurements. *J. Clean. Prod.* **2018**, *181*, 772–783. [CrossRef]
55. Cardello, A.V.; Schutz, H.G.; Lesher, L.L. Consumer Perceptions of Foods Processed by Innovative and Emerging Technologies: A Conjoint Analytic Study. *Innov. Food Sci. Emerg. Technol.* **2007**, *8*, 73–83. [CrossRef]
56. Profeta, A.; Hamm, U. Do Consumers Prefer Local Animal Products Produced with Local Feed? Results from a Discrete-Choice Experiment. *Food Qual. Prefer.* **2019**, *71*, 217–227. [CrossRef]
57. Aoki, K.; Akai, K.; Ujiie, K. A Choice Experiment to Compare Preferences for Rice in Thailand and Japan: The Impact of Origin, Sustainability, and Taste. *Food Qual. Prefer.* **2017**, *56*, 274–284. [CrossRef]
58. Meyerding, S.G.H. Consumer Preferences for Food Labels on Tomatoes in Germany—A Comparison of a Quasi-Experiment and Two Stated Preference Approaches. *Appetite* **2016**, *103*, 105–112. [CrossRef]
59. Kallas, Z.; Varela, E.; Čandek-Potokar, M.; Pugliese, C.; Cerjak, M.; Tomažin, U.; Karolyi, D.; Aquilani, C.; Vitale, M.; Gil, J.M. Can Innovations in Traditional Pork Products Help Thriving EU Untapped Pig Breeds? A Non-Hypothetical Discrete Choice Experiment with Hedonic Evaluation. *Meat. Sci.* **2019**, *154*, 75–85. [CrossRef] [PubMed]
60. Hong, X.; Li, C.; Wang, L.; Wang, M.; Grasso, S.; Monahan, F.J. Consumer Preferences for Processed Meat Reformulation Strategies: A Prototype for Sensory Evaluation Combined with a Choice-Based Conjoint Experiment. *Agriculture* **2023**, *13*, 234. [CrossRef]
61. Demartini, E.; Vecchiato, D.; Tempesta, T.; Gaviglio, A.; Viganò, R. Consumer Preferences for Red Deer Meat: A Discrete Choice Analysis Considering Attitudes towards Wild Game Meat and Hunting. *Meat. Sci.* **2018**, *146*, 168–179. [CrossRef] [PubMed]
62. Steiner, B.; Gao, F.; Unterschultz, J. Alberta Consumers' Valuation of Extrinsic and Intrinsic Red Meat Attributes: A Choice Experimental Approach. *Can. J. Agric. Econ.* **2010**, *58*, 171–189. [CrossRef]
63. Indrawan, D.; Christy, A.; Hogeveen, H. Improving Poultry Meat and Sales Channels to Address Food Safety Concerns: Consumers' Preferences on Poultry Meat Attributes. *Br. Food J.* **2021**, *123*, 529–546. [CrossRef]
64. McLean, K.G.; Hanson, D.J.; Jervis, S.M.; Drake, M.A. Consumer Perception of Retail Pork Bacon Attributes Using Adaptive Choice-Based Conjoint Analysis and Maximum Differential Scaling. *J. Food Sci.* **2017**, *82*, 2659–2668. [CrossRef] [PubMed]
65. Weinrich, R.; Elshiewy, O. Preference and Willingness to Pay for Meat Substitutes Based on Micro-Algae. *Appetite* **2019**, *142*, 104353. [CrossRef] [PubMed]
66. Profeta, A.; Baune, M.-C.; Smetana, S.; Broucke, K.; Van Royen, G.; Weiss, J.; Heinz, V.; Terjung, N. Discrete Choice Analysis of Consumer Preferences for Meathybrids—Findings from Germany and Belgium. *Foods* **2020**, *10*, 71. [CrossRef] [PubMed]
67. McFadden, D. Conditional Logit Analysis of Qualitative Choice Behavior. In *Frontiers of Econometrics*; Zarembka, P., Ed.; Academic Press: New York, NY, USA, 1974; pp. 105–142.
68. Chandukala, S.R.; Kim, J.; Otter, T.; Allenby, G.M. Choice Models in Marketing: Economic Assumptions, Challenges and Trends. In *Foundations and Trends in Marketing*; Now Publishers Inc.: Hanover, MA, USA, 2008; ISBN 1601981643.
69. Louviere, J.J.; Islam, T. A Comparison of Importance Weights and Willingness-to-Pay Measures Derived from Choice-Based Conjoint, Constant Sum Scales and Best-Worst Scaling. *J. Bus. Res.* **2008**, *61*, 903–911. [CrossRef]
70. Breidert, C.; Hahsler, M.; Reutterer, T. A Review of Methods for Measuring Willingness-to-Pay. *Innov. Mark.* **2006**, *2*, 8–32.
71. Brazell, J.D.; Diener, C.G.; Karniouchina, E.; Moore, W.L.; Séverin, V.; Uldry, P.F. The No-Choice Option and Dual Response Choice Designs. *Mark. Lett.* **2006**, *17*, 255–268. [CrossRef]
72. Apostolidis, C.; McLeay, F. Should We Stop Meating like This? Reducing Meat Consumption through Substitution. *Food Policy* **2016**, *65*, 74–89. [CrossRef]
73. Arora, R.S.; Brent, D.A.; Jaenicke, E.C. Is India Ready for Alt-Meat? Preferences and Willingness to Pay for Meat Alternatives. *Sustainability* **2020**, *12*, 4377. [CrossRef]
74. Van Loo, E.J.; Caputo, V.; Lusk, J.L. Consumer Preferences for Farm-Raised Meat, Lab-Grown Meat, and Plant-Based Meat Alternatives: Does Information or Brand Matter? *Food Policy* **2020**, *95*, 101931. [CrossRef]
75. Koistinen, L.; Pouta, E.; Heikkilä, J.; Forsman-Hugg, S.; Kotro, J.; Mäkelä, J.; Niva, M. The Impact of Fat Content, Production Methods and Carbon Footprint Information on Consumer Preferences for Minced Meat. *Food Qual. Prefer.* **2013**, *29*, 126–136. [CrossRef]
76. Cubero Dudinskaya, E.; Naspetti, S.; Arsenos, G.; Caramelle-Holtz, E.; Latvala, T.; Martin-Collado, D.; Orsini, S.; Ozturk, E.; Zanoli, R. European Consumers' Willingness to Pay for Red Meat Labelling Attributes. *Animals* **2021**, *11*, 556. [CrossRef] [PubMed]
77. Meyerding, S.G.H.; Gentz, M.; Altmann, B.; Meier-Dinkel, L. Beef Quality Labels: A Combination of Sensory Acceptance Test, Stated Willingness to Pay, and Choice-Based Conjoint Analysis. *Appetite* **2018**, *127*, 324–333. [CrossRef] [PubMed]
78. Cohen, J. *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed.; Lawrence Erlbaum Associates: Hillsdale, NJ, USA, 1988.
79. Evans, C.; Robertson, W. The Four Phases of the Digital Natives Debate. *Hum. Behav. Emerg. Technol.* **2020**, *2*, 269–277. [CrossRef]

80. Nissen, H.; Janneck, M. Einfluss Des Verwendeten Endgeräts Auf Das Nutzungsverhalten in Online-Befragungen. Available online: https://dl.gi.de/items/c616f173-4cec-4446-99c4-e0f5cd766a6e (accessed on 8 March 2024).
81. Thielsch, M.; Hirschfeld, G. Unaufmerksamkeit, Faking, Speedster. . . Kontrolle der Datenqualität in User Experience Befragungen. Available online: https://www.researchgate.net/publication/354438863_Unaufmerksamkeit_Faking_Speedster_Kontrolle_der_Datenqualitat_in_User_Experience_Befragungen/citations (accessed on 8 March 2024).
82. Larson, R.B. Controlling Social Desirability Bias. *Int. J. Mark. Res.* **2019**, *61*, 534–547. [CrossRef]
83. Silva, A.; Nayga, R.M.; Campbell, B.L.; Park, J. On the Use of Valuation Mechanisms to Measure Consumers' Willingness to Pay for Novel Products: A Comparison of Hypothetical and Non-Hypothetical Values. *Int. Food Agribus. Manag. Rev.* **2007**, *10*, 165–178. [CrossRef]
84. Sichtmann, C.; Wilken, R.; Diamantopoulos, A. Estimating Willingness-to-Pay with Choice-Based Conjoint Analysis—Can Consumer Characteristics Explain Variations in Accuracy? *Br. J. Manag.* **2011**, *22*, 628–645. [CrossRef]
85. Macdiarmid, J.I.; Cerroni, S.; Kalentakis, D.; Reynolds, C. How Important Is Healthiness, Carbon Footprint and Meat Content When Purchasing a Ready Meal? Evidence from a Non-Hypothetical Discrete Choice Experiment. *J. Clean. Prod.* **2021**, *282*, 124510. [CrossRef]
86. Malone, T.; Lusk, J.L. Taste Trumps Health and Safety: Incorporating Consumer Perceptions into a Discrete Choice Experiment for Meat. *J. Agric. Appl. Econ.* **2017**, *49*, 139–157. [CrossRef]
87. Akaichi, F.; de Grauw, S.; Darmon, P.; Revoredo-Giha, C. Does Fair Trade Compete with Carbon Footprint and Organic Attributes in the Eyes of Consumers? Results from a Pilot Study in Scotland, The Netherlands and France. *J. Agric. Environ. Ethics* **2016**, *29*, 969–984. [CrossRef]
88. Altmann, B.A.; Risius, A.; Anders, S. Feeds of the Future: A Choice Experiment of Chicken Breast Produced with Micro-Algae or Insect Meal. In Proceedings of the 59th Annual Conference, Braunschweig, Germany, 25–27 September 2019.
89. Alfnes, F.; Guttormsen, A.G.; Steine, G.; Kolstad, K. Consumers' Willingness to Pay for the Color of Salmon a Choice Experiment with Real Economic Incentives. *Am. J. Agric. Econ.* **2006**, *88*, 1050–1061. [CrossRef]
90. Gupta, S.; Ogden, D.T. The Attitute—Behavior Gap in Environmental Consumerism. *APUBEF Proc.* **2006**, *3*, 199–206.
91. Park, H.J.; Lin, L.M. Exploring Attitude–Behavior Gap in Sustainable Consumption: Comparison of Recycled and Upcycled Fashion Products. *J. Bus. Res.* **2020**, *117*, 623–628. [CrossRef]
92. Elzerman, J.E.; van Boekel, M.A.J.S.; Luning, P.A. Exploring Meat Substitutes: Consumer Experiences and Contextual Factors. *Br. Food J.* **2013**, *115*, 700–710. [CrossRef]
93. Jetzke, T.; Richter, S.; Wunder, S. *Fleisch Der Zukunft—Trendbericht Zur Abschätzung Der Umweltwirkungen von pflanzlichen Fleischersatzprodukten, Essbaren Insekten und In-Vitro-Fleisch*; Umweltbundesamt: Berlin, Germany, 2019.